COST STUDY ANALYSIS

Elementary and Secondary Education in Kansas: Estimating the Costs of K-12 Education Using Two Approaches

ABRIDGED VERSION

REISSUED JANUARY 2015

A Report to the Legislative Post Audit Committee
By the Legislative Division of Post Audit
State of Kansas
January 2006

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January 26, 2015

To: Members, Kansas Legislature

In January 2006, Legislative Post Audit released *Elementary and Secondary Education in Kansas: Estimating the Costs of K-12 Education Using Two Approaches.* The report was provided to all members of the Legislature, and in the intervening years has been referred to many times by legislators and others with an interest in school finance.

Although the report now is nine years old, much of the information remains relevant to the ongoing school finance discussion. This abridged version of the original cost study document contains the 114 pages of the report itself, without the nearly 230 pages of appendices that accompanied the original.

Of course, if any member wants to review the complete 2006 report, it is available on our website at kslpa.org, and we would be happy to answer any questions or provide other information upon request.

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January 9, 2006

To: Members of the Kansas Legislature

This report contains the results of both the input-based and outcomes-based studies of K-12 education costs mandated by the 2005 Legislature.

For those who are interested in the bottom-line findings of the two cost studies, refer to the Question 1 Answer in Brief on pages 17-20, and to Section 1.7: Cost Study Results, pages 76-84. A comparison of the cost study results for individual school districts is presented in Appendix 16.

Finally, in developing this report, Legislative Post Audit has amassed considerable data related to school districts' education costs. We will be happy to use those data to answer additional questions you may have. We look forward to working with you during the 2006 legislative session.

Barbara J. Hinton
Legislative Post Auditor

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Elementary and Secondary Education in Kansas: Estimating the Costs of K-12 Education Using Two Approaches

School finance legislation enacted by the 2005 Legislature directed the Legislative Division of Post Audit to conduct two professional cost study analyses to estimate the cost of providing a public elementary and secondary education in Kansas:

- one study using an input-based approach to estimate how much it should cost school districts to deliver the curriculum, services, and programs mandated by State statute, as well as high school graduation requirements developed by the State Board of Education and State scholarship and college admissions requirements developed by the State Board of Regents. This approach doesn't address meeting performance outcome standards set by the State Board of Education.

- another study using an outcomes-based approach to estimate how much it should cost school districts to meet the educational performance outcome standards set by the Board of Education.

The purpose of these analyses is to "assist the legislature in the gathering of information which is necessary for the legislature's consideration when meeting its constitutional duties to: (1) provide for intellectual, educational, vocational and scientific improvement in public schools established and maintained by the state; and (2) make suitable provision for the finance of educational interests of the state."

These cost studies, which were required to be completed by the start of the 2006 legislative session, answered the following questions:

1. **Regarding the estimated cost for regular education in K-12 public education:**

   a. **What should it cost for regular K-12 education to deliver the curriculum, related services, and programs mandated by State statute?**

   b. **What should it cost for regular K-12 education to meet the performance outcome standards set by the Board of Education?**

2. **What are the additional estimated costs for educating K-12 special needs students, and how do those costs vary by district size and location?**

3. **For bilingual and at-risk students, is there a significant relationship between the students counted for funding purposes and the students who actually receive those services?**

4. **What does educational research show about the correlation between the amount of money spent on K-12 education and educational outcomes?**

5. **What percent of the estimated cost of providing educational services and programs was funded by the various types of State aid those districts received, and what percent of the cost was funded by districts' local option budgets?**

Although much of the work performed on the cost studies was conducted by the Division's staff, we also contracted with the Center for Public Research at Syracuse University to conduct the statistical tests for the outcomes-based approach. The consultant's report is contained in **Appendix 17** of this report.

The methodologies we followed for all the cost study work we performed are described briefly under each section, and are detailed in **Appendix 1.** A copy of the law directing the cost studies is in **Appendix 2**, and the scope statement approved by the Legislative Post Audit Committee is included in **Appendix 3.** For reporting purposes, we have combined questions 1, 2, and 5 on the scope statement in this report.

Scope Issues Related to the Cost Studies

It's important for the reader to understand that any study involving the estimation of costs for something as complex as K-12 education involves a significant number of decisions and assumptions. Different decisions or assumptions can result in very different cost estimates. For example, in the input-based cost study, the estimated cost of funding enough teachers in all school districts to achieve an average class size of 20 students is significantly more expensive than funding enough teachers to achieve an average class size of 25 students.

Our goal was to make decisions and assumptions in both cost studies that were reasonable, credible, and defensible. Because K-12 education funding levels ultimately will depend on the Legislature's policy choices, we designed the input-based cost study to allow different "what if" scenarios. For the outcomes-based cost study, we can adjust certain variables, such as the performance outcome standards, to develop other cost estimates. In either study, we could adjust assumptions about the level of efficiency at which districts are expected to operate.

In other words, it's important to remember that these cost studies are intended to help the Legislature decide appropriate funding levels for K-12 public education. They aren't intended to dictate any specific funding level, and shouldn't be viewed that way.

Finally, within these cost studies we weren't directed to, nor did we try to, examine the most cost-effective way for Kansas school districts to be organized and operated. Those can be major studies in their own right. However, such issues potentially could be addressed in the on-going school audits we'll be doing after these cost studies are completed. Topics for those audits will be approved by the 2010 Commission, which was created by the 2005 Legislature.

OVERVIEW: Information Related to K-12 Public Education

BACKGROUND: Financing Public K-12 Education in Kansas

The School District Finance and Quality Performance Act provides the formula for computing State aid for the 300 unified school districts in Kansas. The process for determining the amount of General State Aid each school district will receive from the State is complex, but generally can be described as follows:

- First, the Legislature determines a baseline cost called Base State Aid Per Pupil (BSAPP). For the 2005-06 school year, BSAPP is $4,257.

- Second, what's often referred to as a foundation-level of funding is determined by multiplying the BSAPP times each district's "adjusted" enrollment. (Full-time-equivalent (FTE) enrollments in the district are adjusted to recognize and help fund the additional costs districts incur for such things as low enrollment levels and special needs students. ***Figure OV-1*** summarizes those weighting factors.) In Kansas, this foundation-level of funding is called State Financial Aid.

- Third, the State's share of this foundation-level of funding is calculated by subtracting what's called the "local effort" from the amount computed above. Local effort is the sum of locally generated resources, such as proceeds from the mandatory Statewide 20-mill property tax, unexpended and unencumbered balances remaining in a district's General Fund, certain federal funds, and other miscellaneous local revenues that are available to help finance the district's educational activities. In Kansas, the State's share of this foundation-level of funding is called General State Aid.

In addition to the General State Aid a district receives, the law allows local school boards to approve additional spending in the form of a local option budget. The local option budget allows districts to raise money locally for enhancing their educational programs. For 2005-06,

Figure OV-1
Summary of Weightings Used in Kansas' School Finance Formula

Weight/Adjustment	Description	2005-06 Basis
Weights Related to District Size		
Low Enrollment	Applies to school districts with fewer than 1,662 students. It attempts to recognize differences in costs between large and small districts.	For districts with 100 or fewer students, the weight slightly more than doubles a district's FTE students. That factor declines as enrollment rises to the cutoff point of 1,662 students. At that cut-off point, a district would get credit for having about 2% more students than it actually has.
Correlation	Applies to school districts with 1,662 or more students.	Gives each district with an enrollment of 1,662 or more FTE students about 2% more students.
Weights Related to Special Student Populations		
At-Risk	Provides additional funds for students who are at risk of failing or dropping out of school.	For each student that qualifies for free lunch, a district gets to count an additional 0.193 FTE.
Bilingual Education	Provides additional funds to assist with teaching students whose primary language is not English.	For each qualifying bilingual FTE student, a district gets to count an additional 0.395 FTE (based on contact hours).
Vocational Education	Provides additional funding to assist with the higher costs of providing vocational programs.	For each FTE student enrolled in an approved Vocational Education program, a district gets to count an additional 0.5 FTE (based on contact hours).

Special Education	Provides additional funding to assist with the higher costs of providing Special Education services to students.	The total dollar amount of Special Education aid a district is scheduled to receive is converted to FTE students by dividing it by the BSAPP ($4,257). These additional FTE are added to the district's enrollment.
Other Weights		
Transportation	Provides additional funding for the cost of transporting students who live more than 2.5 miles from school.	Per-student transportation costs are determined by a formula, and the results are divided by the BSAPP amount. The result is multiplied by the number of students a district transports 2.5 or more miles to school.
School Facilities *(Not addressed in this study)*	Provides additional funding to help with the costs associated with new school facilities.	Gives a district an additional number of FTE students equal to 25% of the number of FTE students attending the new school. *(This weighting is available for 2 years only.)*
Ancillary School Facilities *(Not addressed in this study)*	Allows a district to petition the State Board of Tax Appeals to allow it to levy additional taxes to defray the cost of operating new facilities not otherwise funded in the law.	Gives a district an additional number of FTE students equal to the quotient obtained by dividing the additional taxes levied by the BSAPP ($4,257)
Declining Enrollment *(Not addressed in this study)*	Provides additional funding for districts experiencing declining enrollment that meet certain criteria.	There are two provisions, both of which are available to districts with declining enrollment. • If a district's enrollment has declined from the preceding school year, a district can count either its unweighted FTE enrollment from the previous year or a 3-year average of its unweighted FTE enrollment. • Additionally, if the district meets certain criteria it can petition the Board of Tax appeals for authority to levy additional local taxes. (The weight a district receives is determined by dividing the amount of additional taxes generated by BSAPP ($4,257).
Source: Kansas Legislative Research Department website		

each district's local option budget is limited to 27% of its State Financial Aid amount. State law places a number of restrictions on the adoption of local option budgets.

The State also provides assistance to districts with relatively low assessed valuations per student to help fund districts' local option budgets and capital outlay and bond and interest expenses. This aid is "equalized," a term used to recognize that due to varying tax bases in individual school districts, a 1 mill tax levied by one school district may generate a very different amount than a 1 mill tax levy in another district. Although the processes are different for each of these types of aid, essentially what happens is that each district's assessed valuation per-pupil is ranked high to low, and a certain assessed valuation is established as the standard. Districts with assessed valuation above the standard receive no equalization aid from the State, while those below the standard receive aid to make up the difference between what a mill generates in their district and what a mill generates at the standard level.

BACKGROUND: Litigation That Led to Our Cost Studies

In 1999, two school districts filed suit in Shawnee County District Court alleging the State's funding formula failed to make suitable provisions to fund K-12 education as required by Article 6 of the Kansas Constitution. That case—*Montoy, et al. v. State of Kansas*— eventually was appealed to the Kansas Supreme Court.

In January 2005 the Kansas Supreme Court issued a memorandum opinion on the school finance case. In its initial ruling on this case, the Court found that the Legislature had failed to meet its burden to "make suitable provision for finance" of public schools, and said "it is clear increased funding will be required."

Among other things, the Court said that the following provided additional evidence of the inadequacy of funding:

- while the original intent of the provision for local option budgets was to fund "extra" expenses, some school districts had been forced to use their local option budgets to fund regular education
- a school cost study the Legislature had commissioned in 2001 from the consulting firm of Augenblick & Myers had concluded both the formula and funding levels were inadequate to provide what the Legislature had defined as a suitable education
- the lack of a cost analysis could distort the weighting factors related to low-enrollment districts and students who were at-risk or who were in special, bilingual, or vocational education

During the 2005 regular legislative session, the Legislature authorized $141.1 million in additional funding for public schools for the 2005-06 school year. That legislation also called for Legislative Post Audit to conduct a "professional cost study analysis to determine the costs of delivering the kindergarten and grades one through 12 curriculum, related services and other programs mandated by state statute in accredited schools."

On June 3, the Supreme Court ordered the Legislature to increase funding for schools by $285 million by July 1, 2005. The Court relied heavily on the Augenblick & Myers study in arriving at that figure. The estimated cost of implementing the recommendations in that study, updated for inflation through school year 2003-04, was computed at $853.0 million. The $285 million funding figure ordered by the Court represented one-third of this recommended amount.

The Court indicated it would withhold judgment on whether to require the Legislature to fund the remaining two-thirds ($568 million) for the 2006-07 school year until after Legislative Post Audit completed its cost study. But the Court rejected the requirements related to the earlier cost study enacted by the 2005 Legislature because it said the study was an inputs-only study. The Court said that merely determining how much it costs to pay for statutorily required programs and services did not answer the question of how much it costs to enable students to meet the educational standards adopted by the State Board of Education.

In subsequent legislation, the 2005 Legislature, meeting in special session, increased funding for K-12 public schools by an additional $148.4 million, for a total increase of $289.5 million. That figure exceeded the Court's order by $4.5 million. The Legislature also added the requirement that Legislative Post Audit conduct two studies—one inputs based, and the other outcomes based. Those studies were required to be completed before the start of the 2006 legislative session.

The Court has indicated that funding for elementary-secondary education beyond 2005-06 is contingent on the results of the outcomes-based cost study. The Court retained the option of

ordering that the remaining funding based on the Augenblick & Myers recommendations be appropriated for the 2006-07 school year.

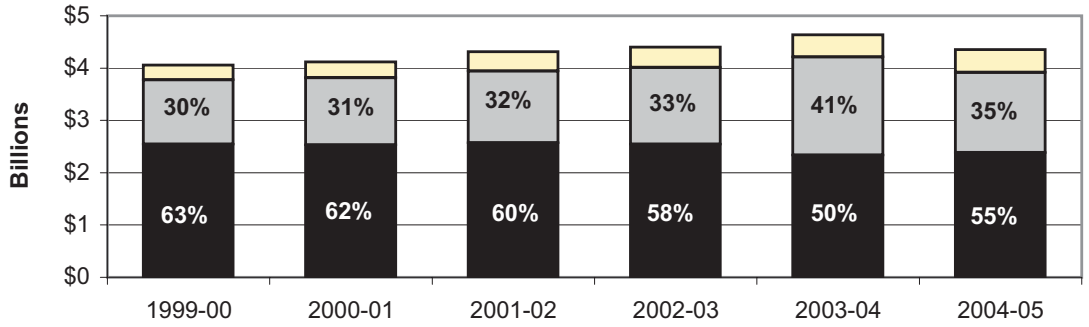
BACKGROUND: K-12 Public School Revenues and Expenditures

Revenues. For the 2004-05 school year, Kansas school districts received just over $4.4 billion in revenues, or nearly $10,000 per FTE student. Those revenues come primarily from State, local, and federal sources as shown in ***Figure OV-2*** on the next page.

As the figure shows, the State provides the largest share of those revenues—55%, or an average of nearly $5,500 per student. This amount includes all State sources, not just the General State Aid districts receive. Those additional sources include the amount the State pays to "equalize" funding for districts with relatively low assessed valuations per student, as well as the employers' share of the KPERS contribution for all school districts.

Total revenues for K-12 public education over time are shown in ***Figure OV-3***. As the figure shows, on an inflation-adjusted basis those revenues have fluctuated somewhat over the past 6 years, but dropped slightly in 2004-05. That's primarily because revenues in 2003-04 were artificially high; the State accelerated local property tax collections that year to cover revenue shortfalls. The figure also shows that the State's share of total revenues has dropped from about 63% in 1999-00.

Figure OV-3
Total Education Revenues By Source[(a)]



(a) Adjusted for inflation to 2004-05 dollars.
Source: Dept. of Education data

Figure OV-2
Summary of 2004-05 State, Local, and Federal Revenues for School Districts
(in Millions)

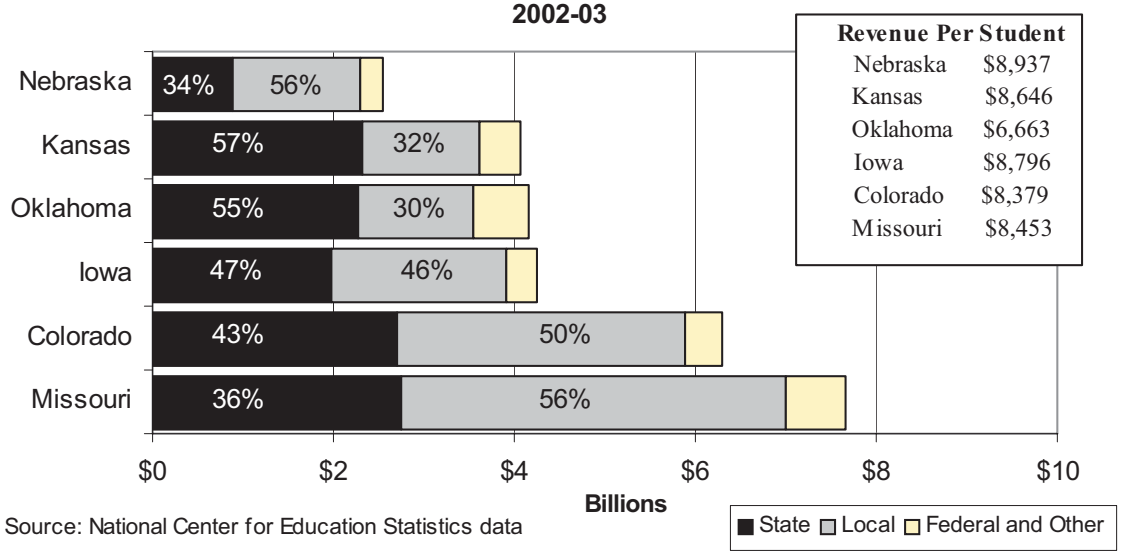
State Sources		Local Sources		Federal Sources	
General State Aid	$1,772.2	Ad Valorem Tax	$1,140.0	Title I	$92.1
Special Education Aid	$250.7	Other Miscellaneous Local	$105.1	Child Nutrition Programs	$82.5
Suppl. State Aid (equalized)	$154.7	Motor Vehicle Tax	$85.7	Restricted Grants	$81.7
KPERS Contrib. for USD's	$121.2	Food Service	$82.3	Special Ed./ Handicapped Aid	$68.6
Capital Improvement Aid	$51.8	Interest on Idle Funds	$25.3	Medicaid	$39.5
Parent Education Aid	$7.9	Delinquent Taxes	$22.1	Title II	$24.4
Post-Secondary Aid	$4.8	Contributions & Donations	$13.5	PL382 (In Lieu of Taxes)	$13.2
Vocational Aid	$4.3	Reimbursements	$13.3	Impact Aid Construction	$8.3
Mineral Production Tax	$3.2	Textbook Rental	$11.4	Title IV (21st Century)	$7.4
Payments from SRS	$2.8	Student Activities	$10.0	Title V (Innovative Programs)	$5.1
School Food Assistance	$2.6	State Aid Reimbursement	$8.8	Reading Excellence	$5.0
Safety Aid	$1.5	Tuition	$6.6	Title IV (Drug Free)	$2.6
Restricted Grants-in-Aid	$1.2	Transportation Fees	$4.2	Title III (English Lang. Acquis.)	$2.3
Capital Outlay Aid (a)	$0.8	In Lieu of Taxes IRB's	$3.2	Regular Aid (Carl Perkins)	$2.0
Deaf / Blind Aid	$0.3	Recreational Vehicle Tax	$1.2	Special Project Aid	$1.1
Adult Basic Aid	$0.3			Bilingual Aid	$1.1
Catastrophic Aid	$0.2			Adult Education Aid	$0.8
Total State	**$2,380.5**	**Total Local**	**$1,532.7**	**Total Federal**	**$437.7**

GRAND TOTAL	**$4,350.9**		
Percent of Total	**55%**	**35%**	**10%**
Amount Per Student	**$5,451**	**$3,510**	**$1,002**

(a) A portion of this money may be used for postsecondary education.
Source: Department of Education data

Revenues compared with other states. At the time of our cost study, the most recent comparative information on states' K-12 public education revenues from the National Center for Education Statistics was for 2002-2003. Comparative data for Kansas and nearby states are shown in ***Figure OV-4***. As the figure shows, Kansas' per-student revenues were near the middle; they were slightly less than Nebraska and Iowa, but higher than in the other three states.

Figure OV-4
Comparison of Other States' Total K-12 Public Education Federal, State, & Local Revenue Per Student 2002-03



Source: National Center for Education Statistics data

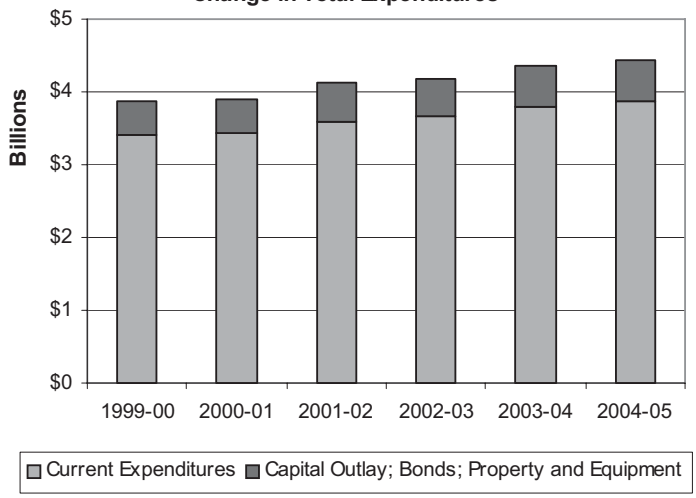
The figure also shows that the State of Kansas contributed the largest share of State revenues for K-12 public education that year, and had the second lowest share of revenues coming from local sources.

Expenditures. School districts account for their expenditures in a series of funds. They pay most of their routine operating expenditures from their General Funds and Supplemental General Funds. There are also a number of special-purpose funds for things like Special Education, Food Service, and Capital Outlay. In all, districts may use more than 30 different funds to account for their spending.

Within those funds, expenditures are further broken down into a number of functions that tell the general purpose of the expenditure (such as instruction or school-level administration), and object codes that tell what the money was spent on (such as salaries, supplies, etc.). The table in **Appendix 4** shows this information.

Adjusted for inflation, districts' total expenditures have increased about 15% over the past 6 years. As shown in ***Figure OV-5*** , they've risen from just under $3.9 billion to slightly more than $4.4 billion. **Appendix 5** shows the percent of total expenditures each district spent on functional areas such as instruction, support, and administration, for 2004-05.

Figure OV-5
Change in Total Expenditures[(a)]

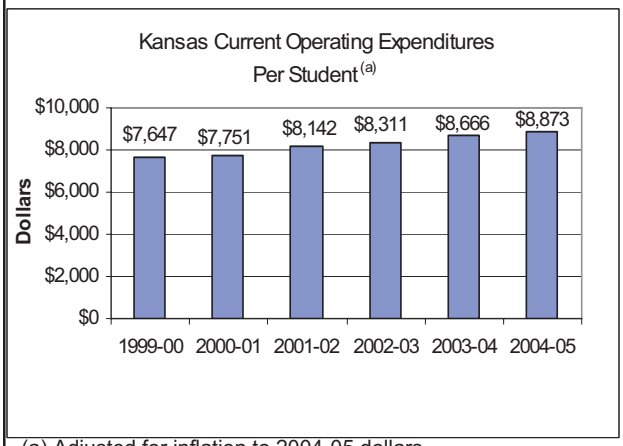


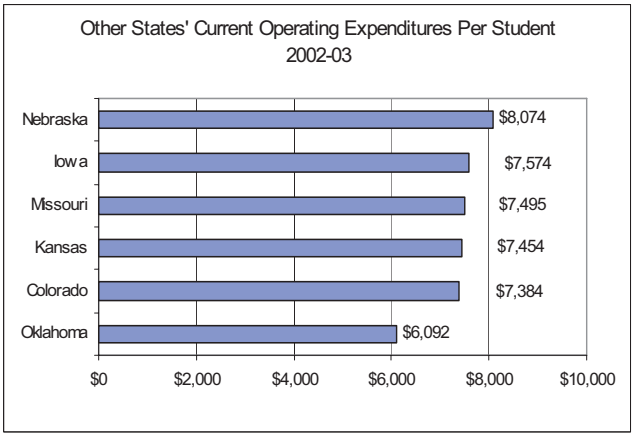
(a) Adjusted for inflation to 2004-05 dollars.
Source: Deptartment of Education data

Expenditures compared with other states. Typically, school districts are compared based on "current operating expenditures" (total expenditures minus capital projects, debt service, and certain other expenditures). This is done so that construction and debt payments don't distort the picture of what actually is being spent to educate students.

Figure OV-6 shows the trend in current operating expenditures per student in Kansas. It also shows how current expenditures per student in Kansas compare to neighboring states for 2002-03 (the most recent year for which comparative information was available). Kansas ranked 4th out of 6 states in current operating expenditures per student that year.

Figure OV-6
Comparison of Kansas and Other States' Current Operating Expenditures Per Student





(a) Adjusted for inflation to 2004-05 dollars.
Source: Department of Education data

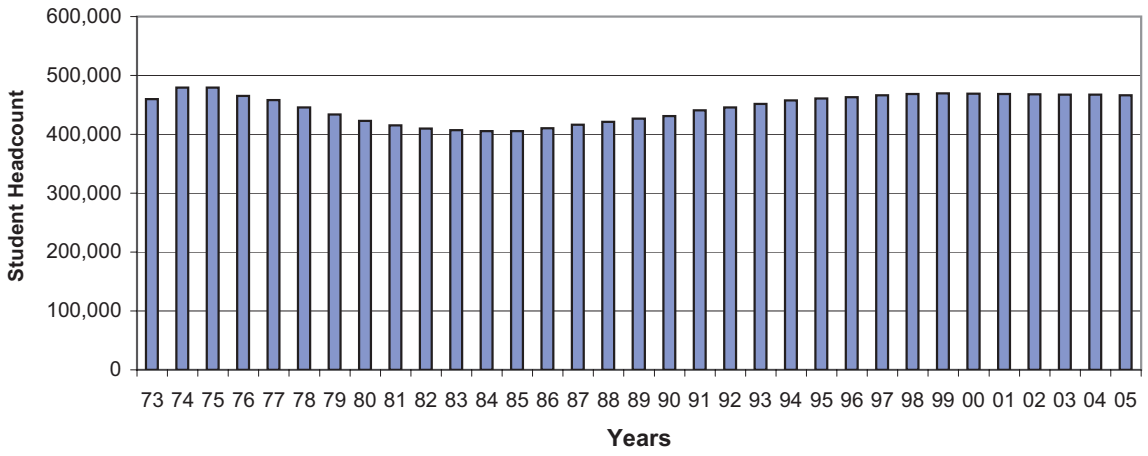
Source: NCES preliminary data for 2002-03

BACKGROUND: Trends In Student Populations

The number of K-12 students will fluctuate from year to year depending on birth rates and the general movement of people in and out of the State.

The overall enrollment trend in Kansas is declining. ***Figure OV-7*** shows how student populations have fluctuated since the mid 1970s. As the figure shows, Kansas' headcount enrollments have dropped each year since 1998-99, when it was at a peak of 469,758 students. For 2005-06, enrollment levels have dropped to 466,037 students.

Figure OV-7
Changes in Kansas Headcount Enrollments



Source: Department of Education data

Some districts have experienced significant enrollment declines in recent years, while others have seen explosive growth. For example, since 1999-00, Prairie Heights in Decatur County has experienced a 67% drop in students, while Desoto in Johnson County has experienced a 62% increase in its enrollment.

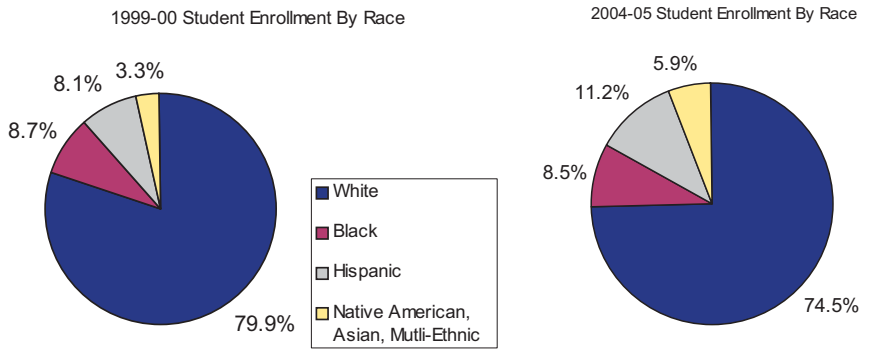
Special needs students have been growing as a percent of Kansas' K-12 student populations. They include students who are in Special Education, as well as those who need special programs because they are at-risk of underperforming in school or have difficulties speaking or understanding the English language. ***Figure OV-8*** on the next page shows how the demographics of Kansas students has changed in just the past five years.

Since 1999-00, the population of students in Special Education has grown 16%, and the population of students with low-income families has grown almost 26%.

Figure OV-8 Enrollment Change by Major Population Category School Years 2000-2004				
Population Category	**Enrollment Count**	**1999-00**	**2004-05**	**% Change 2000-2005**
Regular Education	FTE	445,759.3	436,688.9	-2.0%
Special Education [(a)]	FTE	23,027.8	26,808.6	16.4%
Vocational Education	FTE	12,470.4	14,926.6	19.7%
Free-lunch Student	Headcount	107,248	134,811	25.7%
English as a Second Language [(a)]	Headcount	18,277	23,113	26.5%
(a) Data were only available for 2000-2004. Source: LPA analysis of Department of Education data.				

Figure OV-9 shows how the ethnic make-up of students in Kansas schools has changed during those same years. As the figure shows, the population of minority students has significantly increased. That's particularly true among Hispanics, who've grown from 8% to 11% of the student population. That means more than 13,000 new Hispanic children have come into the Kansas school system in just 5 years. Many of these children aren't fluent in English, and need special services to help them learn in the school system.

Figure OV-9
Ethnic Student Population Changes



Source: Department of Education data

These trends are important—students who need Special Education, are at-risk, or are non-native English speakers are more expensive to educate because they need more intensive services.

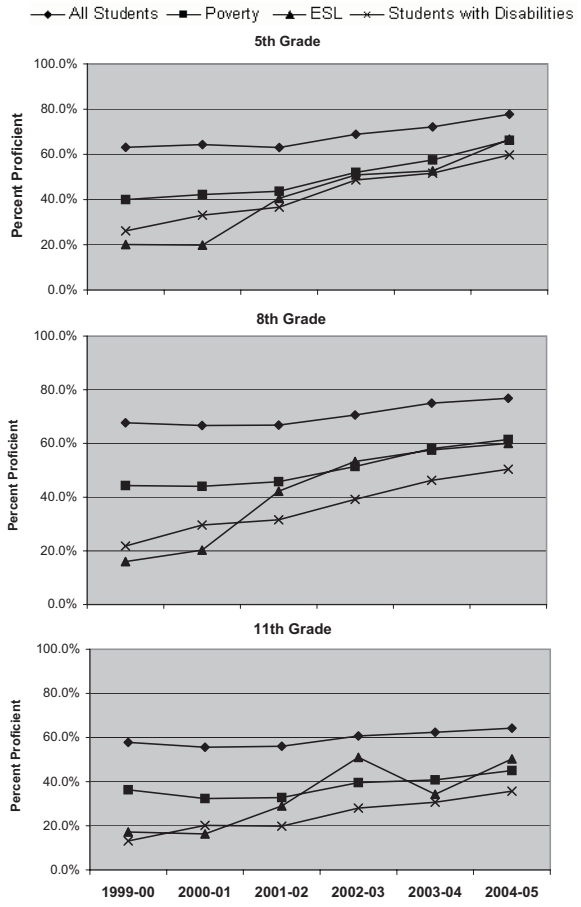
BACKGROUND: Trends In Student Achievement

Kansas students are tested periodically to assess how well they have mastered basic skills, such as reading and math. Those tests include Kansas' own Statewide assessment tests, which are required by the School District Finance and Quality Performance Act, and national assessments, which are uniform tests administered in different states.

Kansas students have shown improvement on Statewide assessment tests, but some student groups are struggling to achieve outcomes. State law requires the State Board of Education to provide for assessment tests to be administered at three grade levels in the core academic areas of mathematics, science, reading, writing, and social studies, and to establish curriculum standards for such core academic areas. Through the 2004-05 school year, the State Board required, 5th, 8th, and 11th graders to be tested in reading, and 4th, 7th, and 10th graders to be tested in math. Beginning with the 2005-06 school year grades 3 through 8 and one high school grade will be tested annually in reading and math. In subsequent years, additional tests will be required in science, social studies, and writing.

Figures OV-10 and ***OV-11*** show the percentage of students who have scored "proficient" or above on the Statewide math and reading assessments since 1999-00.

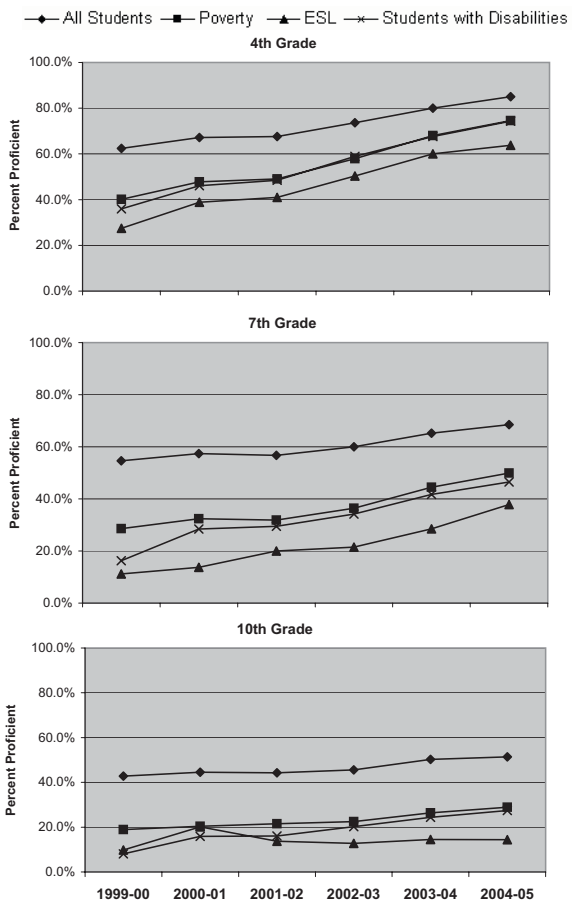
Figure OV-10
Kansas Reading Assessment Scores



KS Board of Education Proficiency Level Goals (%)				
	2001-02	2002-03	2003-04	2004-05
5th and 8th	51.2%	51.2%	57.3%	63.4%
11th	44.0%	44.0%	51.0%	58.0%

Source: Department of Education data

Figure OV-11
Kansas Math Assessment Scores



KS Board of Education Proficiency Level Goals (%)				
	2001-02	2002-03	2003-04	2004-05
4th and 7th	46.8%	46.8%	53.5%	60.1%
10th	29.1%	29.1%	38.0%	46.8%

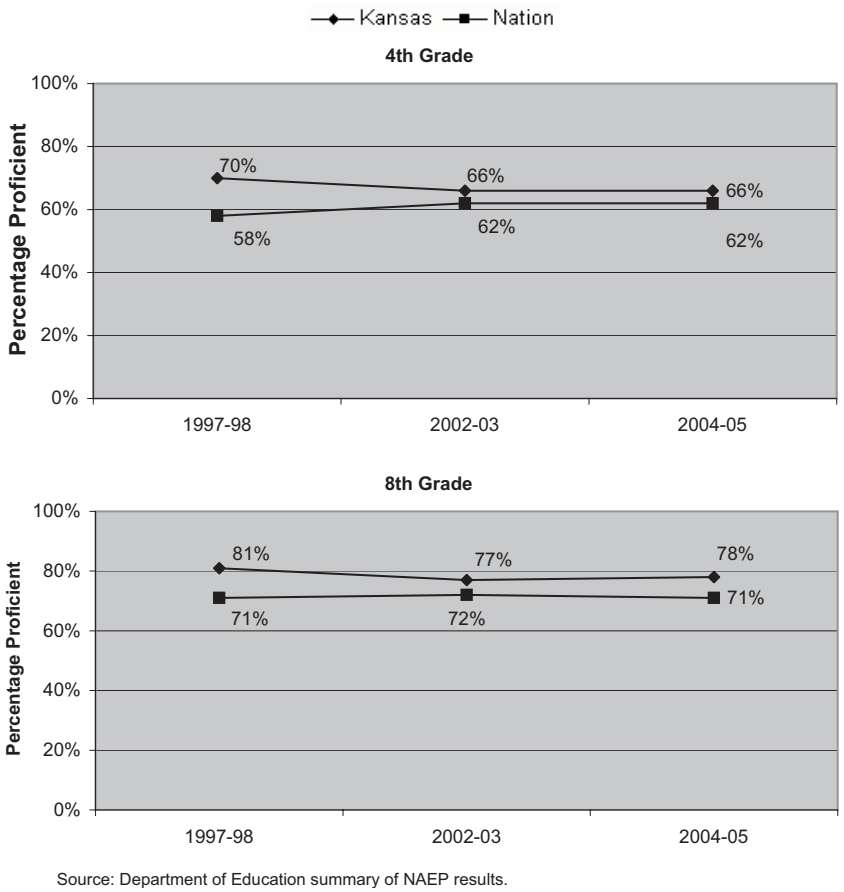
Source: Department of Education data

The percent of all students scoring proficient or above generally has increased since 2002, and has exceeded the student performance outcomes adopted by the Board of Education in all areas. But the figures also show that, when those proficiency scores are broken down for various groups of students, most of the subgroups are struggling to meet the performance outcomes.

Kansas students compare favorably on national assessment tests. Generally, assessment tests given to students are different from one state to the next, so the results can't be compared. One test that does allow for comparisons at a national level is the National Assessment of Education Progress (NAEP), also known as the Nation's Report Card.

Students in both 4th and 8th grades are tested every other year in reading and math. The results from the NAEP are statewide for each state, and are not available on a school or district level. Those results are shown for Kansas and nationwide on ***Figures OV-12*** and ***OV-13***. They represent the percent of students who scored "basic" or above, which is equivalent to the "proficient" or above designation on Kansas' assessment tests.

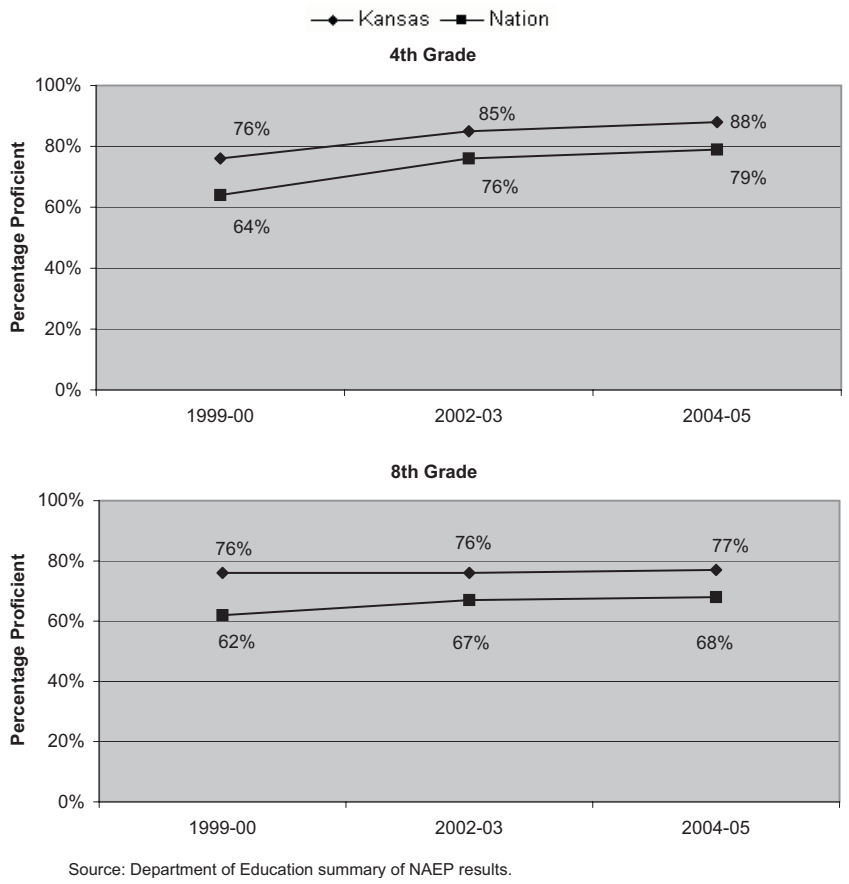
Figure OV-12
Comparing Kansas to National Averages on NAEP Reading Exams



Source: Department of Education summary of NAEP results.

As these figures show, Kansas' reading scores on the NAEP exams have declined at both the 4th and 8th grade levels, but Kansas students still scored above the national average.

Figure OV-13
Comparing Kansas to National Averages on NAEP Math Exams



Source: Department of Education summary of NAEP results.

Kansas' national assessment scores still compare favorably after accounting for the percentage of disadvantaged students in each state. Even though the NAEP tests exams are uniformly administered in participating states, it's still difficult to directly compare student scores from state to state because of variations in the types of students each state has within its school system. All other things being equal, a state with a higher percentage of disadvantaged students could not be expected to achieve the same results as a state with only a small percentage of disadvantaged students.

To put states on a more equal footing, Standard and Poor's, a financial services firm that reviews school district data, conducted a special analysis of the 2005 NAEP results. It used sophisticated statistical techniques to examine the relationships between the percentage of disadvantaged students in each state and that state's test scores.

In its analysis, Standard & Poors compared each state to where it should be expected to score, given the percentage of disadvantaged students in its population. Kansas was one of the states identified as outperforming in both 4th grade and 8th grade math, even after adjusting for the percentage of disadvantaged students in the various states. These results are summarized in ***Figure OV-14***.

Figure OV - 14
NAEP Performance Standard: Proficient or Better
2005 and 2003 Risk-adjusted Analysis

	Reading		***Math***	
	Grade 4	***Grade 8***	***Grade 4***	***Grade 8***
Outperformers *Performing consistently above statistical expectations*	***Kentucky**** ***Massachusetts**** ***New York****	***Kentucky**** ***Massachusetts**** ***New York****	*Florida* ***Kansas*** ***Minnesota*** *North Carolina* ***South Carolina*** *Texas**	***Kansas*** *Massachusetts** ***Minnesota*** *Montana* *New York* *Oregon* ***South Carolina****
Underperformers *Performing consistently below statistical expectations*	***Alaska*** ***California**** ***Hawaii*** ***Nevada*** ***Wash (D.C.)****	***Alaska*** ***California**** ***Hawaii*** ***Nevada*** ***Wash (D.C.)****	***Alabama*** ***Alaska*** ***Hawaii*** ***Nevada*** ***Rhode Island*** ***Wash (D.C.)****	***Alabama*** ***Alaska*** ***Hawaii*** ***Nevada*** *New Hampshire* ***Rhode Island*** ***Wash (D.C.)****

Note: States that perform consistently in the same subject areas across grade levels are highlighted in bold.
Note: States marked with an * have exclusion rates of students with disabilities or limited English proficiency of 5% or greater. Testing exclusions may have an impact on state proficiency rates, as these excluded students can generally be expected to achieve at lower performance levels than other students.

Source: "Leveling the Playing Field 2005: Identifying Outperforming and Underperforming States on the NAEP in Demographic Context." Standard and Poors 2005

QUESTION 1: What Are the Estimated Costs for K-12 Public Education in Kansas, and How Do Those Estimates Compare with Current State Funding Levels?

ANSWER IN BRIEF: The cost studies we conducted were designed to identify the estimated costs for K-12 public education in the following areas:

- base-level costs for **regular education** using two different approaches: an input-based approach and an outcomes-based approach
- the **enrollment weights** associated with small and large districts
- the additional costs (and weights) for **special needs students** (at-risk, bilingual, and Special Education students)
- two of the other costs funded as part of State funding formula (Vocational Education and transportation)
- regional variations in costs (primarily because of differences in teacher salaries across the State)

Figure 1-1 on the next page presents the results of our work in each area compared with the State's current school finance formula. The work we did was based on historical expenditures through either 2003-04 or 2004-05, depending on the availability of the information at the time we were doing our analyses. The figure shows our estimates inflated to both the current funding year (2005-06) and the next funding year (2006-07).

Our estimates were derived using both an input-based approach, an outcomes-based approach, and other reviews and analyses performed by Legislative Post Audit staff. Those results are summarized very briefly below. Sections 1.1 through 1.6, which follow this Answer in Brief, provide a more detailed discussion and rationale for each cost estimate. Section 1.7 shows the results of our cost studies compared with current State and local funding levels.

- **Estimated base-level costs for regular education: input-based approach.** We developed this estimate using a modified resource-oriented approach, where we built prototype districts of various sizes, then estimated the resources needed to provide what's mandated by statute or necessary to run a district operating at an above-average level of efficiency. Under this approach, the estimated base-level costs per student using three different class-size models are higher than the current Base State Aid Per Pupil in both years. (Section 1.1)

- **Estimated base-level costs for regular education: outcomes-based approach.** We hired consultants to perform the sophisticated statistical techniques involved in a cost function analysis that would estimate the cost of meeting the performance outcome standards adopted by the State Board of Education. Under this approach, the estimated base-level cost per student is less than the current Base State Aid Per Pupil for 2005-06. In part, that's because the standards are relatively low for that year. For 2006-07, the estimated base-level cost per student for regular education under the outcomes-based approach is higher than the current Base State Aid Per Pupil. That's partly because of inflation, but also because the standards are higher in 2006-07. Those standards will continue to increase in future years. (Section 1.2)

- **Low-enrollment and correlation (high-enrollment) weights.** These enrollment weights are a function of the base-level cost estimates produced by the input-based and outcomes-based approaches. Under all cost study approaches, enrollment weights generally were lower than under the current weights. (Sections 1.1 and 1.2)

Figure 1-1
Comparing Cost Study Results to the Current State Funding Formula
2005-06 and 2006-07

	Current Funding Formula	Input-Based Approach (Using 3 Class-Size Models)			Outcomes-Based Approach
		Average 25 students/class	Average 18/23 students/class	Average 20 students/class	
Base-level costs per FTE student	05-06 = $4,257 06-07 = $4,257	05-06 = $4,375 06-07 = $4,519	05-06 = $4,748 06-07 = $4,904	05-06 = $4,943 06-07 = $5,105	05-06 = $4,167 06-07 = $4,659
Low-enrollment weight (to 3 decimals)	range: 1.014–0.021	range: 1.122–0.000	range: 0.956–0.000	range: 0.879–0.000	range: 0.773–0.008
Correlation (high-enrollment) weight (to 3 decimals)	0.021 for districts ≥ 1,662	range: 0.000–0.028 for districts ≥2,000	range: 0.000–0.029 for districts ≥2,000	range: 0.000–0.024 for districts ≥2,000	0.008 for districts >1,700
At-Risk (poverty) weight (per free-lunch student)	0.193	0.484			
Additional Urban-Poverty weight (per free-lunch student)	---	0.726			
Bilingual weight (two different bases)	0.395 per FTE bilingual student	0.100 per headcount bilingual student			
Additional cost per FTE Special Education student	05-06 = $10,736 06-07 = $12,185	05-06 = $14,232 06-07 = $15,159			
Additional cost per FTE Vocational Education student	05-06 = $2,129 06-07 = $2,129	05-06 = $1,375 06-07 = $1,420			
Additional cost per student transported >2.5 miles	05-06 = $594 06-07 = $613	05-06 = $491 06-07 = $507			
Regional cost adjustment (applied to teacher salaries)	---	range: -2% to +5% of costs			
Given above cost estimates, additional amount needed to provide "foundation-level" funding compared with current funding levels *(in millions)*	---	06-07 = $316.2	06-07 = $519.5	06-07 = $623.7	06-07 = $399.3
"Hold-harmless" provision so no district would receive less than under the current funding formula *(in millions)*	---	06-07 = $35.1	06-07 = $ 7.0	06-07 = $ 0.7	06-07 = $9.4

Source: LPA analysis of school district and Department of Education data.

- **Additional costs for serving at-risk students.** At-risk and urban-poverty weights were developed as part of the consultants' cost function analysis. (We apply them to both cost study approaches because they measure what it would take for students in poverty to achieve the same level of performance as other students achieve.) The ***at-risk weight*** is higher than the current weight. The ***urban-poverty weight*** isn't in the current school finance formula. It's an estimate of the significantly higher costs incurred by high-poverty, inner-city school districts. It applies only to Kansas City, Kansas City-Turner, Topeka, and Wichita. (Section 1.2)

- **Additional costs for serving bilingual students.** The bilingual weight also was developed as part of the cost function analysis, and was applied to both cost study approaches for the same reasons cited above. This weight isn't comparable to the bilingual weight under the current formula. The current formula uses student contact hours with a "bilingual-endorsed" teacher only, which significantly understates the number of bilingual students in a district. Because of the strong correlation between free-lunch and bilingual students, it's possible that some of the additional costs for serving bilingual students were picked up by the at-risk weight. The data available regarding the number of bilingual students also may be incomplete. (Section 1.2)

- **Additional costs for serving Special Education students.** We developed this cost estimate based on a detailed review of 19 sample districts and the eight cooperatives or interlocals that served them. It was based largely on districts' actual expenditures for Special Education that were above and beyond the cost of regular education, and were not covered by federal funding. Our estimated cost is higher than the current funding levels per FTE Special Education student in both years. Based on our analyses, we concluded that having students in Special Education doesn't reduce districts' regular education costs by nearly as much as the current formula reduces them (the current formula assumes a 1:1 reduction in regular education costs for each FTE student in Special Education). (Section 1.3)

- **Additional costs for serving Vocational Education students.** We developed this cost estimate based on a detailed review of 21 sample districts that offer approved Vocational Education programs. Vocational Education classes are part of a district's regular education curriculum. Our estimate was based largely on districts' actual expenditures for Vocational Education that were above and beyond the cost of other regular education classes. Our estimated cost is less than the current funding levels per FTE Vocational Education student in both years. (Section 1.4)

- **Additional costs for transporting students 2.5 miles or more.** We developed this cost estimate based on our review and analysis of the current transportation funding formula. Our estimated cost is less than the funding levels would be under the current formula. That's primarily because the current formula over-allocates total transportation costs to students who live 2.5 miles or more from school—the ones the State is helping to pay for. (Section 1.5)

- **Regional variations in teacher salaries.** We used sophisticated statistical techniques to establish the costs of a comparable teacher in each district, controlling for such factors as teacher education and experience, community cost of living, school working conditions, and district efficiency. Because teacher salaries and benefits make up half of districts' costs, we applied our results to only 50% of each district's costs. Districts with the largest increases are high-poverty urban districts and districts in the Johnson County suburbs. There's no regional cost adjustment in the current formula; the Legislature added a cost-of-living provision in 2005, but the Kansas Supreme Court stayed that provision. (Section 1.6)

- **Results of our cost studies compared with State and local funding levels.** Given the estimates developed as part of the cost studies, the additional amount needed to provide a foundation-level of funding for 2006-07 would be at least $316 million under the input-based approach, and would be

$399 million under the outcomes-based approach. Under any of the cost study approaches, the additional foundation-level funding could come from the State, from an increase in the mandatory 20-mill property tax levy, or from a combination of the two.

If any of these estimates are adopted, the State's supplemental equalization aid and its contribution to KPERS on behalf of school districts also could increase significantly. (Section 1.7)

1.1 ESTIMATING BASE-LEVEL COSTS FOR REGULAR EDUCATION USING AN INPUT-BASED APPROACH

Conducting a cost study using an input-based approach involves identifying the type and number of resources needed to provide a certain level of services, then "pricing" those resources to determine their estimated cost. The study we conducted using the input-based approach was required by law to identify the following for regular K-12 education in Kansas:

- the estimated costs of providing the curricula, programs, and services mandated by State statute or specified in high school graduation requirements and State scholarship and college admission requirements. These could be considered the costs related to a basic education; they do not take student performance outcomes into account.

- an estimate of the reasonable costs for operating schools and school districts, including costs for instruction, administration, support staff, supplies, equipment, and building operations and maintenance.

The reader should be aware there are likely to be some district expenditures unrelated to the cost of a basic education that cannot be separately identified in the data districts report to the Department of Education. Also, previous audit work we've done has shown that some districts' internal accounting records don't treat expenditures uniformly. In this cost study, we took steps to try to minimize the impact of these factors on our cost estimates.

BACKGROUND: MANDATED REQUIREMENTS FOR REGULAR EDUCATION

The major requirements we identified are summarized in ***Figure 1.1-1***. Most mandated requirements relate to the educational curricula school districts are required to provide, either at the elementary or high school level.

Figure 1.1-1
Summary of Statutory and Other Mandates, Attendance and Curriculum Requirements

	Minimum Requirement		Mandated in...
Attendance Requirements			
School Days per Year	K - 11	186 days per year	K.S.A. 72-1106
	Grade 12	181 days per year	
School Hours per Year	Kindergarten	465 hours per year (2.5/day)	K.S.A. 72-1106
	Grade 1-11	1,116 hours per year (6/day)	
	Grade 12	1,086 hours per year (6/day)	

Elementary Curriculum Requirements	Reading Writing Math (including arithmetic) Geography Spelling English (grammar and composition) History (U.S., Kansas) Civil Government (and Citizenship) Health and Hygiene Such other subjects as the State Board of Education may determine: Science Language Arts Computer Literacy Fine Arts Physical Education (incl. health & human sexuality)	K.S.A. 72-1101 Board of Education Quality Performance Accreditation criteria K.A.R. 91-31-32(c)(9)
High School Curriculum Requirements	21 units of credit are required for graduation. High schools must offer and teach 30 units of instruction. 4 units English 4 units Math 3 units Science 3 units History / Government 2 units Foreign Language 1 unit Computer Technology 1 unit Physical Education 1 unit Fine Arts Electives to fill out required hours/units	K.A.R. 91-31-35(b) K.S.A. 72-8212 K.A.R. 91-31-35(a) K.S.A. 72-116, 76-717, 72-6810, 72-1103, 72-1117(a)
Source: Kansas Statutes, Kansas Administrative Regulations, Quality Performance Accreditation criteria.		

Two other statutory requirements related to basic education had to do with student health exams and assessment tests.

- *health exams* - State law requires districts to periodically perform vision, hearing, and dental screenings for students.
- *student assessments* - K.S.A. 72-6439 requires assessment tests to be administered to three grade levels in the core academic areas of mathematics, science, reading, writing, and social studies. Beginning with the 2005-06 school year, the State's Quality Performance Accreditation standards required additional grades to be tested each year. Because our charge was to look only at statutory requirements, we did not consider costs that may be related to testing additional grades.

In addition to these requirements, we identified numerous other requirements in law, such as those relating to providing Special Education, transportation, and food service. These areas are addressed in other parts of this cost study, and are summarized in **Appendix 6.**

INPUT-BASED APPROACH: METHODOLOGY

The methodology we followed in estimating the cost of delivering the curricula, related programs, and services mandated by State statute, as well as reasonable costs for operating schools and school districts, is summarized below. More detail is presented in **Appendix 1.1**.

1. **Creating and configuring prototype districts for the input-based approach.** We chose eight prototype enrollment sizes: 100, 200, 300, 400, 600, 1,100, 2,000, and 15,000. Because per-student costs change most rapidly at the smaller enrollment levels, we chose more prototypes with smaller enrollments. We analyzed information from 94 Kansas school districts with actual enrollments near those eight prototype sizes to determine the number of schools, grade spans, and students in each grade, and modeled our eight prototype districts based on the most common configurations in those comparison districts. The 94 comparison districts are listed in **Appendix 7.**

2. **Determining the types of staff to allocate to our eight prototype school districts.** This was based on our reviews of staffing standards set by independent bodies, the types of positions our comparison districts actually had, and a survey we conducted of officials in 80 school districts. Because the focus of the input-based approach was on districts' core educational missions, we excluded positions that related to students' health or social welfare or that otherwise did not appear to be essential or directly related to educating students and running the district. To determine whether we needed to provide special staffing to deal with statutory requirements for health assessments we contacted Department of Education officials who told us that many districts contract for those services, use teachers to provide them (as allowed by law), or borrow resources such as audiologists from Special Education programs. We determined that those costs could be captured in our allocation of non-salary expenditures as described in item #6. (The costs related to special needs programs, Vocational Education, transportation, and food service are covered under other parts of the cost study.)

3. **Determining the number of regular education teaching staff to allocate to our eight prototype districts.** Teacher costs represent about half of districts' total expenditures, and it takes more teachers to achieve smaller class sizes, so we knew that different decisions about average class sizes for our prototype districts would result in significantly different per-student costs. Staffing standards, allocation plans, other state studies, and educational literature we reviewed suggested maximum class sizes ranging from 15-35. Some suggested the same maximum class sizes for all grades, and some suggested smaller class sizes in the earlier grades.

   Because there's no required or agreed-upon class-size standard, and to help demonstrate the cost impact of using different average class sizes, we selected 3 average class-size models to use in our input-based approach:
   - an average class size of 20 students
   - an average class size of 25 students
   - an average class size of 18 students in grades K-3, and 23 students in grades 4 and above

   We applied the average class size for each model uniformly to all prototype districts except the 100- and 200-enrollment sizes. For those two prototypes, we adjusted the numbers of teachers at both the elementary and secondary levels to account for their very small numbers of students, and to provide the minimum number of teachers needed for the diversity of courses required by State statute. (This information is shown in **Appendix 8**.)

   Figure 1.1-2 shows how the number of regular education teachers we allocated to our prototype districts varies under each class size model, and compares it to the actual median number of teachers for the 94 similarly sized comparison districts we used in the cost study. All three class size models allocate fewer teachers than districts currently have, likely because their comparison districts' average class sizes were smaller than the model sizes we used. The 2,000- and 15,000-enrollment prototype districts are being allocated about the same number of regular education teachers under the first model as their comparison districts actually had. That's because those comparison districts likely had average class sizes of about 20 students per class.

Figure 1.1-2
Number of Regular Education Teachers Allocated Under the 3 Different Class-Size Models Used in the Input-Based Approach

	2004-2005 Actual (a)	Average Class-Size Models		
		20 Students/ Class	25 Students/ Class	18 Students/Class in K-3; 23 in 4-12
Prototype 100				
# Teachers	**13.6**	**10**	**10**	**10**
Pupil-Teacher Ratio (b)	7.4	10	10	10
Prototype 200				
# Teachers	**18.6**	**14.5**	**14.5**	**14.5**
Pupil-Teacher Ratio	10.7	13.8	13.8	13.8
Prototype 300				
# Teachers	**24.1**	**17.5**	**14.5**	**16.2**
Pupil-Teacher Ratio	12.4	17.2	20.7	18.5
Prototype 400				
# Teachers	**31.8**	**22.9**	**18.6**	**21.2**
Pupil-Teacher Ratio	12.6	17.5	21.5	18.9
Prototype 600				
# Teachers	**44.7**	**34.1**	**27.4**	**31.5**
Pupil-Teacher Ratio	13.4	17.6	21.9	19.1
Prototype 1,100				
# Teachers	**77.4**	**62.3**	**49.9**	**58.1**
Pupil-Teacher Ratio	14.2	17.7	22.0	18.9
Prototype 2,000				
# Teachers	**118.6**	**113.5**	**90.8**	**105.7**
Pupil-Teacher Ratio	16.9	17.6	22.0	18.9
Prototype 15,000				
# Teachers	**879.1**	**849.3**	**679.4**	**796.2**
Pupil-Teacher Ratio	17.1	17.7	22.1	18.8

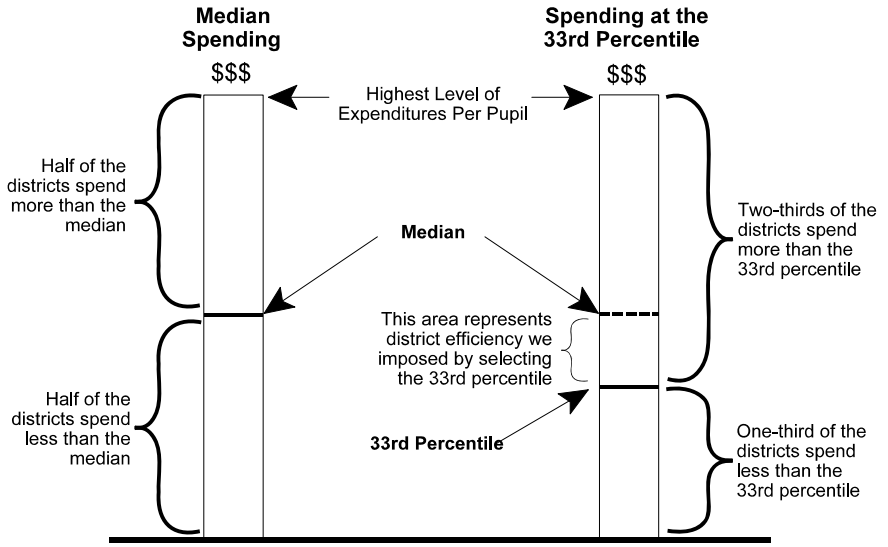
(a) The number of teachers shown is the median for each prototype district's group of comparison districts.
(b) Pupil-teacher ratio is a straight calculation dividing enrollment by number of teachers. Class size is a similar calculation, but factors in the number of hours that teachers actually teach (excluding at least 40 minutes of planning time per day).

Source: LPA analysis of Department of Education data.

4. **Determining a reasonable number of other staff positions to allocate to our eight prototype districts.** Generally, we used accreditation standards for four positions: principal, assistant principal, library specialist, and counselor. For most other staff positions: within each prototype size we arrayed staffing levels for the comparison districts from high to low, and in each category selected the staffing level at the 33rd percentile. (The 33rd percentile means that 1/3rd of the comparison districts had that many of those staff positions or fewer, and 2/3rd had more.) Using the 33rd percentile rather than the 50th percentile (median) allowed us to select resource levels from districts that were operating at an above-average level of efficiency. (***Figure 1.1-3*** shows the relationship between the median and the 33rd percentile; **Appendix 9** shows the staff resources we allocated to our prototype districts for all

three class-model sizes.) We excluded positions for Operations and Maintenance staff because some districts hire their own staff, and some contract out for these positions. Instead, we used the 33rd percentile of the comparison districts' five-year average per student total spending (both salary and non-salary) for Operations and Maintenance.

Figure 1.1-3
How Spending at the 33rd Percentile Differs From Median Spending Levels



Median spending is the level at which exactly half the school districts spend more and half spend less. If costs are assigned at the median, it simply redistributes current costs among the districts. The 33rd percentile is the level at which 2/3 of the districts spend more and 1/3 spend less. Allowing spending at this level requires 2/3 of the districts to become more efficient. The difference between the median and the 33rd percentile can be large or small depending on how much variation exists in the numbers being arrayed.

Source: Developed by Legislative Post Audit staff

5. **Determining <u>average salary costs for the staff positions</u> we allocated to our eight prototype districts.** We used Statewide average salary information for teachers or other staff positions when it was available (excluding any supplemental pay for duties like coaching); average salaries being paid by districts in each prototype size range for superintendent, assistant superintendent, principal and assistant principal positions; and average salaries for various other positions that we obtained through a survey of about 90 districts. **Appendix 10** shows the salary figures we used for each position. We applied a uniform benefit rate based on a Statewide average to all positions (excluding the State-funded KPERS contribution).

6. **Determining a level of <u>non-salary resources</u> to allocate to our eight prototype districts.** For our 94 comparison districts, we used a five-year inflation adjusted average of their actual non-salary expenditures per student that were most likely to be associated with their non-salary regular educational or operational activities. (A discussion of the expenditure categories we used is shown in **Appendix 1.1**.) Within each prototype size, we arrayed non-salary expenditures per-student for the comparison districts from high to low, and in each category selected the expenditure level at the 33rd percentile. This step allowed us to select expenditures from districts that were operating at an <u>above-average</u> level of efficiency. It also lessened the impact of some of the "extracurricular" or other "non-basic" expenditures that we would have excluded if we had been able to separately and uniformly

identify them for all districts. (**Appendix 10** compares these non-salary expenditures for each prototype district and class-model size at the median level and 33rd percentile level.)

7. **Identifying total costs per student for regular education for each class-size model.** Because some salary information we gathered was for the 2004-05 school year and some historical spending levels we analyzed were from the 2003-04 school year, we brought all costs to a 2004-05 basis, and ran the input-based cost model using the 3 different class-size scenarios. Doing so allowed us to identify total cost per student for delivering the curricula, programs, and services mandated by State statute, plus reasonable and necessary costs for operating schools and school districts. Using the cost estimates for our eight prototype districts, we created a new "cost curve" that would allow us to identify estimated costs for each school district.

8. **Identifying enrollment weights for regular education for each class-size model.** Using the information on total costs per student for each prototype, we also were able to calculate a low-enrollment weight formula, as well as a correlation weighting formula.

COST STUDY: RESULTS FOR THE INPUT-BASED COST MODEL

The results of the input-based approach are summarized in the following sections. **Appendix 16** presents these results by district.

1. ESTIMATED BASE-LEVEL COSTS FOR REGULAR EDUCATION

Depending on the class-size model used, we estimated the base-level cost of providing what's mandated by State statute would range from $4,375 to $4,943 per student for 2005-06. That compares with the current Base State Aid Per Pupil of $4,257. ***Figure 1.1-4*** shows these amounts for each class-size model. As the figure shows, the average class-size model of 25 students would have a significantly lower base-level cost than the two other models.

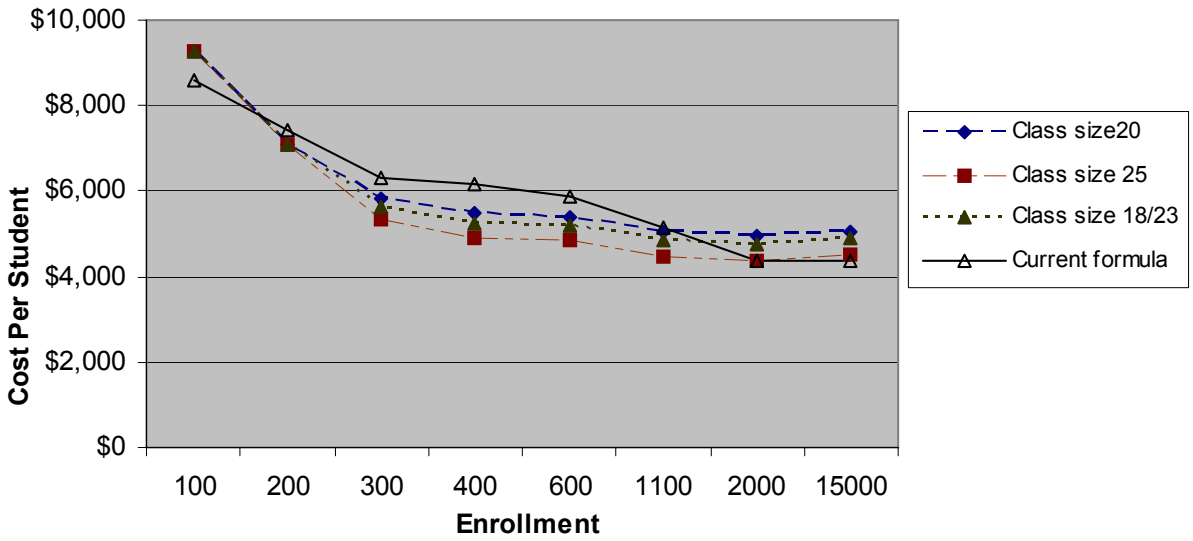
Figure 1.1-4
Comparison of Base Cost Per Student
INPUT-BASED ESTIMATES vs. CURRENT FUNDING FORMULA

Class-Size Models	Base-Level Cost Per Student INPUT-BASED ESTIMATE		(2005-06) Base State Aid Per Pupil CURRENT FORMULA	Difference Per Student
	Original LPA Estimate *(in 2004-05 dollars)*	Adjusted by LPA for Inflation *(in 2005-06 dollars)*		
20	$4,763	$4,943	$4,257	$686
18/23	$4,575	$4,748	$4,257	$491
25	$4,216	$4,375	$4,257	$118

Source: LPA input-based analysis.

We arrived at this estimate by plotting each prototype district's estimated costs for providing what's mandated by State statute on a cost curve. The base-level cost is the lowest point on that curve. For all three class-size models, this low point occurred at the 2,000 enrollment level. ***Figure 1.1-5*** shows the cost curves for our three class-size models, compared with the equivalent costs using the current funding formula. **Appendix 11** shows the actual dollar amounts for this figure.

Figure 1.1-5
Comparing Three Input-Based Class-Size Models to Equivalent Costs Using Current Funding Formula



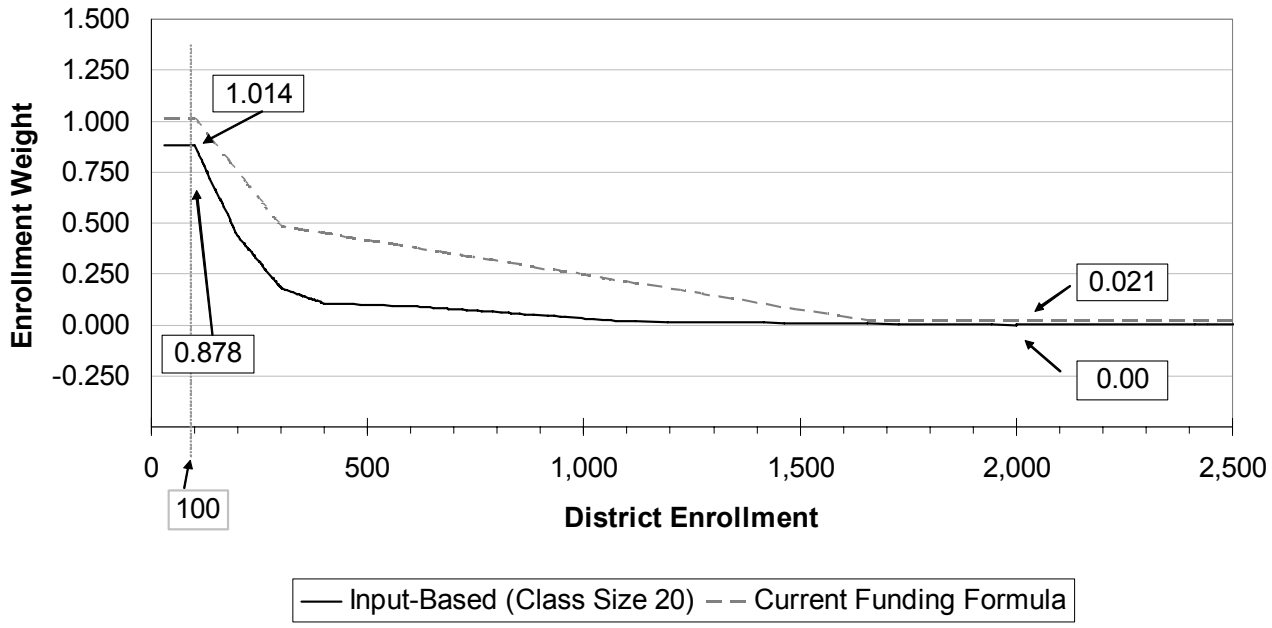
Source: Input-based approach, and current State funding formula.

2. ESTIMATED ENROLLMENT WEIGHTS

The enrollment weights estimated in the input model generally are lower than those in the current formula, especially in the smaller districts. Education research has shown that the size of a district can significantly affect the cost of educating students. Specifically, smaller districts tend to cost more because they tend to have smaller class sizes (and therefore relatively more teachers), and have fewer students over whom they can spread their fixed administrative costs.

Using the cost curve shown above, we calculated the amount above the base-level that it would cost each district to educate its students—also known as enrollment weighting. Those weights vary for each district depending on its enrollment level, and are different under each class-size model we used. ***Figure I.1-6*** shows the low-enrollment and high-enrollment (also called "correlation") weights using an average class size of 20 students, and compares them to the current funding formula.

Figure 1.1-6
Comparison of Enrollment Weights
Input-Based Estimates (Class Size 20) vs. Current Funding Formula



Source: Input-based approach and current funding formula

As the figure shows, the low-enrollment weights estimated using the input-based approach bottom out at an enrollment level of about 2,000, and are consistently lower than the weights in the current formula. For example, districts with 100 or fewer students would receive an additional weighting of 0.878—meaning it would cost them about 88% more than the base-level cost to deliver what's mandated by State statute for regular education. This is significantly less that the current weighting of 1.014 in the school finance formula.

For districts with an enrollment level above 2,000, the input-based approach has a graduated correlation weighting that goes from 0 at the 2,000 enrollment level to about 2% at the 15,000 enrollment level, at which point it levels off. The current funding formula applies a constant correlation factor of about 2%, starting at an enrollment of 1,662.

3. IMPACT OF VARIOUS ASSUMPTIONS ON ALLOCATED POSITIONS AND COSTS

For the cost categories we used, the estimated costs for our eight prototype districts of delivering what's mandated by State statute were anywhere from about $300 per student to $2,100 per student less than our 94 comparison districts' estimated expenditures for 2004-05. (This information is shown on **Appendix 10.**) Those amounts

per student also vary depending on the class-size model used. Some of the impacts of the assumptions and methodology decisions we made– which resulted in these lower costs– are as follows:

- We allocated fewer instructional staff. Using different average class-size models significantly affected the number of instructional staff positions we allocated to deliver what's mandated by statute, versus the number the comparison districts actually had. For example, for our prototype district with 15,000 students, assuming an average class size of 20 students resulted in an allocation of about 6% fewer instructional staff than the comparison districts actually had, while a class size of 25 students resulted in an allocation of about 24% fewer instructional staff.

- We allocated fewer non-instructional positions. For example, under both the 20 and the 25 class-size models for the 15,000 prototype district, we allocated about 21% fewer non-instructional positions than the comparison districts had. That's partly because we allocated most of these positions at the 33rd percentile.

- We allocated non-salary expenditures at the 33rd percentile. An example of the results: the non-salary expenditures we allocated were between 2% and 12% lower than the median level of historical expenditures. The average was about 9% across all prototypes, regardless of class size.

1.2: ESTIMATING BASE-LEVEL COSTS FOR REGULAR EDUCATION USING AN OUTCOMES-BASED APPROACH

This outcomes-based approach was designed to identify the estimated costs of meeting the performance outcomes standards adopted by the State Board of Education. For districts that are not meeting these outcomes, this approach will identify a level of spending that should give them the opportunity to achieve those outcomes, provided they spend their money effectively. For districts that are exceeding outcomes, the approach will identify a level of spending that would be sufficient to allow them to meet outcomes.

BACKGROUND: PERFORMANCE OUTCOMES ADOPTED BY THE STATE BOARD OF EDUCATION

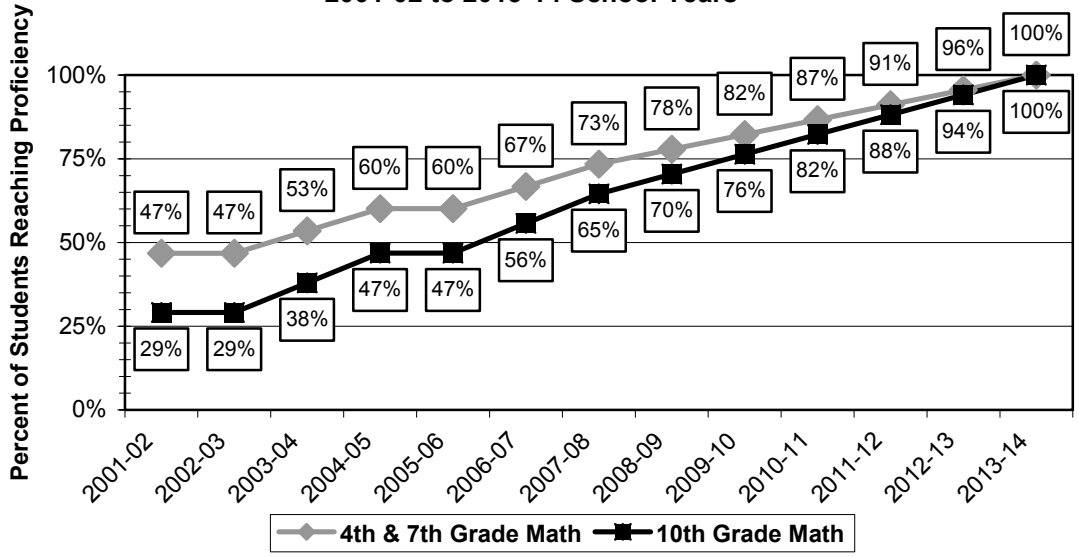
Development of an accountability-based accreditation system for schools in Kansas dates back to 1988. The first schools were accredited under the Quality Performance Accreditation (QPA) system in 1995. Curriculum standards, Statewide assessments, and performance levels developed by the State Board of Education have been incorporated into QPA since 1996.

In 2001, the federal government reauthorized the Elementary and Secondary Education Act more commonly known as the "No Child Left Behind" (NCLB). NCLB requires coordination of the existing State accreditation system with the new federal standards. Among the most prominent of those standards is the requirement that all students reach proficiency on Statewide assessments in math and reading by the 2013-14 school year. In December 2002, the State Board of Education approved revised standards for QPA to meet the requirements of NCLB. These new standards went into effect July 1, 2005. The revised QPA system includes the following performance standards:

- **Graduation Rate** – 75% in all high schools or improvement over the previous year
- **Attendance Rate** – 90% in all elementary and middle schools
- **Participation Rate on Statewide Assessments** – 95% for total student population and for each student subgroup (i.e., Special Education, bilingual)
- **Statewide Assessments** – This standard measures the percent of all students who reach the "proficiency" level on the Statewide reading and math tests. The standards increase each year. In the 2013-14 school year, the standard is to have 100% of all students reach proficiency. ***Figure 1.2-1*** and ***Figure 1.2-2*** show the standards for math in reading from 2001-02 to 2013-14.

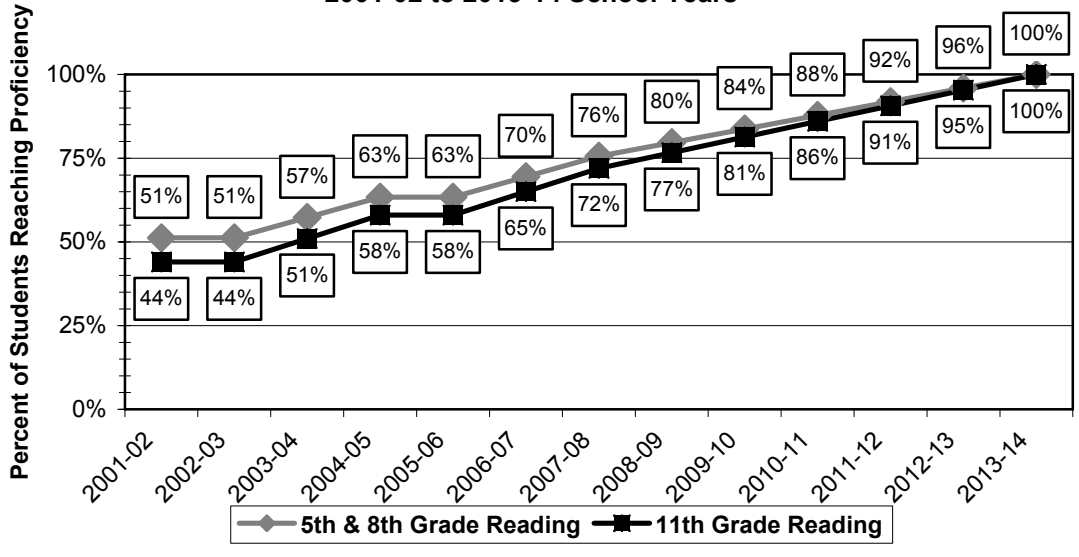
  A Statewide assessment for writing will be included starting in 2007 and assessments in history/government and science will be included in 2008. The Board will set performance targets for these exams. Because they aren't covered by NCLB, the State Board of Education has indicated performance targets won't go all the way to 100%.

Figure 1.2-1
State Performance Outcome Standards: MATH
2001-02 to 2013-14 School Years



Source: Department of Education, Quality Performance Accreditation (QPA) Manual

Figure 1.2-2
State Performance Outcome Standards: READING
2001-02 to 2013-14 School Years



Source: Department of Education, Quality Performance Accreditation (QPA) Manual

BACKGROUND: SELECTING AN OUTCOMES-BASED APPROACH

To find out how education cost studies estimate the cost of achieving educational outcomes, we reviewed more than 30 studies examining the cost of education in a number of states. Out of this literature, we found four basic approaches used in education research to estimate education costs:

- **Professional Judgment** – Teams of education professionals and other interested parties are convened to identify the inputs (staff, supplies, and equipment) necessary to provide students the opportunity to achieve the desired outcomes. The researchers then determine the cost of those inputs to estimate the cost of providing this type of education.

- **Evidence-Based** – Education benchmarks (such as prescribed student-teacher ratios) are used to identify the inputs necessary to provide students the opportunity to achieve the desired outcomes. As with "professional judgment," the researchers then determine the cost of those inputs to estimate the cost of providing this type of education.

- **Successful Schools** – Researchers identify a set of schools or school districts that already meet a set of outcome standards. These districts' spending is used to estimate what it would cost other districts to achieve the desired outcomes.

- **Cost Function Analysis** – Researchers use statistical tests to understand the relationships between districts' historical costs and a variety of factors, such as district size, salary costs, the number of students with special needs, district efficiency, and student performance. The relationships are incorporated into a model that is used to estimate what it would cost each district to achieve the desired outcomes.

To better understand their relative strengths and weaknesses, we reviewed critiques of the four approaches, and consulted with a number of representatives of Kansas school districts, academic researchers, and staff from the National Conference of State Legislators (NCSL).

Based on our background research, we selected the cost function approach because we felt it was the best method for estimating districts' costs to meet the State's performance standards. ***Figure 1.2-3*** summarizes the key advantages and disadvantages of using the cost function approach.

Among others, Thomas Downes, a Tufts University economist who studies education finance, has compared the advantages and disadvantages of the four cost study approaches. In a 2004 paper on cost studies, Downes concluded that, despite its drawbacks, "the cost function approach is the most likely to give accurate estimates of the within-state variation in the spending needed to attain the state's chosen standard, if the data are available and of a high quality."

Figure 1.2-3
Summary of the Significant Advantages and Disadvantage of Using the Cost Function Approach To Estimate Education Costs

Advantages	Disadvantages
• The approach is data-driven, using historical expenditures to provide reasonable estimates of what it should cost to meet the outcome measures adopted by the State Board of Education. • It accounts for the increased costs of educating disadvantaged and special-needs students in a district. • The approach takes into account differences in districts' input costs—primarily differences in teacher salaries. • The approach attempts to identify inefficient spending and exclude it from the estimate of what it should cost to meet the performance standards.	• The approach requires complex statistical techniques, which can make it more difficult to understand the process than with the other approaches. • Because the cost function analysis relies entirely on historical data, the available data must be complete and of high-quality. • The cost function analysis estimates how much it should cost to meet performance standards, but provides no information on what to spend money on. • Although the approach attempts to exclude inefficient spending from its cost estimates, the fact that efficiency can't be measured directly makes this difficult. As a result, indirect measures of efficiency ("efficiency-related" variables) are selected based on theory and previous research, but there is no consensus on which measures are most closely related to efficiency.

BACKGROUND: SELECTING CONSULTANTS

A cost function analysis requires the use of very sophisticated statistical techniques and an extensive knowledge of the factors that affect educational costs. Because we lacked that expertise in-house, we contracted with Drs. William Duncombe and John Yinger from the Maxwell School's Center for Public Research at Syracuse University.

These consultants helped pioneer the use of the cost function analysis in school finance research, and are among a handful of researchers nationwide that use this approach. They were selected based on our review of the reports they've published, their availability, and their familiarity with school finance in Kansas—Dr. Duncombe published an evaluation of the State's school funding system in 1998 (updated in 2004).

OUTCOMES-BASED APPROACH: METHODOLOGY

As we noted earlier, under the cost function approach researchers use statistical tests to understand the relationships between certain factors and districts' historical spending per student. Here are the factors included in this type of analysis:

- district size
- student characteristics (for example, student poverty)
- teacher salaries
- student performance
- district efficiency

Several steps are involved in using the cost function approach to estimate the cost of meeting performance outcome standards. We've briefly summarized the steps below, but discuss them in detail in **Appendix 1.2**. For a technical discussion of the statistical techniques used in the cost function analysis, see **Appendix 17**, pages C-44 to C-52.

1. **Identifying, collecting, and preparing the data for the statistical analysis.** We collected and prepared five years of data (1999-00 to 2003-04) that were available from the Department of Education on all Kansas school districts. The data we collected included district expenditures, enrollments, student characteristics, teacher salaries, student performance, and indirect measures of district efficiency.

2. **Analyzing the data to build a cost model.** The consultants used sophisticated statistical regression techniques to analyze the data and examine the relationships between the five factors listed earlier and historical spending. Essentially, the cost function approach uses statistics to isolate each factor and see how it affects costs. For example, all other things being equal, how much of a spending increase is associated with an increase in the percent of students in poverty? All the relationships are compiled in a mathematical equation called a "cost model."

3. **Using the cost model to estimate the base-level cost of meeting performance outcome standards, and developing student weights for enrollment, poverty, and bilingual students.** To estimate the base-level cost per student, the consultants used the cost model to calculate the cost of meeting the State outcome standards in a hypothetical district that is optimally-sized, pays average teacher salaries, has no students with special needs, and operates with above-average efficiency. Next, the consultants used the cost model to estimate how much more than the base-level it would cost to educate students in smaller districts, students who are in poverty, and bilingual students. These differences in costs were used to develop a set of student weights.

   Because the original spending data used in building the cost model included federal sources of funding, the estimated base-level costs and student weights include costs that would be paid for with federal funds. To put these figures on a comparable basis with the input-based approach, and to better reflect the costs the State might fund, we removed federal funding from the base-level costs and student weights. We had to assume that the relationship of State and federal funding would stay relatively constant.

   Finally, we didn't try to compute the estimated cost of meeting the "safe harbor" provisions in the Board of Education's QPA standards, because that would have required us to produce a different base-level cost for some districts, instead of a single base-level cost that could be applied Statewide. (Under the safe harbor provision of the QPA standards, districts that don't meet the performance outcomes standards outright can still make adequate yearly progress if they make enough improvement from the previous year.)

Throughout the process, we maintained regular contact with the lead consultant and held several face-to-face meetings. During each step of the process we reviewed the methods and assumptions that were used in the analysis and made key decisions.

COST STUDY: RESULTS OF THE OUTCOMES-BASED COST MODEL

The cost function analysis can be used to estimate the cost of meeting performance outcome standards in different districts, taking into account a variety of factors including the size of the district and the special needs of some of its students. The results of the cost function analysis are as follows (see **Appendix 16** for results by district):

1. ESTIMATED BASE-LEVEL COST OF MEETING OUTCOMES

The estimated base-level cost of meeting the 2005-06 performance outcome standards set by the Board of Education is $4,167 per student. That amount is $90 per student less than the current Base State Aid Per Pupil of $4,257. The consultants' estimate of the base-level cost of meeting the standards was $4,024 per student. In order to use that estimate as a basis for what the State might fund, however, we made several adjustments:

- **Remove federal sources of funding.** The cost model was built using historical spending data that included federal sources of funding because those expenditures likely contributed to student outcomes. As a result, however, the consultants' estimate of base-level costs included costs that would be paid for with those federal funds. We reduced the estimated base-level costs to $3,899 per student, which better reflects the costs the State might fund. We describe how we removed the federal funds in detail in **Appendix 1.2**.

- **Adjust for inflation.** The consultants' original estimate and our estimate (adjusted to remove federal funding) of the base-level cost of meeting standards were based on 2003-04 dollars. We had to increase the estimated base-level costs to account for inflation between the 2003-04 school year and the 2005-06 and 2006-07 school years. After adjusting for inflation, our estimate of the base-level cost of meeting standards in 2005-06 is $4,167 per student.

Figure 1.2-4 compares our estimated base-level cost per regular education student of meeting the performance outcome standards with the Base State Aid Per Pupil in the current funding formula.

Figure 1.2-4
Comparison of Base Cost Per Student
COST FUNCTION ESTIMATES vs. CURRENT FUNDING FORMULA
2005-06 and 2006-07 School Years

School Year	Base Cost Per Student ESTIMATED WITH COST FUNCTION			Base State Aid Per Pupil CURRENT FORMULA	Difference Per Student
	Original Estimate by Consultants	Adjusted by LPA to Remove Federal Funds	Adjusted by LPA for Inflation		
2005-06	$4,024	$3,899	$4,167	$4,257	($90)
2006-07	$4,346	$4,221	$4,659	$4,257	$402

Source: LPA analysis of Duncombe and Yinger cost estimates.

As the figure shows, the estimated base-level cost of meeting the standards increases in 2006-07 to $4,659, which is $402 per student more than the current Base State Aid Per Pupil. Our estimate for 2006-07 increases in part because of inflation, but also because the standards are higher in 2006-07. For example, between 2005-06 and 2006-07, the standard for 10th grade math increases from 47% proficiency to 56%, and the standard for 5th grade reading increases from 63% proficiency to 70%.

The estimated base-level cost of meeting standards will continue to increase significantly in future years, because the standards adopted by the Board increase each year until 2013-14 (when 100% of all students are required to reach proficiency on Statewide assessment tests).

In estimating the base-level cost, the cost function brings every district to a single performance standard. For districts that don't currently meet the performance standard, this base-level cost is likely (though not necessarily) more than their current spending. Conversely, for districts that currently exceed the performance standard, this base-level cost is likely to be less than their current spending.

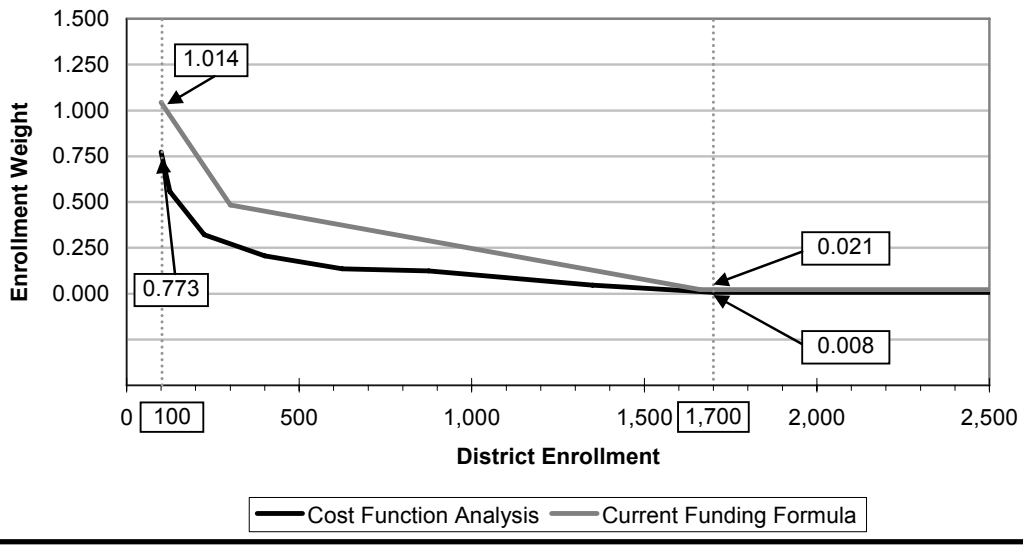
In either case, spending at this base-level doesn't guarantee a district will meet the performance standard (especially in the short-term for districts that currently fail to meet the standards). But it should give districts the opportunity to meet the performance standards, if the money is used efficiently and effectively.

2. ESTIMATED ENROLLMENT WEIGHTS

The enrollment weights estimated with the cost function are lower than those in the current formula, especially for very small districts. Education research has shown that a district's size can significantly affect the cost of educating students. Specifically, smaller districts tend to cost more because they have smaller class sizes (and therefore relatively more teachers), and fewer students over whom they can spread their fixed administrative costs.

We used the cost function to estimate the additional cost of educating students in districts of different sizes—also known as enrollment weights. ***Figure 1.2-5*** compares the enrollment weights estimated using the cost function to the weights in the current funding formula.

Figure 1.2-5
Comparison of Enrollment Weights
COST FUNCTION ESTIMATES vs. CURRENT FUNDING FORMULA



As the figure shows, the enrollment weights estimated using the cost function bottom out at an enrollment level of about 1,700, and are consistently lower than the weights in the current

formula for smaller districts. The cost function estimates that districts with 100 or fewer students should receive an additional weighting of .773—meaning it would cost about 77% more than the base-level cost for students in these districts to have the opportunity to meet the desired education outcomes. This is significantly less than the weighting of 1.014 in the current formula.

For districts with an enrollment level above 1,700, the cost function enrollment weight (.008) is one-third as much as the correlation weight in the current formula (.021).

3. ESTIMATED POVERTY AND BILINGUAL WEIGHTS

The estimated poverty weight is .484 per free-lunch student in most school districts, and .726 per free-lunch student in high-poverty, inner-city school districts. The estimated bilingual weight is .100 per bilingual student. Student poverty and limited English proficiency are two factors that negatively affect student performance. These two factors and their effect on education costs are recognized through the at-risk and bilingual weights in the current funding formula.

The consultants used the cost function to estimate districts' additional costs (above base-level costs) of having poverty and bilingual students reach the same performance levels that other students were achieving (whether or not the other students were meeting standards), and to develop poverty and bilingual weights in each district. We had to take two additional steps to turn their estimated district-level poverty and bilingual weights into estimated Statewide weights:

- **Estimate a separate poverty weight for high-poverty, inner-city school districts.** Urban poverty is associated with a variety of more serious social problems, including drugs and violent crime. Because our consultants cited evidence suggesting inner-city poverty has more of an effect on costs than rural poverty, we included an additional measure of inner-city poverty in our cost model—the percent of students qualifying for free lunch multiplied by the student density of a district. To estimate a Statewide inner-city poverty weight, we averaged the district-level weights estimated by the consultants for large and mid-sized cities (as defined by the U.S. Census) with above-average poverty. There were four of these districts—Kansas City, Kansas City-Turner, Topeka, and Wichita.

- **Remove federal sources of funding.** As was the case with base-level costs, the poverty and bilingual weights estimated by the consultants also included costs that could be paid for with those federal funds. Therefore, we had to reduce these weights to better reflect the costs the State might fund.

Figure 1.2-6 shows our estimated poverty and bilingual weights and the weights in the current funding formula.

Figure 1.2-6
Comparison of Poverty and Bilingual Weights
COST FUNCTION ESTIMATES vs. CURRENT FUNDING FORMULA

Weight	Weight ESTIMATED WITH COST FUNCTION		Weight CURRENT FUNDING FORMULA	Difference
	Original Estimated Weight	Adjusted by LPA to Remove Federal Funds		
Poverty				
Regular	0.703	0.484	0.193	(0.291)
High-Poverty, Inner City	1.054	0.726	---	(0.726)
Bilingual	0.139	0.100	0.395	---(a)

(a) Whereas the bilingual weight in the current formula uses bilingual FTE (which is based on contact hours), the weight from the cost function is based on bilingual headcount, making these weights uncomparable.

Source: LPA analysis of Duncombe and Yinger cost estimates.

As the figure shows, the estimated poverty weight for most districts is .484. That weight implies that it would cost almost 50% more than the estimated base-level costs for students in poverty to achieve the same performance levels that other students are achieving. This is significantly higher than the at-risk weight in the current formula (.193).

In the four inner-city districts with high poverty (Kansas City, Kansas City-Turner, Topeka, and Wichita), the estimated poverty weight is .726, which recognizes that the cost of educating students in these types of districts is even greater. There is no separate urban-poverty weight in the current funding formula.

***Figure I.2-6* also shows that the estimated bilingual weight is .100.** This is significantly lower than the current bilingual weight of .395, but it's important to note that these two weights aren't really comparable for the following reasons:

- The bilingual weight estimated by the **cost function** is based on bilingual headcount (the number students in a district who have limited English proficiency)
- The bilingual weight used in the **current funding formula** is based on bilingual student FTE, which is calculated on the number of contact hours bilingual students spend with bilingual-endorsed teachers (see Section 2.2 of this report for additional information).

Bilingual FTE, as it is calculated in the current funding formula, is a very poor measure of the number of bilingual students in a district. That's because many bilingual services are being provided to bilingual students in settings or districts where there are no "bilingual-endorsed" teachers (the only contact hours that are counted for funding purposes). In Wichita, for example, only 2,923.5 bilingual FTE students were counted for funding purposes in 2004-05, but Wichita reported serving 5,342 bilingual students that year on a headcount basis.

The bilingual weight estimated by the cost function may be low for a number of reasons. Among them:

- there's a strong correlation between bilingual and free-lunch students, so the cost function analysis may have assigned part of the additional costs for bilingual students to at-risk students. (In 2003-04, Department data show that 73% of the students who took the Statewide assessment tests were reported as being both bilingual and eligible for free lunches.) Department guidelines for 2006-07 have clarified that students who are bilingual can be served with at-risk moneys.

- the headcount of bilingual students that districts report may not be completely accurate. As explained in Section 2.2, some districts may not be reporting all their bilingual students, and others may not be reporting them uniformly.

Nonetheless, using bilingual headcount data provides the best available measure to use in computing a bilingual weight. If funding were based on bilingual headcounts, those data would be audited and likely would be reported more accurately over time.

4. VARIATIONS IN COSTS

District size, student characteristics, teacher salaries, and district efficiency appear to explain a lot of the variation in district spending per student. On average, school districts spent $6,887 per student in 2003-04. However, there was a tremendous amount of variation. Spending ranged from $4,915 to $12,684. The cost function analysis found that the following contributed to increased per-student spending:

- smaller districts spent more than larger districts
- districts with more students in poverty or more bilingual students spent more
- districts that paid higher teacher salaries spent more

When we controlled for size, student characteristics, salary levels, and student performance in the cost model, there still were large variations in spending. We used the cost model to predict what all districts would have spent per student in 2003-04 to achieve the same outcomes they actually achieved if they all operated at an average level of efficiency. When we compared these estimates to what districts actually spent per student, we found 20 districts that spent at least 20% more than the cost model predicted (controlling for the factors noted above), and another nine districts that spent at least 20% less than predicted.

To get a better understanding of why actual spending in these 29 districts was so different from what the cost model predicted, we examined information on district staffing from the Department of Education. ***Figure 1.2-7*** summarizes what we found.

Figure 1.2-7
Analysis of Staffing Levels in Districts That Spent Significantly More or Less Than Predicted
2003-04 School Year

Staff per 100 Students	How actual district spending in 2003-04 compared to what the cost function predicted:	
	Spent at least 20% more than the cost function predicted ***(20 districts)***	Spent at least 20% less than the cost function predicted ***(9 districts)***
Certified Staff per 100 Students (Statewide average = 7.2)	19 districts had more staff than average. *RANGE: 7.9 – 22.0*	6 districts had less staff than average. *RANGE: 5.7 – 7.0*
Certified Administrators per 100 Students (Statewide average = 0.5)	19 districts had more staff than average. *RANGE: 0.6 – 2.6*	3 districts had less staff than average. *RANGE: 0.3 – 0.4*
Non-Certified Staff per 100 Students (Statewide average = 4.6)	18 districts had more staff than average. *RANGE: 4.7 – 16.1*	6 districts had less staff than average. *RANGE: 3.2 – 4.4*
Total Staff per 100 Students (Statewide average = 12.3)	19 districts had more staff than average. *RANGE: 13.6 – 35.9*	6 districts had less staff than average. *RANGE: 9.6 – 11.9*

Source: LPA analysis of cost function results and Department of Education data.

With a few exceptions, districts that spent significantly more than the cost model predicted they'd spend were more heavily staffed than the average district in the State. Likewise, districts that spent significantly less than predicted tended to have fewer staff. These results suggest at least some of the variation in spending can be attributed to relatively efficient and inefficient staffing levels.

5. OTHER FINDINGS

We found a strong association between the amounts districts spend and the outcomes they achieve. In the cost function results, a 1.0% increase in district performance outcomes was associated with a 0.83% increase in spending—almost a one-to-one relationship. This means that, all other things being equal, districts that spent more had better student performance. The results were statistically significant beyond the 0.01 level, which means we can be more than 99% confident there is a relationship between spending and outcomes.

1.3: What Are the Additional Costs of Programs and Related Services for Special Education Students?

BACKGROUND: SPECIAL EDUCATION PROGRAM REQUIREMENTS

State law and the federal Individuals with Disabilities Education Act (IDEA) require each school district to provide Special Education and related services for all students in the district who need them, and to educate those students with regular education students to the maximum extent appropriate. Districts must provide services that address all the Special Education and related service needs identified in each exceptional child's annual individual education program (IEP).

Among other things, State laws and regulations also require districts to provide gifted services for students with superior academic potential, to initiate transition services for Special Education students when they reach age 14, to provide Special Education and related services to students who attend private schools, if requested, and to transport students to and from Special Education services if their IEP calls for it. (These transportation costs are separate from regular transportation costs.)

BACKGROUND: NUMBER OF SPECIAL EDUCATION STUDENTS SERVED

During the 2004-05 school year, almost 80,000 students received Special Education services, which was about 18% of the 455,000 public elementary and secondary students in Kansas. Those students accounted for nearly 26,000 FTE students, as shown in ***Figure 1.3-1.***

Figure 1.3-1
Special Education Students, by Headcount and FTE
2004-05 School Year

	Headcount		Full-Time Equivalent (FTE)	
Type of Exceptionality	**Enrollment**	**%**	**Enrollment**	**%**
Learning Disability	24,354	30.2%	8,787	34.0%
Gifted	15,649	19.4%	1,234	4.8%
Speech/Language	13,087	16.3%	1,142	4.4%
Other Health Impairment	7,236	9.0%	3,155	12.2%
Developmentally Delayed	5,386	6.7%	2,317	9.0%
Mental Retardation	5,020	6.2%	3,584	13.9%
Emotional Disturbance	4,108	5.1%	2,279	8.8%
Early Childhood Disability	2,421	3.0%	1,169	4.5%
Autism	1,379	1.7%	1,012	3.9%
Hearing Impairment	532	0.7%	300	1.2%
Severe Multiple Disabilities	496	0.6%	445	1.7%
Orthopedic Impairment	481	0.6%	174	0.7%
Traumatic Brain Injury	218	0.3%	122	0.5%
Visual Impairment	193	0.2%	71	0.3%
Deaf-Blindness	26	0.0%	18	0.1%
Total	**79,979 (a)**	**100.0%**	**25,809**	**100.0%**

(a) This is the # of students receiving Special Education services. Enrollments in individual categories add to 80,586 because 607 gifted students have one of the other exceptionalities.
Source: Department of Education data.

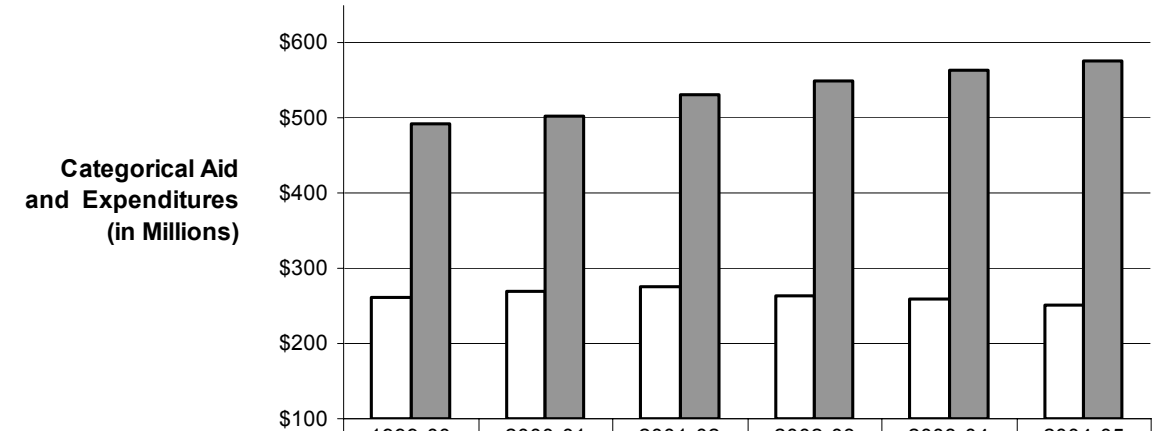
As ***Figure 1.3-1*** shows, students in some categories—such as gifted and speech and language—account for a significant number of headcount students but for a much smaller number of FTE students in Special Education. These students generally receive only a few hours of service per week. By contrast, students with severe multiple disabilities account for about the same number of headcount and FTE students. These students spend most of their day receiving Special Education services. In general, any student who receives six hours of Special Education services in a day equals one FTE Special Education student.

BACKGROUND: SPECIAL EDUCATION PROGRAM EXPENDITURES

During the 2004-05 school year, 30 school districts (primarily the larger ones) provided services to Special Education students with their own staff, while 270 districts pooled resources to contract with an interlocal or cooperative to provide those services. A cooperative is administered by a member school district, while interlocals are managed by separate, independent entities. In all, 70 districts, cooperatives, and interlocals provided Special Education services in Kansas. (In this section of this report, the term "district" refers to all three types of service providers.)

For 2004-05, these districts reported that they spent about $575 million providing Special Education and related services. Most of that money—93%—was spent on instruction, student support services (such as nursing and counseling), and student transportation. ***Figure 1.3-2*** summarizes total reported expenditures for the past six years.

Figure 1.3-2
Reported Special Education Expenditures and Categorical Aid Appropriated [(a)]
1999-00 to 2004-05



	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Categorical Aid Appropriated	$261.1	$270.1	$276.1	$263.7	$258.5	$251.0
Special Education Expenditures	$493.5	$503.1	$531.2	$548.9	$563.7	$575.6

(a) Categorical Aid Appropriations and Special Education Expenditures adjusted for inflation to 2004-05 dollars.

Source: Department of Education data inflated to 2004-05.

BACKGROUND: SPECIAL EDUCATION PROGRAM FUNDING AND DISTRIBUTION

Program Funding. State funding for Special Education is intended to cover "excess" costs—the amount that's not reimbursed from other sources, such as Medicaid, and that's over and above the average cost of regular education services. The process for determining "excess" costs has remained essentially the same since at least 1990, but wasn't defined in State law until the 2005 special legislative session. Simply stated, Special Education "excess" costs for the year being funded are computed as follows:

Actual reported costs from the previous year
+ estimated increases in Special Education teachers and salaries
= Estimated costs for the current year
– reimbursed costs (federal aid, Medicaid, SRS contribution)
– average operating costs per-student for regular education multiplied by FTE students in Special Education
= Statewide "excess" costs of Special Education

The Legislature decides each year what percent of this Statewide "excess" cost to fund as categorical aid. Since 1990, that percentage has varied from 77% to 95%. School districts must provide any remaining funding, in what could be viewed as a local co-payment. For the first time, the 2005 Legislature set that percentage in statute; it was set at 89.3% for 2005-06, and 92.0% for every year thereafter. The amount of State categorical aid for Special Education also is shown on ***Figure 1.3-2.***

Distribution of State Aid. State funding isn't distributed to districts based on the number of Special Education students they have because of concerns that this funding mechanism would encourage over-identification of these students. Rather, State funding is distributed to districts primarily based on the number of Special Education teachers they employ.

By State law, categorical aid is used to reimburse districts for the following estimated costs first:

- transporting Special Education students and mileage reimbursements for teachers (80% of actual)
- maintenance of Special Education students not living at home (80% of actual, up to $600/year)
- students with "catastrophic" Special Education costs (75% of actual above $25,000)

For 2004-05, these reimbursements—about $46 million—represented about 18% of the total State categorical aid for Special Education. The remaining $205 million was distributed to districts on the basis of the FTE Special Education teachers they employed (a paraprofessional counts as .4 FTE teacher). The amount of categorical aid paid per FTE teacher was $18,770.

COST STUDY: METHODOLOGY FOR SPECIAL EDUCATION

The methodology we used for estimating the additional costs of Special Education can be summarized as follows (more detail is included in **Appendix 1.3**):

1. **Selecting a sample of districts to review:** We focused our review only on Special Education students under the supervision of the Department of Education. Because we didn't want to base our cost estimates on districts that historically had not been able to provide all needed services, we surveyed all Special Education providers to identify those that said they had recorded all identified needs in students' IEPs, and had provided all the services listed in those IEPs. From that list, we selected a sample of 19 districts (and the eight cooperatives or interlocals that served them) to review in-depth. Our sample included all sizes of districts, but was weighted more heavily to the districts with the greatest number of Special Education students. In all, these 19 districts accounted for 35% of the FTE students in Special Education, and about 35% of reported Special Education expenditures for 2004-05.

   We think it's reasonable to use the results from these sample districts to make Statewide projections regarding the additional costs of Special Education. Nonetheless, the reader should be aware our estimate assumes that districts that reported they had identified and provided all needed Special Education services would be fairly representative of what it would cost in districts that acknowledged they hadn't identified and provided all needed services.

2. **Identifying districts' direct costs of Special Education:** We asked our sample districts to provide data for 2003-04 and 2004-05 showing all expenditures they had reported from their Special Education Funds, as well as any additional, direct expenditures for Special Education they had made but not reported in these Funds. (For districts that used a cooperative or interlocal to provide their Special Education services, we allocated those service providers' expenditures back to their member districts based on the number of FTE students served.) We reviewed supporting documentation for a sample of expenditures on-site, and made a number of adjustments to the expenditures the districts had reported to us to arrive at direct costs, as shown in ***Figure 1.3-4***. We used these adjusted expenditures to compute a median direct cost for Special Education for the 19 districts in our sample, and to estimate a total Statewide direct cost for Special Education. Because both years we reviewed resulted in costs that were fairly similar, we are reporting only the results from the work for the 2004-05 school year.

3. **Identifying districts' "excess" or additional costs of Special Education:** To estimate the costs districts incur for Special Education above and beyond the cost of regular education, we computed the following and subtracted it from the direct costs of Special Education:
   a. a Statewide average for regular education instructional costs
   b. the percentage of Special Education FTE students who spend more than half of their time outside the regular education classroom

   As explained later, this approach is different from the one used under the current funding formula.

COST STUDY: RESULTS FOR SPECIAL EDUCATION

1. ESTIMATED ADDITIONAL COSTS

We estimated that the additional costs for Special Education for 2005-06 were about $419 million. State categorical aid would be 89.3% of that amount, or about $374 million. This estimate is about $92 million more than the $282.2 million the Legislature appropriated for this year. This information is summarized in ***Figure 1.3-3.***

Figure 1.3-3
Computing the Additional Estimated Costs for Special Education
2005-06 (amounts in millions)

Calculations:	LPA Estimate	Estimate under Current Formula	Difference
	2005-06	2005-06	
Estimated Direct Costs of Special Education (direct cost / student X # FTE students)	**$582.9**	**$605.2**	**($22.3)**
Less estimated federal aid	($100.1)	($100.1)	$0
Less estimated Medicaid reimbursements	($30.0)	($30.0)	$0
Less estimated SRS contribution	($1.5)	($1.5)	$0
Less costs/student for regular education	($32.3)	($157.5)	($125.2)
Estimated Additional / "Excess" Costs	**$419.0**	**$316.1**	**$102.9**
Estimated State Categorical Aid (89.3% of Additional / "Excess" Costs)	**$374.2**	**$282.2**	**$92.0**
Additional Amount Per FTE Student in Special Education	**$14,232**	**$10,736**	**$3,496**

Source: LPA analysis of Department of Education data.

The following sections describe the steps we took to arrive at these estimated costs:

a. For 2004-05, we determined that our 19 sample districts spent $196.3 million on direct expenditures for Special Education and related services. That number is $1 million less than our sample districts reported spending on Special Education in their Special Education Funds that year. In arriving at this figure, we made a series of adjustments based on our detailed expenditure reviews, as shown in ***Figure 1.3-4.***

Figure 1.3-4
Summary of Adjustments to 19 Sample Districts' Reported Special Education Expenditures
2004-05 School Year

Description	Amount
Expenditures reported in districts' Special Education Funds (does not include transfers)	$197,255,638
Special Education expenditures LPA allocated from interlocals and cooperatives to districts	$2,485,861
SUBTOTAL OF EXPENDITURES	$199,741,499
Adjustments to Expenditures	***Net Adjustments***
Additional direct expenditures not reported in the Special Education Funds (primarily for equipment, supplies, maintenance, legal fees, transportation, and repairs)	$598,784
Removed flow-through funds (i.e., pass-through monies for programs such as the Infant Toddler Program that briefly touch a school district's Special Education Fund, but aren't operated by the district)	($2,682,281)
Made accounting corrections (i.e., corrections to journal entries, payments from the wrong fund, and double reporting)	($702,126)
Removed indirect expenses that were not incurred because of the Special Education program (i.e., allocation of indirect expenses, such as a portion of a principal's or superintendent's salary)	($392,098)
Made salary adjustments (using the results of Department of Education audits, we made numerous salary adjustments to more accurately capture the amount of time staff with "split" duties actually spent on Special Education)	($142,773)
Removed expenditures not related to special education, or inappropriate (i.e., Parents as Teachers programs, gifts, donations, memorial donations)	($26,221)
Removed capital outlay and food service expenditures (i.e., construction costs, building improvements, and food service)	($100,913)
SUBTOTAL OF ADJUSTMENTS	($3,447,628)
Adjustments as a % of expenditures initially reported	1.7%
SAMPLE DISTRICTS' DIRECT EXPENDITURES FOR SPECIAL EDUCATION	**$196,293,871**

Source: LPA analysis of 19 sample districts' Special Education expenditures.

b. After making these adjustments, we determined the median direct cost per FTE student for providing Special Education and related services for our 19 sample districts was $21,363 in 2004-05. ***Figure 1.3-5*** summarizes these costs, by district. (Reasons for variations are discussed later in this section.)

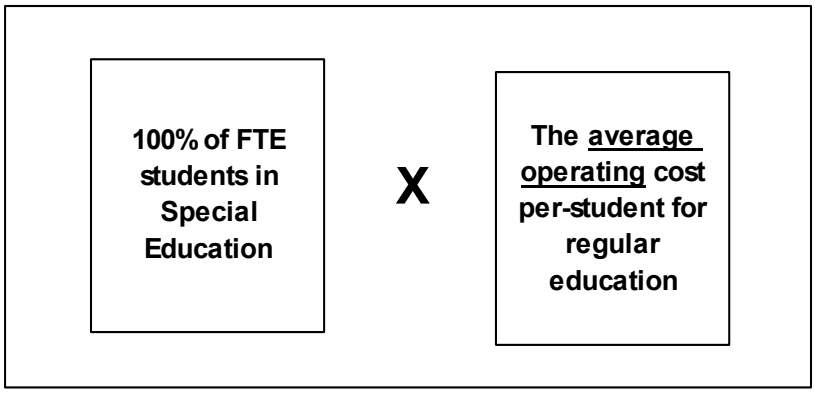
Figure 1.3-5
Direct Costs for Special Education
19 Sample Districts

District #, Name	2004-05 School Year		
	LPA Adjusted Cost	# of FTE Students	Direct Cost / FTE
310 Fairfield	$724,525	23	$32,187
362 Prairie View	$1,925,817	63	$30,749
512 Shawnee Mission	$35,298,170	1,200	$29,408
377 Atchison County	$1,232,083	45	$27,150
305 Salina	$9,056,932	365	$24,826
348 Baldwin	$1,412,856	61	$23,135
500 Kansas City	$24,458,877	1,078	$22,694
204 Bonner Springs	$2,633,266	116	$22,681
383 Manhattan	$6,126,920	271	$22,588
446 Independence–Median	**$2,458,083**	**115**	**$21,363**
205 Bluestem	$760,512	38	$20,205
259 Wichita	$75,663,162	3,864	$19,579
443 Dodge City	$6,640,505	342	$19,427
489 Hays	$4,981,902	260	$19,152
260 Derby	$7,050,726	375	$18,824
308 Hutchinson	$5,077,891	282	$17,973
270 Plainville	$636,741	36	$17,585
475 Junction City	$7,311,310	419	$17,450
465 Winfield	$2,843,593	193	$14,731
Sample Total	**$196,293,871**	**9,146**	**N/A**

Source: LPA analysis of sample school district fiscal data.

c. By adjusting for inflation, and multiplying this adjusted median direct cost figure by the estimated number of FTE students in Special Education in 2005-06, we estimated the direct cost of Special Education Statewide would be about $582.9 million. As ***Figure 1.3-3*** shows, that amount is about $22.3 million less than the estimate of $605.2 million under the current formula.

d. In estimating the additional costs of Special Education shown on *Figure 1.3-3*, we adjusted the current formula to reflect the fact that most regular education costs aren't reduced when students receive Special Education services. Under the current funding formula, in an attempt to fund only the "excess" cost of Special Education, the following is subtracted from the direct costs for Special Education before categorical aid is computed:



For 2005-06, the amount subtracted from direct Special Education costs using this formula was $157.5 million (26,293 FTE students X $5,992.) As we understand it, the amount subtracted is supposed to reflect the regular education costs that districts are able to avoid or save because these students are in Special Education.

In analyzing the current formula, however, we concluded the amount being subtracted from direct Special Education costs significantly overstates the amount of regular education costs districts realistically could be expected to avoid or save because these students are in Special Education. Both factors used in the above formula contribute to that overstatement, as explained below:

First, the formula uses 100% of the total number of FTE students in Special Education, even though many of those students spend all or most their time inside the regular education classroom. As part of this cost study, we analyzed Department of Education data that showed where Special Education services were provided in 2003-04 (the most current information available). Those results are shown in ***Figure 1.3-6.***

Figure 1.3-6 Location of Special Education Services in 2003-04 (Outside the Regular Education Classroom)	
FTE Special Education students who spent...	**Special Education FTE Enrollment (Total = 26,809)**
...**NONE of their time receiving Special Education services outside** the regular education classroom	**7,380 (28% of total)**
...**LESS THAN 2 HOURS / DAY receiving Special Education services outside** the regular education classroom	**5,625 (21% of total)**
...**AT LEAST HALF their time receiving Special Education services outside** the regular education classroom (avg. 3+ hrs/day)	**9,051 (34% of total)**
Source: LPA analysis of Department of Education data.	

As the figure shows, 28% of the FTE students in Special Education spent all of their day inside the regular education classroom that year. For example, a gifted student may spend an hour per week doing an advanced assignment in class, while a disabled student may have a paraprofessional, Special Education teacher, or nurse in the regular education classroom with them for part or all of the day. For these students, districts continue to incur all their regular education costs, and all their Special Education costs are over and above those regular education costs.

Even when Special Education students spend 1-2 hours per week or per day temporarily outside the regular classroom, it's highly unlikely that districts' regular education costs would be reduced. For example, the costs of a second grade classroom don't change if a speech and language student leaves that classroom for an hour each day.

Second, the formula uses the average operating cost per-student for regular education, even though the costs that potentially could be saved for students who do spend most their time outside the regular classroom probably are much less. The average operating cost for regular education includes all services districts provide—instruction, instructional support, student support services, school administration costs, district administration costs, transportation, operations and maintenance, and the like. Department of Education officials calculated this number to be $5,992 for 2005-06.

For those students who receive half or more of their Special Education services outside the regular education classroom, it seems reasonable to expect that districts may be able to reduce some instructional costs (i.e., have fewer regular education classes or instructors than they otherwise would need), especially when there are enough of these students in the same grade and the same building. But even in these cases, most Special Education services still are provided in the same school building. In other words, districts may be able to reduce some of their regular instructional costs because these students are in Special Education, but there would be no reduction in such things as operations and maintenance, district administration, librarians, principals, secretarial staff, and the like.

To address these two issues, we changed both factors in the formula in developing our estimate of the additional costs of Special Education. Those changes were:

- instead of using 100% of the Special Education FTE number (26,293), we used 34% (8,887).

- instead of using the average operating cost per student for regular education ($5,992), we used the average instructional cost per student ($3,637). An explanation of how this amount was calculated is presented in **Appendix 1.3.**

By making these adjustments, we subtracted only $32.3 million as a reasonable estimate of the regular education costs districts could reduce; the current formula subtracted $157.5 million.

e. Funding the estimated additional costs of Special Education that we have identified would have resulted in Kansas paying for 83% of school districts' non-federally funded Special Education costs for the 2005-06 school year. Special Education costs not covered by federal funds generally are split between state and local governments. For 2004-05, Kansas paid for 56% of those non-federally funded expenditures.

To determine how Kansas' share of non-federally funded Special Education expenditures compared to other states for the 2004-05 school year, we contacted education officials from five states. Missouri was unable to differentiate between State and local funding. ***Figure 1.3-7*** summarizes how the four other states divided responsibility for the costs of Special Education that weren't paid for with federal funds.

Figure 1.3.7
Share of Non-Federally Funded Special Education Costs Paid at the State Level
Kansas and Nearby States
2004-05 School Year

State	Percent of Costs Paid at the:	
	State Level	Local Level
Wyoming	100%	0%
Nebraska	64%	36%
Iowa	63%	37%
Kansas	**56%**	**44%**
Colorado (a)	14%	86%
Missouri	n/a	n/a

(a) 2005-06 estimates.
Source: LPA survey of other states.

As the figure shows, Wyoming paid for 100% of the costs of Special Education, but that wasn't typical. Kansas' current share of 56% ranked 4th of the 5 states listed. However, as we have projected, if Kansas were to pay for 83% of school districts' non-federally funded Special Education costs, its ranking would move up to 2nd on this list. The Legislature could reduce that share–and the amount of categorical aid it provides districts–by lowering the percent of "excess" costs it funds. Under current statute, that percentage is 92%.

2. VARIATIONS IN SPENDING

Most variations in our sample districts' costs per FTE student resulted from differences in the number or average salaries of certified teachers or paraprofessionals, and transportation costs. We analyzed variations in costs for the 2003-04 school year, the most recent data available at the time of our analysis. We focused on districts whose adjusted direct costs per FTE Special Education student were 20% above or below the median cost. The results are summarized in ***Figure 1.3-8***.

Figure 1.3-8
Explanations for Why Some Districts Incurred Significantly Higher or Lower Costs For Providing Special Education Services

Primary Reasons Why Five Districts Costs Were Significantly Higher Than the Median of 19 Sample Districts				
District Name	**Higher Avg. Salaries for Certified Teachers**	**More Certified Teachers/10 FTE Students**	**More Paras/10 FTE Students**	**Higher Transportation Costs/ Student (a)**
Average (b)	$38,359	2.7	4.4	$657
Prairie View	$39,738	3.4	6.5	$1,137
Shawnee Mission	$52,272	3.0	(c)	$827
Fairfield	(c)	3.7	(c)	$1,937
Atchison County	$39,662	4.0	(c)	(c)
Salina	$41,479	2.8	(c)	$712
Primary Reasons Why Three Districts Costs Were Significantly Lower Than the Median of 19 Sample Districts				
District	**Lower Average Annual Salaries**	**Fewer Cert. Teachers/10 FTE Students**	**Fewer Paras / 10 FTE Students**	**Lower Transportation Costs/Student (a)**
Average (b)	$38,359	2.7	4.4	$657
Hutchinson	$37,352	1.8	3.1	$442
Derby	(c)	2.0	2.9	$414
Winfield	$34,291	1.9	3.1	$437

(a) Includes student transportation costs and mileage reimbursements for teacher travel.
(b) For 191 school districts that said they provided all Special Education services.
(c) This was not a factor in explaining why this district's costs were higher or lower.

Source: LPA analysis of Department of Education data

We looked for other reasons that might have helped explain the differences in median costs per student—such as the percent of Special Education students in each exceptionality, and the percent of each district's total student population that was receiving Special Education services. None of these analyses helped explain why costs varied among districts.

3. OTHER FINDINGS

a. States' distribution systems tend to fall into two broad categories: service-based systems, and student-based systems. To see how other states distribute Special Education funding to school districts, we reviewed a May 2003 report on the structure of state funding systems published by the Center for Special Education Finance, a research center funded by the U.S. Department of Education. States' Special Education funding systems tend to fall into these categories:

- **Service-Based Systems** – School districts receive funds based on either the resources used (i.e., number of teachers employed) or the amount of time spent to provide Special Education services. The current Kansas system is a service-based system.

- **Student-Based Systems** – School districts receive funds based on a count of students in the district. For example, this funding might be based on a count of all Special Education students in the district.

The various systems used in other states, according to the Center for Special Education Finance report, are summarized in **Appendix 12**, along with estimates of how much funding each school district in Kansas might receive under other states' funding systems. The Legislative Educational Planning Committee studied the different methods that states use to distribute Special Education funding in 2004, and decided not to change the current distribution system in Kansas.

b. According to research, the type of Special Education funding system used by Kansas isn't likely to encourage "over-identification" of Special Education students. We reviewed literature on Special Education to see if having the State fund 100% of the cost of Special Education encourages school districts to "over-identify" Special Education students. Over-identification occurs when students who don't need special services are placed in Special Education. It increases the cost of Special Education and may unnecessarily stigmatize students.

The available research on the impact of funding systems on identification rates is limited, but studies done in a couple of other states suggest that increasing the level of reimbursement does encourage school districts to identify more students for Special Education services:

- **Texas –** Researchers found that a 10% increase in Special Education funding per student was related to a 1.4% increase in the percent of students classified as disabled.

- **Kentucky –** The number of students identified for Special Education services increased after that state switched to a student-based system and removed a statewide limit on Special Education funding.

However, other research indicates the risk of over-identification is greatest when state funding is based on the number of Special Education students in a district. Kansas doesn't have this type of system.

1.4: What Are the Additional Costs of Providing Vocational Education Programs?

Vocational Education classes are designed to teach high school students about current or emerging occupations that don't require an advanced degree. These classes are part of a district's regular education curriculum; students can take them as an elective that counts toward their graduation requirements.

Even though school districts aren't required to offer Vocational Education programs, the State has adopted a Vocational Education funding formula to help pay for these programs. That's why we included Vocational Education in our cost study. In the 2005-06 school year, 278 of the 300 school districts in Kansas had at least one approved Vocational Education program.

BACKGROUND: PROGRAM REQUIREMENTS FOR VOCATIONAL EDUCATION

Although districts may offer a wide variety of Vocational Education classes, many of those classes may not be part of a Vocational Education program approved by the Department of Education. By law, State funding only pays for Vocational Education classes offered as part of an approved program.

Kansas has adopted the standards of the federal Carl Perkins Vocational and Technical Education Act of 1998 in this area. Specific program requirements include:

- School districts can offer Vocational Education programs in seven major areas: agriculture, business and computer technology, family and consumer science, health occupations, marketing, technology, and trade and industry.

- An approved Vocational Education program must have a sequence of at least three Vocational Education classes at the high-school level, including a mandatory introductory course. For example, the sequence for a food production program might include Introduction to Foods, Foods II, and Creative Cooking. Students enrolled in the introductory course aren't eligible to be counted toward State Vocational Education funding. All courses in a program must be taught by a certified instructor.

For 2005-06, the Department of Education approved 1,504 Vocational Education programs Statewide. Large urban districts tend to have a greater number and variety of programs, while smaller rural districts have fewer programs, many focusing on agriculture.

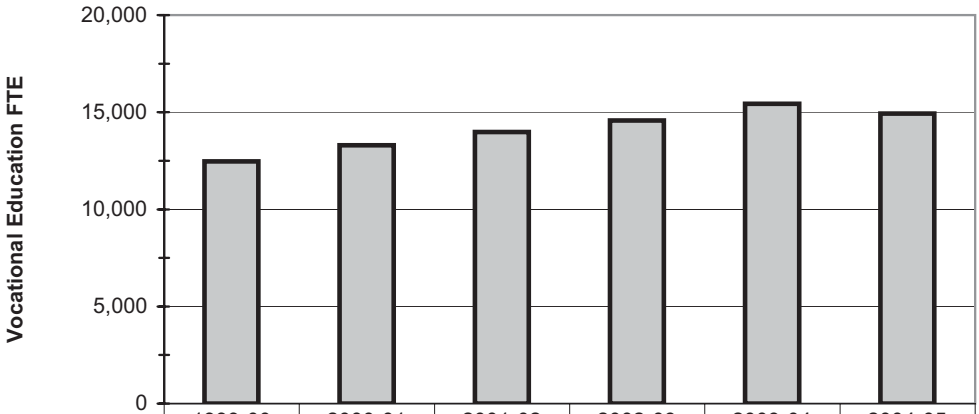
Most school districts hire their own Vocational Education teachers and offer programs "in-house," but several have agreements with other districts, community colleges, or Area Vocational Technical Schools to offer Vocational Education programs to their students.

BACKGROUND: NUMBER OF VOCATIONAL EDUCATION STUDENTS SERVED

Student participation in Vocational Education programs is measured in student contact hours. A contact hour is generated for every student enrolled in an approved non-introductory Vocational Education class as of September 20. Vocational Education student contact hours are converted to an FTE basis; six student contact hours equal one FTE student.

During the 2004-05 school year, almost 15,000 FTE students participated in approved Vocational Education programs. ***Figure 1.4-1*** shows the Statewide Vocational Education FTE enrollment over the past six years. The number of FTE students has increased steadily over most years, but dropped slightly in 2004-05.

Figure 1.4-1
Vocational Education FTE
1999-00 to 2004-05



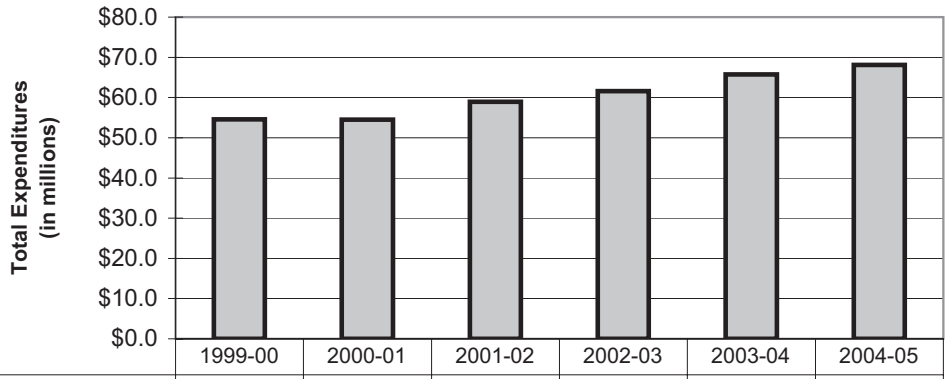
	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Voc Ed FTE	12,470	13,306	13,985	14,578	15,434	14,927

Source: Department of Education data.

BACKGROUND: REPORTED VOCATIONAL EDUCATION EXPENDITURES

Expenditures for Vocational Education are supposed to be reported in school districts' Vocational Education Funds. For 2004-05, districts reported spending a total of $68.1 million in those Funds. ***Figure 1.4-2*** shows total reported school district expenditures for Vocational Education from 1999-00 to 2004-05, as well as expenditures per FTE student for those years.

Figure 1.4-2
Statewide Reported Vocational Education Expenditures
1999-00 to 2004-05 (a)



	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Total Expenditure	$54,603,122	$54,471,315	$58,924,060	$61,575,114	$65,776,935	$68,082,680
Expenditure/FTE	$4,379	$4,094	$4,213	$4,224	$4,262	$4,561

(a) adjusted for inflation to 2004-05 dollars.
Source: Department of Education data.

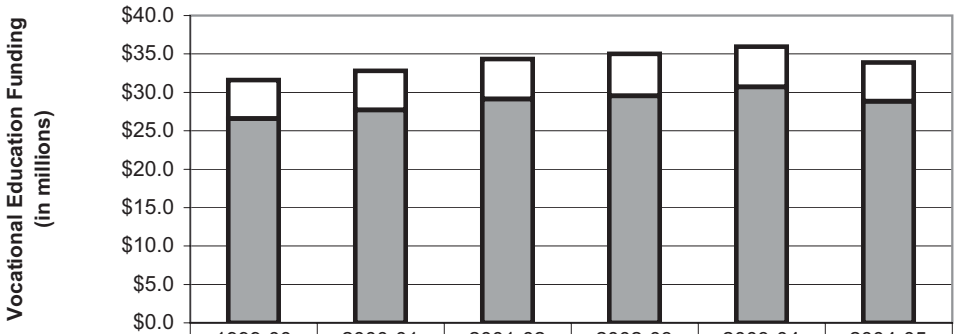
BACKGROUND: PROGRAM FUNDING FOR VOCATIONAL EDUCATION

To offset the additional costs districts incur by offering Vocational Education, State aid is provided through a separate weight in the current State funding formula. For each FTE student in Vocational Education, the State provides an additional 50% of the Base State Aid Per Pupil (BSAPP), or $2,129 under the current Base.

In 2004-05, the State provided a total of $28.8 million in Vocational Education aid through this funding mechanism to school districts. (The State also provided about $4.3 million in specific technology grants for vocational education that same year—most of which went to Area Vocational Technical Schools.) Districts also received about $5 million in federal aid under the Carl Perkins Act. To qualify for federal funding, school districts must have an approved Vocational Education program that has been in operation for at least one year. Federal moneys can be used only for new Vocational Education activities or for the enhancement of existing programs.

Figure 1.4-3 shows the annual amount of State and federal aid school districts received for Vocational Education over the last six years.

Figure 1.4-3
State and Federal Vocational Education Funding
1999-00 to 2004-05 (a)



	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Federal (Carl Perkins)	$5.0	$5.1	$5.2	$5.5	$5.3	$5.1
State Aid	$26.6	$27.7	$29.1	$29.6	$30.7	$28.8

(a) adjusted for inflation to 2004-05 dollars
Source: Department of Education data.

COST STUDY: METHODOLOGY FOR VOCATIONAL EDUCATION

Although Vocational Education classes are taken as electives within the regular education curricula, those programs often require the use of specialized equipment—such as sophisticated computer technology or trades equipment—that may be more expensive than in normal elective classes. In some cases, instructional costs for Vocational Education teachers may be higher because some teachers have specialized experience, or Vocational Education class sizes may be smaller. The methodology we used for estimating the additional costs of Vocational Education can be summarized as follows (more detail is included in **Appendix 1.4**):

1. **Selecting a sample of districts to review.** We selected a sample of 21 school districts based on a preliminary survey that identified which districts could differentiate between their Vocational Education expenditures that were part of an approved program, and those that weren't. Our sample included all sizes of districts, but was weighted more heavily to the districts with the greatest number of Vocational Education students. In all, these 21 districts accounted for 32% of FTE Vocational Education students and 28% of reported Vocational Education expenditures for 2004-05.

   We think it's reasonable to use the results from these sample districts to make Statewide projections regarding the additional Vocational Education costs and resulting weight. Nonetheless, the reader should be aware our estimate assumes that districts that could separately identify their expenditures for approved Vocational Education would be fairly representative of all districts.

2. **Identifying districts' direct costs of Vocational Education.** We asked our sample districts to provide data for 2003-04 and 2004-05 showing all expenditures they had reported from their

Vocational Education Funds, plus any additional, direct expenditures for Vocational Education they had made but not reported in these Funds. We reviewed supporting documentation for a sample of non-payroll expenditures, obtained and analyzed copies of districts' master teaching schedules, and verified allocated salary amounts for certified and non-certified Vocational Education staff. We also reviewed and averaged five years of capital expenditures for Vocational Education equipment.

Based on these reviews, we made a number of adjustments to the expenditure information the sample districts reported. We used those adjusted figures to compute a median direct cost for Vocational Education for the 21 districts in our sample, and to estimate a total Statewide direct cost for Vocational Education. (Because both years we reviewed resulted in similar amounts, we are reporting the results from the work we did only for 2004-05.)

3. **Estimating the "additional" costs of Vocational Education.** To estimate the costs districts incur for Vocational Education that are above and beyond the cost of regular education, we computed the following and subtracted it from the direct costs of Vocational Education:

   a. the average regular cost of instruction per FTE student
   b. the average amount of federal Carl Perkins funding per FTE student (the federal amount available to cover vocational education expenses)

4. **Calculating the Vocational Education weight.** Using information from our sample districts, we divided our estimated additional cost of Vocational Education into the current Base State Aid Per Pupil.

COST STUDY: RESULTS FOR VOCATIONAL EDUCATION

1. ESTIMATED ADDITIONAL COSTS

We estimated that the additional costs for Vocational Education for 2005-06 are $1,375 per FTE student, which results in a funding weight of .323 for that year. ***Figure 1.4-4*** shows this information, and compares it with the weight provided for Vocational Education under the current funding formula.

Figure 1.4-4
Comparison of LPA Estimated Vocational Education Costs and Weights to the Current Funding Formula
2004-05 and 2005-06 School Years

Calculations:	LPA Estimate		Current Funding Formula	Difference
	2004-05	2005-06	2005-06	
Direct Cost per Student FTE	$5,169	$5,364	---	---
Less Regular Instruction Costs/FTE	($3,505)	($3,637)	---	---
Less Federal Funding for Vocational Education	($339)	($352)	---	---
Additional Cost per Student FTE	**$1,325**	**$1,375**	**$2,129**	**($754)**
Vocational Education Weighting *(Additional Cost ÷ $4,257)*	0.311	0.323	0.500	(0.177)

Source: LPA Analysis of Vocational Education data received from 21 sample districts.

The sections that follow show how we arrived at our estimated additional cost for Vocational Education.

a. For 2004-05, we determined that our 21 sample districts spent $22.5 million on <u>direct</u> expenditures for approved Vocational Education programs. This is 17.8% more than what these districts reported spending to the Department of Education. To arrive at this figure, we made a series of adjustments, which are summarized in ***Figure 1.4-5***.

Figure 1.4-5
Summary of Adjustments to 21 Sample Districts' Reported Vocational Education Expenditures

Description	2004-05
Expenditures reported in districts' Vocational Education Fund (Fund 34) as reported to LPA (a)	$19,024,290
Adjustments to Expenditures	***Net Adjustments***
Capital Outlay and Bond Expenditures LPA received the 2001-2005 capital outlay expenditures from each sample school district and smoothed it out based on life spans of items purchased.	$1,534,964
Made salary/benefits adjustments LPA determined the amount of time that teachers spend on Vocational Education. Using master schedules and staff contracts, LPA adjusted the original salary/benefit data submitted by each school district based on the time spent on Vocational Education.	$1,342,454
Added additional direct expenditures districts had not reported in their Vocational Education Funds (primarily for equipment, supplies, maintenance, transportation, and repairs)	$1,027,701
Removed allocated overhead expenses that were not incurred exclusively for Vocational Education program purposes (i.e., allocation of indirect expenses, such as a portion of a salary not related to an approved Vocational Education program)	($318,386)
Removed expenditures not related to an approved vocational education (i.e., equipment or supplies not being used in an approved Vocational Education program)	($149,914)
Other Adjustments (i.e., minor adjustments for such things as shipping and handling charges for equipment and supplies)	$5,198
DIRECT EXPENDITURES FOR VOCATIONAL EDUCATION	**$22,466,307**

(a) This amount is $48,625 less than the $19,072,915 that school districts reported as Vocational Education Fund (Fund 34) expenditures to the Kansas Department of Education

Source: LPA analysis of vocational education expenditures reported by 21 sample districts.

b. After making these adjustments, we determined that the median direct cost per FTE student in Vocational Education for our 21 sample districts was $5,169 in 2004-05. ***Figure 1.4-6*** summarizes these costs, by district.

Figure 1.4-6
Direct Costs for Vocational Education
21 Sample Districts
2004-05 School Year

District #	District Name	Total Direct Cost	Student FTE	Direct Cost per FTE
232	DeSoto	$807,302	103.1	$7,830
437	Auburn-Washburn	$885,648	114.6	$7,728
308	Hutchinson	$1,763,208	256.3	$6,879
373	Newton	$946,598	138.8	$6,820
418	McPherson	$662,868	104.8	$6,325
229	Blue Valley	$3,217,549	520.2	$6,185
321	Kaw Valley	$348,088	61.8	$5,632
445	Coffeyville	$629,835	114.3	$5,510
456	Marais Des Cygnes Valley	$80,870	15.3	$5,286
400	Smoky Valley	$155,862	29.6	$5,266
270	**Plainville -- Median**	**$141,103**	**27.3**	**$5,169**
432	Victoria	$100,897	20.2	$4,995
443	Dodge City	$984,451	203.6	$4,835
501	Topeka	$1,012,772	228.4	$4,434
465	Winfield	$479,018	108.6	$4,411
259	Wichita	$5,802,947	1347.8	$4,305
216	Deerfield	$101,595	24.8	$4,097
305	Salina	$679,731	182.2	$3,731
497	Lawrence	$960,476	264.2	$3,635
320	Wamego	$278,355	76.8	$3,624
500	Kansas City	$2,427,134	804.8	$3,016
Total		**$22,466,307**	**4,747.5**	

Source: LPA analysis of Vocational Education data received from 21 sample districts.

2. VARIATIONS IN SPENDING

Most of the variations we saw in our sample districts' costs were attributable to differences in capital outlay or bond expenditures, salaries and benefits, numbers of teachers, instructional supplies, and tuition payments. Our review focused on districts whose adjusted direct costs for FTE student were 20% above or below the median cost. Our comparisons are shown in ***Figure 1.4-7***.

Figure 1.4-7
Explanations for Significantly Higher or Lower Vocational Education Costs In Certain School Districts for School Year 2004-05

Primary Reasons Why Five Sample Districts' Costs Were Significantly Higher Than the $5,169 Median of 21 Sample School Districts

District	Higher Capital Outlay or Bond Expenditures per Student FTE	Higher Salaries & Benefits per Student FTE	More FTE Teachers per 20 FTE Students	Higher Instructional Supplies Expenditures per Student FTE	Higher Tuition/Coop Payments & Other Purchased Services per Student FTE
Average (a)	**$323**	**$3,013**	**1.3**	**$309**	**$313**
DeSoto	$1,753	$3,432	1.6	(b)	$2,302
Auburn-Washburn	$1,549	$3,628	1.5	(b)	$1,902
Hutchinson	$772	$3,643	1.8	$680	(b)
Newton	$365	$3,699	1.7	$504	(b)
McPherson	(b)	$4,342	2.0	$630	(b)

Primary Reasons Why Five Sample Districts' Costs Were Significantly Lower Than the $5,169 Median of 21 Sample School Districts

District	No or Lower Capital Outlay or Bond Expenditures per Student FTE	Lower Salaries & Benefits per Student FTE	Fewer FTE Teachers per 20 FTE Students	Lower Instructional Supplies Expenditures per Student FTE	Lower Tuition/Coop payments & Other Purchased Services per Student FTE
Average (a)	**$323**	**$3,013**	**1.3**	**$309**	**$313**
Deerfield	$261	(b)	(b)	$112	$4
Salina	$29	$2,507	1.1	$3	(b)
Lawrence	$0	$2,928	1.3	$122	$97
Wamego	$29	(b)	(b)	$299	$0
Kansas City	$125	$2,177	0.9	$196	$5

(a) Averages are for 21 sample school districts except for supplies and tuition expenditures, which is an average of all districts' costs within the Vocational Education Fund (Fund 34) as reported to the Department of Education.
(b) This was not a factor in explaining why this district's costs were higher or lower

Source: LPA analysis of Department of Education Vocational Education data and Vocational Education data received from 21 sample districts.

1.5: What Are the Additional Costs of Transporting Students Who Live More Than 2.5 Miles from School?

In general, the cost studies we reviewed either didn't try to address student transportation at all, or simply added the current transportation expenditures into their cost estimates. Likewise, we chose to exclude student transportation from our primary analyses of educations costs. We did, however, examine those costs for the following reasons:

- Student transportation costs are a major expense for school districts that the State helps fund through the current formula.
- The school finance legislation passed in 2005 required an input-based cost study to consider the curricula, programs, and services mandated by State statute. Transporting certain students to and from school is required by statute.

BACKGROUND: TRANSPORTATION PROGRAM REQUIREMENTS

Under State law, school districts are required to transport public school students who live at least 2.5 miles from the school they attend, as long as one of the following conditions is met:

- the student lives outside a city
- the school is located outside a city
- the student lives in a different city than his or her school is located

In other words, districts aren't required to transport public school students who live less than 2.5 miles from school or who live in the same city where their school is located, regardless of how far they live from school (although they may choose to do so).

In addition to public school students, districts are required to transport students who attend accredited private or parochial schools within the boundaries of the district, as long as those students can gather at a place along a regular school bus route.

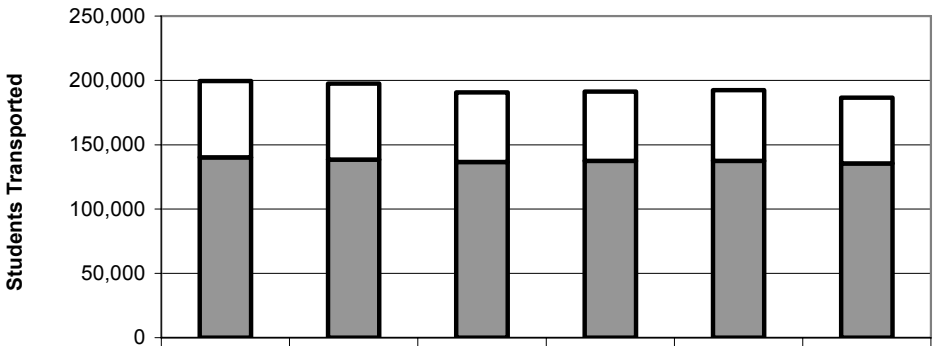
Districts may choose to charge a fee for transporting a student unless:

- the State already is paying for that student through the transportation funding formula
- the student is disabled
- the student is eligible for free or reduced-price lunches
- the student attends a private or parochial school and lives more than 2.5 miles from the school attended

BACKGROUND: STUDENTS SERVED BY THE TRANSPORTATION PROGRAM

During the 2004-05 school year, school districts transported more than 186,500 public school students to and from school for regular education activities. Of these, almost 135,500 students (73%) lived at least 2.5 miles from school. ***Figure 1.5-1*** shows the total number of local public school students transported by districts from 1999-00 through 2004-05.

Figure 1.5-1
Public School Students Transported
1999-00 to 2004-05



	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
<2.5 Miles	59,148	59,048	54,114	53,929	55,062	51,146
>2.5 Miles	140,272	138,480	136,542	137,380	137,413	135,440

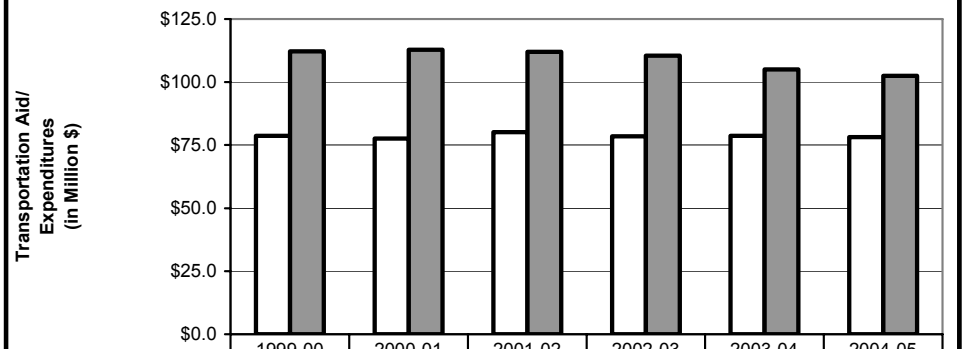
Source: Department of Education data.

BACKGROUND: TRANSPORTATION PROGRAM EXPENDITURES

School districts reported spending $102.5 million to transport students for regular education activities in 2004-05. In addition to costs for students who must be transported by law, this figure includes the cost of transporting students who live within 2.5 miles of school, as well as the cost of transporting students for school activities, such as field trips or athletic competitions. (Special Education transportation costs are excluded here.)

Figure 1.5-2 shows the total funding the State gave school districts to help cover transportation costs, and district transportation expenditures for regular education students over the past six years.

Figure 1.5-2
Comparison of Statewide Regular Education
Transportation Aid and Expenditures
1999-00 to 2004-05 (a)



	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
State Aid	$78.7	$77.6	$80.2	$78.5	$78.7	$78.1
Expenditures	$112.2	$112.8	$112.0	$110.5	$105.0	$102.5

(a) Adjusted for inflation to 2004-05 dollars.
Source: Department of Education data.

BACKGROUND: TRANSPORTATION PROGRAM FUNDING

State funding is based on a transportation weighting in the school funding formula. Under the transportation funding formula, which dates to 1973, the State reimburses districts for the cost of transporting regular education students who live at least 2.5 miles from the schools they attend. It doesn't reimburse districts for the cost of transporting students to and from school activities.

The State doesn't directly reimburse school districts for their actual transportation costs. Instead, the transportation funding formula is used to estimate how much it should cost school districts to transport students more than 2.5 miles, depending on the number of those students per square mile (student density) in the district. It does that in several steps:

1. First, the formula is used to allocate transportation costs between students who live more than 2.5 miles from school and those who live less than 2.5 miles. This is necessary because districts don't report their transportation costs by these categories of students; they only report total transportation costs. The steps involved in making this allocation can be transformed into a single mathematical equation, which is shown in ***Figure 1.5-3***.

Figure 1.5-3
Transportation Cost Allocation Formula
in the Current Funding Formula

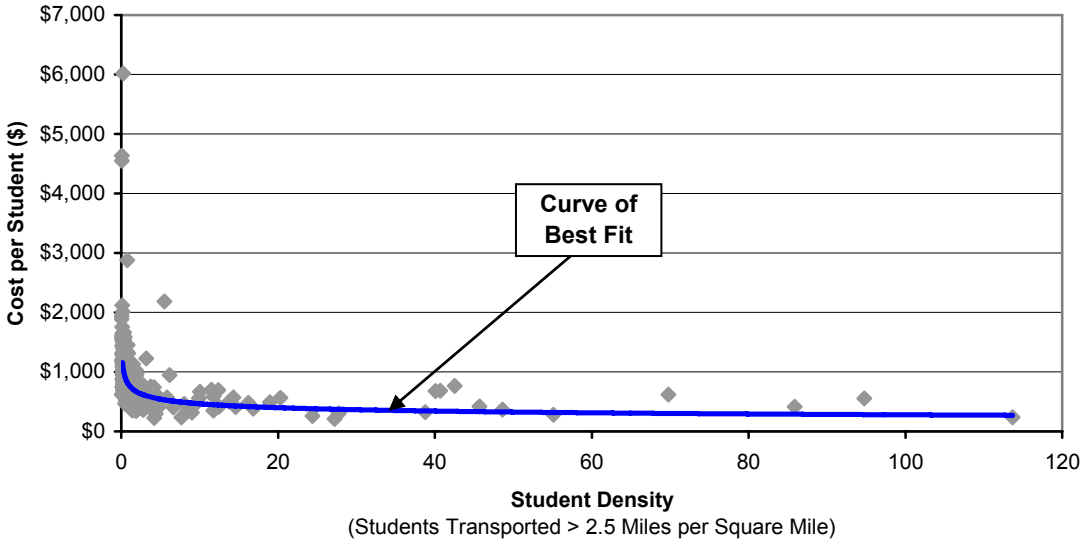
$$\text{COST PER STUDENT >2.5 MI} = \frac{\text{Total Costs} - \left[\left(\text{Total Costs} \div \text{Total Students}\right) \times 0.5 \times \text{Students <2.5 mi}\right]}{\text{Students >2.5 mi}}$$

Source: LPA analysis of current transportation funding formula in K.S.A. 72-6411.

The formula uses 50% of the average cost for all students as the average cost of transporting a student less than 2.5 miles. This implies that the formula is built on the assumption that it's **twice as expensive** to transport students who live more than 2.5 miles from school as it is to transport students who live less than 2.5 miles. Department of Education officials confirmed that our assumption was correct.

2. Second, both the newly estimated cost per student transported more than 2.5 miles and the student density for each district are plotted on a chart. Statistical regression techniques are used to determine a "curve of best fit" through the cost data. This curve represents the average per-student cost of transporting students for districts with similar student densities. ***Figure 1.5-4*** shows the curve of best fit for 2004-05. A district's density is important—more densely populated districts tend to have lower per-student transportation costs, because it's more efficient to transport groups of students who live close together than it is to pick up and transport students who are spread out for miles.

Figure 1.5-4
Student Density - Transportation Cost Chart With the "Curve of Best Fit"
2004-05 School Year



Source: LPA analysis of Department of Education data.

The amount the State will reimburse each district is determined by finding the cost on the curve for each district's student density. That amount per student is multiplied by the number of students transported more than 2.5 miles. Using the cost curve helps ensure that districts are reimbursed for the average cost of similar districts, rather than what high-spending or low-spending districts spend.

For the 2004-05 school year, the State provided $78.1 million in State transportation aid to school districts. State transportation aid for the past six years also is shown graphically on ***Figure 1.5-2***.

COST STUDY: METHODOLOGY FOR ESTIMATING TRANSPORTATION COSTS

The methodology we used in estimating the cost of transporting students more than 2.5 miles as required by law can be described as follows:

1. We reviewed the current transportation funding formula set out in State statute to evaluate the reasonableness of how transportation aid is calculated. We paid particular attention to how transportation costs are allocated between students transported more than 2.5 miles (paid for by the State) and students transported less than 2.5 miles (not paid for by the State).

2. Based on our evaluation of the formula, we re-estimated transportation aid for each school district and compared the results to the actual State transportation funding districts received for the 2004-05 school year.

3. One aspect of the transportation funding formula that is often debated is whether the State should lower the 2.5 mile threshold for receiving State transportation aid. We didn't evaluate this policy issue in conducting this study.

COST STUDY: RESULTS FOR STUDENT TRANSPORTATION COSTS

1. ESTIMATED TRANSPORTATION COSTS

The Statewide estimated costs for transporting students who live more than 2.5 miles from school is $66.9 million in 2005-06. This is about $13.9 million less than the $80.8 million the State is expected to pay out under the current formula. Those results are summarized in ***Figure 1.5-5***.

Figure 1.5-5
Comparison of Transportation Costs
LPA ESTIMATES vs. CURRENT FUNDING FORMULA
2004-05 and 2005-06 School Years
(amounts in millions)

Cost	LPA Estimate		Current Funding Formula	Difference
	2004-05	2005-06	2005-06	
Student Transportation	$64.0	$66.9	$80.8	($13.9)

Source: LPA analysis of Department of Education Data

In arriving at our estimate, we reviewed and then revised the current formula to address two separate problems we identified. Those problems are discussed below:

First, the current formula produces some illogical and inconsistent results in allocating transportation costs to students who live more than 2.5 miles from school—those the State is helping pay for. We used the current formula to allocate transportation costs for several districts that had significantly different numbers and percentages of students that they transported more than 2.5 miles. The results were startlingly different. Here are examples for three districts:

- Lakin transported 171 students in 2003-04, 69% of whom lived more than 2.5 miles from school. On a per-student basis, the formula allocated **2.5 times** more transportation costs to these students than to students who lived less than 2.5 miles from school
- Liberal transported 1,078 students, 33% of whom lived more than 2.5 miles from school. The formula allocated **4 times** more costs to these students.
- Parsons transported 139 students, only 9% of whom lived more than 2.5 miles from school. The formula allocated **13 times** more costs to these students

These differences are not due to the distances students are transported, because the formula doesn't take that into account. Instead, these differences exist because the formula, in essence, does the following in allocating total transportation costs:

- allocates half of all transportation costs to students who live more than 2.5 miles from school (regardless of how many of these students there actually are)
- divides the rest of the transportation costs proportionally between students who live more than 2.5 miles from school, and students who live less than 2.5 miles.

Second, the cost of transporting non-resident (out-of-district) students is left in the current formula and allocated as a cost of transporting resident students. That means the State inadvertently reimburses districts for the part of those non-resident students' costs that is allocated to students living more than 2.5 miles from school.

The impact on these three sample districts of both problem areas we identified with the formula is shown in ***Figure 1.5-6*** (under the column headed current formula). It's clear from these examples that the formula is **not** uniformly "implementing" the built-in assumption—that it's twice as expensive to transport students who live more than 2.5 miles from school as it is to transport students who live less than 2.5 miles. We revised the formula to do that. The revised results for these three districts also are shown on ***Figure 1.5-6***.

Figure 1.5-6
Examples of Transportation Cost Allocation in Three Districts
2004-05 School Year

	USD 215 Lakin		USD 480 Liberal		USD 503 Parsons	
REPORTED INFO (a)						
Total Transp. Costs	**$202,650**		**$274,042**		**$126,233**	
Students Transported						
More than 2.5 miles	118		356		12	
Less than 2.5 miles	42		716		119	
Non-res. students	11		5.5		8	
Total	**171**		**1077.5**		**139**	
ALLOCATED COSTS						
	Current Formula	**LPA Revised Formula**	**Current Formula**	**LPA Revised Formula**	**Current Formula**	**LPA Revised Formula**
Total Allocated Costs						
More than 2.5 miles	$177,763	$165,486	$182,991	$136,113	$72,198	$20,064
Less than 2.5 miles	$24,887	$29,451	$91,051	$136,878	$54,035	$99,481
Non-res. students	$0	$7,713	$0	$1,051	$0	$6,688
Total	**$202,650**	**$202,650**	**$274,042**	**$274,042**	**$126,233**	**$126,233**
Allocated Per-Student Costs						
More than 2.5 miles	$1,506	$1,402	$514	$382	$6,017	$1,672
Less than 2.5 miles	$593	$701	$127	$191	$454	$836
Non-res. students	$0	$701	$0	$191	$0	$836
Per-Student Cost Ratio						
> 2.5 mi to < 2.5 mi	**2.54**	**2.00**	**4.04**	**2.00**	**13.25**	**2.00**

(a) Allocations for the 2004-05 school year are based on 2003-04 school year information.
Source: LPA analysis of current transportation funding formula.

The revised formula itself is shown in ***Figure 1.5-7***; the actual and revised amounts of State transportation aid for all 300 school districts in 2004-05 and 2005-06 are shown in **Appendix 13**.

Figure I.5-7
Revised Transportation Cost Allocation Formula

$$\text{TOTAL COSTS FOR STUDENTS >2.5 MI} \;\div\; \left(\left(\text{Students <2.5 mi} + \text{Non-Res Students}\right) \div \left(2 \times \text{Students >2.5 mi}\right) + 1\right)$$

Source: LPA revised transportation cost allocation formula.

2. OTHER ISSUES RELATED TO TRANSPORTATION FUNDING

We noted that the current formula provides funding for students who live in the same city as their school, even though school districts aren't required by law to transport them. In other words, although State law doesn't require districts to transport all students who live more than 2.5 miles from school, the transportation funding formula helps pay for any students that districts choose to transport more than 2.5 miles.

Districts don't report how many of the students they do transport more than 2.5 miles who are required to be transported under State law. Without this information, we weren't able to calculate the cost of transporting only those students who are required by law to be transported.

Two possible ways that the transportation requirements and the funding formula could be aligned:

- **Restrict transportation aid to those students whom districts are required by law to transport.** That would exclude students who are transported within a city's limits from being eligible for funding. As a result, virtually all students would be excluded in districts that are almost wholly within a city, including Kansas City, Topeka, and Hutchinson, and those districts would receive almost no State transportation aid.

- **Require districts to transport all students who live more than 2.5 miles from school, even if it is within the city limits.** That would mean some districts would have to begin transporting a number of new students.

1.6: How Do Education Costs Vary in Different Regions of the State?

Salaries and benefits for teachers account for about half of school districts' total spending, which makes teacher compensation their single largest cost. Teacher compensation can vary significantly from district to district, which affects how much education costs in each district. Furthermore, many of the important factors that drive this variation are outside a district's control, such as cost of living or the attractiveness of the community.

The school finance legislation that authorized this education cost study requires us to study "the factors which may contribute to the variations in costs incurred by school districts of various sizes and in various regions of the state." Because teacher compensation is the largest cost faced by districts, in this section we look at the factors that cause teacher salaries to vary, in order to estimate how much overall education costs may vary throughout the State.

BACKGROUND: THE LEGISLATURE'S 2005 ADJUSTMENTS FOR REGIONAL COST DIFFERENCES

During the 2005 legislative session, the Legislature added a cost-of-living provision to the funding formula in an attempt to address the fact that teacher salaries differ throughout the State. The cost-of-living provision authorized a new local property tax levy for districts that met the following conditions:

- the average appraised value of a single-family home in the district exceeded 125% of the Statewide average
- the district already had adopted the maximum local option budget

In June 2005, the Kansas Supreme Court stayed the cost-of-living provision, noting that the State couldn't substantiate its claim that districts with higher housing costs needed to pay higher salaries to attract teachers. Rather, the Court noted that districts with "high-poverty, high at-risk student populations" were the ones that needed to offer higher salaries to attract teachers.

BACKGROUND: SELECTING AN APPROACH

After reviewing literature about teacher salaries, we considered several approaches to address the regional variation in teacher salaries. These approaches are summarized below:

- **Average teacher salaries in a district.** One very straightforward way of looking at the differences in teacher salaries across the State is to compare the average salary in each district. There are two basic problems with this approach. First, average teacher salaries in a district are affected significantly by the education and experience of its teachers. As a result, comparing average teacher salaries—without taking into account the education and experience of teachers in different districts—leads to faulty comparisons. Second, this approach doesn't consider how strongly the district bargained during contract negotiations and whether it really had to pay as much for teachers as it did.
- **Cost of living in the community.** Another way of looking at the differences in teacher salaries is to compare the cost of living in different communities. There are two primary ways of measuring cost of

living—average housing values, and average wage levels. While cost of living is likely to be a very important factor that drives teacher salaries, this approach ignores other important factors, such as the attractiveness of the community and the desirability of the working conditions in the schools. As we noted earlier, a version of this approach was adopted by the 2005 Legislature but was subsequently rejected by the Court.

- **Statistical teacher-wage models.** Teacher-wage models use statistical techniques to estimate teacher costs in each district, controlling for factors that affect teacher salaries, such as teacher education and experience, district efficiency, community cost of living and amenities, and school working conditions.

We decided to use a teacher-wage model to analyze the regional differences in teacher salaries because we thought it was the best method for incorporating the key factors that drive teacher salaries. In their 2002 report, Augenblick & Myers recommended Kansas use a geographic cost index based on a teacher-wage model that was developed for the National Center for Education Statistics (NCES) in 1995. Because that index hasn't been updated since then, we developed our own teacher-wage model.

COST STUDY: METHODOLOGY FOR ESTIMATING REGIONAL COST DIFFERENCES

The teacher-wage model is a tool for understanding why teacher salaries vary throughout the State. The model looks at factors relating to teachers (such as education and experience) that might allow them to command higher salaries. It also incorporates factors relating to teaching in the school district (such as working conditions, community amenities, and the cost of living in the area) that might make the job more attractive for less pay. In our teacher-wage model, we use statistical regression techniques to understand how the following factors affect teacher salaries:

- **Teacher Characteristics** – Teachers with more experience and advanced degrees generally command higher salaries.

- **District Efficiency** – Districts with a larger tax base and easier access to funding, or those with little pressure from the community to operate efficiently, may have less incentive to take a strong bargaining position in teacher contract negotiations.

- **Cost of Living in the Community** – Districts located in communities with high housing prices often need to pay more to attract teachers.

- **Community Amenities** – People often prefer to live near large metropolitan cities because they offer a number of cultural, economic, and social amenities. As a result, districts that are closer to such cities may be able to pay less and still attract teachers.

- **Working Conditions** – Teachers generally prefer to avoid teaching in high-poverty, inner-city districts. As a result, these districts may have to pay more to attract teachers.

Below is a brief discussion of the steps involved in building a teacher-wage model and calculating a regional cost index. They are discussed in detail in ***Appendix 1.6***.

1. **Identifying, collecting, and preparing the data for the statistical analysis.** We collected four years of teacher, school district, and housing data (2001-02 to 2004-05) for all 300 districts. These data included measures of teacher characteristics, community cost of living and amenities, and school district efficiency

and working conditions. (For this analysis, supplemental pay couldn't be excluded from teacher salaries because that information wasn't available separately for earlier years.)

2. **Analyzing the data to build a teacher-wage model.** We used statistical regression techniques to analyze the data and examine the relationship between teacher salaries and the five factors listed above. Essentially, the teacher-wage model uses statistics to isolate each factor and measure how it affects teacher salaries. For example, all other things being equal, how much do teacher salaries increase with an increase in housing prices in the community? The relationships are compiled in a mathematical equation.

3. **Using the teacher-wage model to estimate a regional cost index.** We used the teacher-wage model to estimate what different districts would have to pay for a comparable teacher (average level of education and years of experience), and compiled the estimates into a teacher salary index. The teacher salary index indicates how much more or less a particular district would need to pay for an average teacher, compared to the average district in the State. Finally, because teacher salaries and benefits make up about half the costs in a district, we adjusted the salary index so that it would apply to only 50% of a district's costs.

COST STUDY: RESULTS FOR REGIONAL COST DIFFERENCES

We used the teacher-wage model to estimate what different districts would have to pay for a comparable teacher in different parts of the State. The results are as follows:

1. ESTIMATED REGIONAL COST INDEX

Using our teacher-wage model, we developed a regional cost index that varies from about 2% below average to 5% above average across all 300 districts. The regional cost index is our estimate of how much higher or lower than the average a district's total costs will be because of differences in the salaries they have to pay teachers. The right-hand column of ***Figure 1.6-1*** shows the regional cost indices for the 10 most expensive and 10 least expensive districts in the State. **Appendix 14** shows results for all 300 districts.

To calculate a regional cost index for each district, we did the following:

a. **We used the teacher-wage model to estimate what each district would have to pay for a comparable teacher.** The salary estimates ranged from a low of $38,520 in Comanche County to a high of $44,108 in Kansas City. The estimated salaries are shown in the second column of ***Figure 1.6-1***.

b. **We used the estimated teacher salaries to develop a teacher salary index.** This index indicates how much more or less a particular district needs to pay for a comparable teacher compared to the average district in the State. It is calculated by taking the estimated salary in each district and dividing it by the average estimated salary in all 300 districts. The index can be interpreted as a percentage—an index of 110 indicates a district would need to pay a 10% higher salary than the average district for a comparable teacher. The teacher salary index is shown in the third column of ***Figure 1.6-1***.

c. **To calculate a regional cost index, we adjusted the teacher salary index so it would only apply to 50% of a district's costs.** As we noted above, the regional cost index is an estimate of how much costs vary because of differences in teacher salaries. Because teacher salaries and benefits represent about 50% of a school district's costs, we calculated a regional cost index by cutting the effect of the salary index in half. The formula for this adjustment is shown in footnote (a) of ***Figure 1.6-1***.

Figure 1.6-1
Predicted Salaries and Cost Indices
Districts With the 10 Highest and 10 Lowest Cost Indices
2004-05 School Year

DISTRICT	ESTIMATED SALARY		REGIONAL COST INDEX(a)
	Salary	*Salary Index*	
STATEWIDE			
Average	*$40,260*	*100.0*	**100.0**
Maximum	*$44,108*	*109.6*	**104.8**
Minimum	*$38,520*	*95.7*	**97.8**
Ten Highest Estimated Salaries			
500 - Kansas City	*$44,108*	*109.6*	**104.8**
501 - Topeka	*$43,671*	*108.5*	**104.2**
259 - Wichita	*$43,153*	*107.2*	**103.6**
308 - Hutchinson	*$42,531*	*105.6*	**102.8**
233 - Olathe	*$42,161*	*104.7*	**102.4**
202 - Kansas City-Turner	*$42,110*	*104.6*	**102.3**
231 - Gardner-Edgerton-Antioch	*$42,062*	*104.5*	**102.2**
230 - Spring Hill	*$42,032*	*104.4*	**102.2**
512 - Shawnee Mission	*$41,916*	*104.1*	**102.1**
232 - De Soto	*$41,913*	*104.1*	**102.1**
Ten Lowest Estimated Salaries			
446 - Independence	*$39,044*	*97.0*	**98.5**
426 - Pike Valley	*$38,992*	*96.9*	**98.4**
406 - Wathena	*$38,989*	*96.8*	**98.4**
461 - Neodesha	*$38,950*	*96.7*	**98.4**
447 - Cherryvale	*$38,930*	*96.7*	**98.3**
484 - Fredonia	*$38,909*	*96.6*	**98.3**
387 - Altoona-Midway	*$38,803*	*96.4*	**98.2**
427 - Republic County	*$38,696*	*96.1*	**98.1**
455 - Hillcrest	*$38,647*	*96.0*	**98.0**
300 - Comanche County	*$38,520*	*95.7*	**97.8**

(a) This is the effective cost index when the salary index is applied to 50% of each district's costs. It is calculated with the following formula:
*[Cost Index] = ([Salary Index] - 100) * 0.5 + 100*

Source: LPA analysis of teacher salary and labor market data.

2. REASONS FOR VARIATIONS

Variations in estimated teacher salaries are primarily the result of differences in school district working conditions and in the cost of living in different communities. We looked at the relationship between teacher salaries and three factors that are largely outside a district's

control: cost of living in the community, community amenities, and school working conditions.

To measure the effect each of these factors had on teacher salaries, we developed individual "factor indices." The factor indices are very similar to the salary index we described earlier. Indices below 100 drive salaries down, and indices above 100 drive salaries up. For example, all other things being equal, a district with a cost-of-living factor index of 110 would be expected to pay 10% more to attract a comparable teacher than the average district. ***Figure 1.6-2*** shows the separate factor indices for the districts with the 10 highest and l0 lowest estimated teacher salaries in the State. Factor indices for all 300 districts are shown in **Appendix 14**.

Figure 1.6-2
Analysis of Variation in Salary Indices
Districts With the 10 Highest and 10 Lowest Predicted Indices
2004-05 School Year

DISTRICT	SALARY INDEX (a)	FACTOR INDICES (b)		
		Cost of Living	*Working Conditions*	*Community Amenities*
STATEWIDE				
Average	**100.0**	100.0	100.0	100.0
Maximum	**109.6**	108.0	107.0	102.1
Minimum	**95.7**	94.2	99.8	94.7
Ten Highest Salary Indices				
500 - Kansas City	**109.6**	**108.0**	**107.0**	**94.7**
501 - Topeka	**108.5**	**104.1**	**106.2**	*98.0*
259 - Wichita	**107.2**	*101.3*	**105.2**	*100.5*
308 - Hutchinson	**105.6**	*100.5*	**104.2**	*100.9*
233 - Olathe	**104.7**	**107.7**	*100.7*	**96.6**
202 - Kansas City-Turner	**104.6**	**108.0**	*102.2*	**94.7**
231 - Gardner-Edgerton-Antioch	**104.5**	**107.7**	*100.0*	**97.0**
230 - Spring Hill	**104.4**	**107.7**	*99.9*	**97.0**
512 - Shawnee Mission	**104.1**	**107.7**	*101.1*	**95.6**
232 - De Soto	**104.1**	**107.7**	*100.0*	**96.7**
Ten Lowest Salary Indices				
446 - Independence	**97.0**	**96.7**	*99.9*	*100.3*
426 - Pike Valley	**96.9**	**96.0**	*99.9*	*101.0*
406 - Wathena	**96.8**	*100.3*	*99.9*	**96.7**
461 - Neodesha	**96.7**	**96.7**	*99.9*	*100.1*
447 - Cherryvale	**96.7**	**96.7**	*99.9*	*100.0*
484 - Fredonia	**96.6**	**96.7**	*99.9*	*100.0*
387 - Altoona-Midway	**96.4**	**96.7**	*99.9*	*99.7*
427 - Republic County	**96.1**	**96.0**	*99.8*	*100.2*
455 - Hillcrest	**96.0**	**96.0**	*99.8*	*100.1*
300 - Comanche County	**95.7**	**94.2**	*99.8*	*101.7*

(a) *[Salary Index] = ([Cost of Living]/100) * ([Working Conditions]/100) * ([Community Amenities]/100) * 100*
(b) Items in bold are at least 2.5% above or below the average.
Source: LPA analysis of teacher salary and labor market data.

As the figure shows, virtually all of the 10 most expensive districts had cost of living indices that were well above the average. In addition, the four most expensive districts had very high working conditions indices (meaning these districts have concentrated poverty). It's also important to note that most of the expensive districts are relatively close to Kansas City. This appears to make these communities more attractive, and reduced their estimated salaries.

On the other hand, the least expensive districts are almost all in areas with low cost of living. The exception was Wathena, which had an average cost of living but had lower estimated salaries because of its proximity to Kansas City.

1.7: COST STUDY RESULTS COMPARED WITH CURRENT STATE AND LOCAL FUNDING LEVELS

This section pulls together the results of the cost estimates derived from our input-based approach (using three different average class-size models), our outcomes-based cost approach, and other work we performed related to Special Education, Vocational Education, transportation, and regional cost variations. It compares these estimates with the State and local funding levels under the current school finance formula. Results by district are shown in ***Appendix 16.***

1. ESTIMATED FOUNDATION-LEVEL COSTS

Our cost estimates show that the additional amount of foundation-level funding needed for 2006-07 would be at least $316.2 million using the input-based approach, and would be $399.3 million using the outcomes-based approach.

Figure 1.7-1 on the next page compares the estimated cost study results and funding amounts under the current school finance formula for each funding category in the General Fund Budget (i.e., base-level, bilingual, and transportation), inflated to 2005-06 and to 2006-07 dollars. In the column labeled "current funding formula," we are assuming that the BSAPP remains at $4,257 for both years.

As the figure shows, for 2006-07 the total estimated General Fund cost using our input-based approach would be at least $3.1 billion. Using the outcomes-based approach, the estimated cost would be $3.2 billion. These estimates are all greater than the amount we estimated would be funded under the current school finance formula ($2.8 billion).

For 2006-07, the figure also shows the additional foundation-level funding that would be needed if any of these estimates were adopted. The additional funding needed under the input-based approach would be at least $316 million. Under the outcomes-based approach, $399 million in new funding would be needed.

Figure 1.7-1
Comparison of General Fund Budgets
Current Funding Formula vs. Cost Study Results
2005-06 and 2006-07 School Years

2006-07	Current Funding Formula	LPA Cost Study Results			
		Input-Based Class Size 25	Input-Based Class Size 18/23	Input-Based Class Size 20	Outcomes-Based
Base-level	$1,916,749,583	$2,034,622,465	$2,207,874,235	$2,298,602,182	$2,097,531,320
Low Enroll/Correlation	$224,226,407	$98,961,136	$95,211,550	$91,043,504	$107,221,777
At-Risk (Poverty)	$111,926,321	$297,943,455	$323,313,878	$336,599,781	$307,155,622
Urban Poverty	---	$52,181,878	$56,625,259	$58,952,155	$53,795,299
Bilingual Education	$21,744,330	$12,347,529	$13,398,944	$13,949,545	$12,729,305
Special Education (a)	$323,071,000	$401,926,010	$401,926,010	$401,926,010	$401,926,010
Vocational Education (a)	$32,449,408	$21,646,723	$21,646,723	$21,646,723	$21,646,723
Transportation (a)	$83,441,506	$69,042,249	$69,042,249	$69,042,249	$69,042,249
Regional Cost Adjustment	---	$41,111,343	$44,109,210	$45,538,910	$41,834,371
New Facilities (b)	$14,815,637	$14,815,637	$14,815,637	$14,815,637	$14,815,637
Ancillary Facilities (b)	$20,941,034	$20,941,034	$20,941,034	$20,941,034	$20,941,034
Declining Enrollment (b)	$2,461,397	$2,461,397	$2,461,397	$2,461,397	$2,461,397
Other Adjustments (b), (c)	$188,526	$188,526	$188,526	$188,526	$188,526
TOTAL GENERAL FUND	**$2,752,015,150**	**$3,068,189,384**	**$3,271,554,653**	**$3,375,707,655**	**$3,151,289,271**
Estimated Additional Foundation-Level Funding	**$0**	**$316,174,234**	**$519,539,503**	**$623,692,505**	**$399,274,121**

2005-06	Current Funding Formula	LPA Cost Study Results			
		Input-Based Class Size 25	Input-Based Class Size 18/23	Input-Based Class Size 20	Outcomes-Based
Base-level	$1,916,749,583	$1,970,025,334	$2,137,776,542	$2,225,623,972	$1,876,006,390
Low Enroll/Correlation	$224,226,407	$95,819,224	$92,188,683	$88,152,968	$95,897,847
At-Risk (Poverty)	$111,926,321	$288,484,063	$313,049,001	$325,913,091	$274,716,237
Urban Poverty	---	$50,525,158	$54,827,467	$57,080,486	$48,113,858
Bilingual Education	$21,744,330	$11,955,508	$12,973,541	$13,506,662	$11,384,935
Special Education (a)	$282,271,234	$374,206,975	$374,206,975	$374,206,975	$374,206,975
Vocational Education (a)	$32,449,408	$20,959,462	$20,959,462	$20,959,462	$20,959,462
Transportation (a)	$80,792,326	$66,850,230	$66,850,230	$66,850,230	$66,850,230
Regional Cost Adjustment	---	$39,621,027	$42,523,715	$43,908,024	$37,736,047
New Facilities (b)	$14,815,637	$14,815,637	$14,815,637	$14,815,637	$14,815,637
Ancillary Facilities (b)	$20,941,034	$20,941,034	$20,941,034	$20,941,034	$20,941,034
Declining Enrollment (b)	$2,461,397	$2,461,397	$2,461,397	$2,461,397	$2,461,397
Other Adjustments (b), (c)	$1,418,733	$1,418,733	$1,418,733	$1,418,733	$1,418,733
TOTAL GENERAL FUND	**$2,709,796,411**	**$2,958,083,784**	**$3,154,992,418**	**$3,255,838,672**	**$2,845,508,783**

(a) LPA developed the estimated costs for these programs and services based on analyses of the costs per student. Because these estimated costs aren't tied to the base-level cost, they don't vary for the different cost study results.
(b) We didn't analyze the need for this funding in our cost studies. We included the same costs for all cost study results because the Legislature has made a policy decision to provide additional funding in these areas.
(c) This is primarily additional funding that is provided to recently consolidated districts.
Source: LPA cost study results.

In reviewing these estimated costs, the reader needs to be aware of the following:

a. Increases in base-level costs generally are offset by decreases in the costs associated with the enrollment weights. The two combined were not significantly higher for the cost study results than the current funding formula. In 2006-07, for example, their combined estimated cost was about the same as the current formula for the input-based approach (class-size 25), and was about 3% higher for the outcomes-based approach. This information is shown below:

	Current Formula	Input-Based (class 25)	Input-Based (class 18/23)	Input-Based (class 20)	Outcomes-Based
Base-level	$1,916.7 mil	$2,034.6 mil	$2,207.9 mil	$2,298.6 mil	$2,097.5 mil
Low enrollment/ Correlation	$224.2 mil	$99.0 mil	$95.2 mil	$91.0 mil	$107.2 mil
Total	**$2,140.9 mil**	**$2,133.6 mil**	**$2,303.1 mil**	**$2,389.6 mil**	**$2,204.7 mil**

Having a higher base and lower weights would result in most smaller districts receiving less State funding under our projections than under the current formula. That's because most of the moneys tied to enrollment weights go to smaller districts.

b. Between 2005-06 and 2006-07, the total estimated cost under the outcomes-based approach would increase by almost 11%, compared with an increase of 3.7% under the input-based approach. Almost all the increase for the input-based approach is because of inflation. The outcomes-based model also grew because of inflation, but increased significantly more because of increases in the testing standards adopted by the Board of Education. Those standards will continue to increase each year through 2013-14, when they are set at 100%. As the standards go up, the cost of meeting them would continue to rise, and as the standards get closer to 100%, it's likely to be even more difficult and more costly to meet them.

c. The additional costs associated with students in poverty accounted for at least $238 million of the estimated increases in foundation-level funding. For example, the estimated cost associated with poverty in 2006-07 for the input-based approach (class-size 25) would be $350 million, and would be $361 million for the outcomes-based approach. Those compare with $112 million under the current formula. This information is shown below:

	Current Formula	Input-Based (class 25)	Input-Based (class 18/23)	Input-Based (class 20)	Outcomes-Based
At-Risk (Poverty)	$111.9 mil	$297.9 mil	$323.3 mil	$336.6 mil	$307.2 mil
Urban Poverty	---	$52.2 mil	$56.6 mil	$59.0 mil	$53.8 mil
Total	**$111.9 mil**	**$350.1 mil**	**$379.9 mil**	**$395.6 mil**	**$361.0 mil**

The costs we project for students in poverty are so much higher than under the current formula because the weights developed using the outcomes-based approach were substantially higher than the current poverty weight. Using actual Kansas spending and student performance data for all districts over five years, our cost study results showed it cost significantly more for students in poverty (measured by the percent of students eligible for free lunches) to achieve any given level of performance than it cost other students to achieve that same level of performance.

The urban poverty weight addresses the increased needs in high-poverty, inner-city districts, where student outcomes are often significantly below standards. For example, at four Kansas City high schools, only about 4%-17% of the 10th grade students were proficient in math last year, compared with a standard of about 47%.

d. The additional costs associated with Special Education accounted for about $75 million of the estimated increases in foundation-level funding. As discussed in Section 1.3, we concluded that the Special Education funding formula significantly overstates the amount of regular education costs districts realistically could avoid or save because students are receiving Special Education services. Our analyses showed that most students who receive Special Education services still spend all or most of their time inside the regular education classroom. For these students, districts' regular education costs wouldn't change at all.

e. Applying the regional cost adjustment to our estimates added at least $41 million to our Statewide projections for 2006-07. The base-level costs in all our cost study models were developed using an average of the average teacher salaries in each district. An adjustment needed to be made to recognize the regional cost differences districts would need to pay for comparable teachers, taking into account such things as cost of living and district working conditions. The results shown in ***Figure 1.7-1*** reflect the fact that districts with the highest regional cost index tended to be the largest districts, which have a high percentage of all the teachers in the State.

2. PERCENT OF FOUNDATION-LEVEL COSTS PAID BY THE STATE

If the State were to fund all the increase in estimated costs, its share of the total foundation-level funding would increase from 80% under the current formula to as much as 83.6%. As noted in the Overview, foundation-level funding for school districts currently comes from a mix of State dollars and what's called local effort, which primarily consists of the Statewide 20-mill property tax levy. Thus, any increases in foundation-level funding can be financed by:

- increasing State funding for school districts.
- increasing the local effort for school districts (by raising the mandatory Statewide 20-mill property tax levy). Each additional mill would bring in an estimated $25.5 million in 2006-07.
- increasing both State funding and the local effort amount.

If the State were to finance all the estimated increase in foundation-level funding, its share as a percent of total foundation-level funding would increase to as much as 83.6%, depending on which cost estimate is used. If the local mill levy were raised to fund all the increase in estimated costs, the State's share would drop from 80% to as low as 65%, and the local effort would increase correspondingly. This information is summarized in ***Figure 1.7-2***.

Figure 1.7-2
Percent of Cost Study Results That Could Be Paid for With State Funding--Two Scenarios
2006-07 School Year

SOURCES OF FUNDING	Current Funding Formula		Input-Based Class Size 25		Input-Based Class Size 18/23		Input-Based Class Size 20		Outcomes-Based	
TOTAL GENERAL FUND										
Amount Funded; Current Formula	$2,752,015,150		$2,752,015,150		$2,752,015,150		$2,752,015,150		$2,752,015,150	
Add'l Est. Amount	$0		$316,174,234		$519,539,503		$623,692,505		$399,274,121	
Total	**$2,752,015,150**		**$3,068,189,384**		**$3,271,554,653**		**$3,375,707,655**		**$3,151,289,271**	
% Funded by the State IF the State Funded All the Additional Estimated Foundation Cost										
State Foundation Funding	$2,198,825,906	*79.9%*	$2,515,000,140	*82.0%*	$2,718,365,409	*83.1%*	$2,822,518,411	*83.6%*	$2,598,100,027	*82.4%*
Local Sources	$542,461,279	*19.7%*	$542,461,279	*17.7%*	$542,461,279	*16.6%*	$542,461,279	*16.1%*	$542,461,279	*17.2%*
Federal (Impact Aid)	$10,727,965	*0.4%*	$10,727,965	*0.3%*	$10,727,965	*0.3%*	$10,727,965	*0.3%*	$10,727,965	*0.3%*
% Funded by the State IF an Increase in the Local Mill Levy Funded All the Additional Estimated Foundation Cost										
State Foundation Funding	$2,198,825,906	*79.9%*	$2,198,825,906	*71.7%*	$2,198,825,906	*67.2%*	$2,198,825,906	*65.1%*	$2,198,825,906	*69.8%*
Local Sources	$542,461,279	*19.7%*	$858,635,513	*28.0%*	$1,062,000,782	*32.5%*	$1,166,153,784	*34.5%*	$941,735,400	*29.9%*
Federal (Impact Aid)	$10,727,965	*0.4%*	$10,727,965	*0.3%*	$10,727,965	*0.3%*	$10,727,965	*0.3%*	$10,727,965	*0.3%*

Source: LPA cost study results.

3. OTHER INCREASES IN STATE AND LOCAL FUNDING THAT WOULD RESULT FROM INCREASING THE FOUNDATION-LEVEL FUNDING

If the Legislature increases the foundation-level funding, districts' local option budgets could increase substantially, and the State would have to pay as much as $30 million to $56 million in additional State Supplemental Equalization Aid. Raising the foundation level of funding would provide additional revenues for districts' general fund budgets, and could increase

their local option budgets. That's because a district's local option budget is based on a percentage of its general fund budget.

If the foundation-level funding is increased significantly, some districts might reduce their local option budgets, but there's no way for us to know whether or to what extent that would happen. ***Figure 1.7-3*** shows the maximum effect of the cost study results if districts' local option budgets would grow at the same rate as the increases in their general fund budgets.

Figure 1.7-3
Maximum Potential Effect of Cost Study Results on Local Option Budgets
2006-07 School Year

2006-07	Current Funding Formula	LPA Cost Study Results			
		Input-Based Class Size 25	Input-Based Class Size 18/23	Input-Based Class Size 20	Outcomes-Based
LOCAL OPTION BUDGETS					
Local Property Taxes (a)	$448,806,294	$503,979,965	$537,563,085	$554,465,264	$516,106,711
State Supp. Equalization Aid					
Under current funding formula	$222,186,876	$222,186,876	$222,186,876	$222,186,876	$222,186,876
Maximum add'l amount	0	$29,987,232	$47,372,120	$56,326,737	$38,017,397
Total Supp. Equalization Aid	$222,186,876	$252,174,108	$269,558,996	$278,513,613	$260,204,273
TOTAL LOCAL OPTION BUDGETS	**$670,993,170**	**$756,154,073**	**$807,122,080**	**$832,978,877**	**$776,310,983**

(a) Maximum effect of cost study results if districts' local option budgets would grow at the same rate as the increases in their general fund budgets.
Source: LPA cost study results.

As the figure shows, such increases would have a secondary impact on State funding, because most districts' local option budgets are subsidized with State Supplemental Equalization Aid. The maximum additional amount of this aid, if any of our estimates were adopted, would range from $30 million to $56 million under the input-based approach, and would be $38 million under the outcomes-based approach.

Finally, ***Figure 1.7-4*** on the next page shows how total State funding from all sources would increase if the foundation-level funding were increased using any of our cost estimates. The totals shown here should be viewed as a maximum as well: they reflect the additional amount the State would pay if it funded all the increase in the foundation-level funding, and if districts' local option budgets would grow at the same rate as the increases in their general fund budgets.

Figure 1.7-4
State Funding for School Districts--All Sources
(If the State Funds All the Additional Foundation-Level Funding)
Current Funding Formula vs. Cost Study Results
2006-07 School Year

	Current Funding Formula	LPA Cost Study Results			
		Input-Based Class Size 25	Input-Based Class Size 18/23	Input-Based Class Size 20	Outcomes-Based
General Fund					
General State Aid	$1,875,754,906	$1,875,754,906	$1,875,754,906	$1,875,754,906	$1,875,754,906
Special Education Aid	$323,071,000	$323,071,000	$323,071,000	$323,071,000	$323,071,000
New State Aid	$0	$316,174,234	$519,539,503	$623,692,505	$399,274,121
Total General Fund	**$2,198,825,906**	**$2,515,000,140**	**$2,718,365,409**	**$2,822,518,411**	**$2,598,100,027**
Districts' Local Option Budgets					
State Supp. Equalization Aid	$222,186,876	$222,186,876	$222,186,876	$222,186,876	$222,186,876
New Supp. Equalization Aid	$0	$29,987,232	$47,372,120	$56,326,737	$38,017,397
Total LOB	**$222,186,876**	**$252,174,108**	**$269,558,996**	**$278,513,613**	**$260,204,273**
Other State Funds					
KPERS Contribution	$175,389,495	$175,389,495	$175,389,495	$175,389,495	$175,389,495
New KPERS Contribution	$0	$18,549,491	$30,304,637	$36,313,619	$23,321,964
Capital Outlay	$19,197,016	$19,197,016	$19,197,016	$19,197,016	$19,197,016
Bond & Interest	$57,724,510	$57,724,510	$57,724,510	$57,724,510	$57,724,510
Miscellaneous (a)	$27,490,524	$27,490,524	$27,490,524	$27,490,524	$27,490,524
Total Other State Funds	**$279,801,545**	**$298,351,036**	**$310,106,182**	**$316,115,164**	**$303,123,510**
TOTAL STATE FUNDING	**$2,700,814,328**	**$3,065,525,285**	**$3,298,030,587**	**$3,417,147,188**	**$3,161,427,810**

(a) Adult Education, Area Vocational Technical School, Driver Training, Food Service, Professional Development, Parent Education, and Tuition Reimbursement
Source: LPA cost study results.

In addition to the increases discussed earlier, this table shows the estimated increases in the KPERS contributions the State makes on behalf of school districts would be at least $19 million under the input-based approach, and would be about $23 million under the outcomes-based approach.

If some or all of the increase in foundation-level funding came from an increase in the local 20-mill property tax levy, and if districts lowered their local option budgets, the State's General Fund and Supplemental Equalization Aid funding amounts would be less than this figure shows.

4. OTHER ISSUES FOR THE LEGISLATURE'S CONSIDERATION

a. The Legislature may want to consider holding harmless those districts that would receive less than their current level of State funding under either the input-based

or outcomes-based approaches. The additional amount it would take to ensure that no district receives less than it does now is shown in ***Appendix 16***; Statewide, the amount it would take to hold all districts harmless for 2006-07 would be as follows:

- Input-based (class-size 25) $35.1 million
- Input-based (class-size 18/23) $ 7.0 million
- Input-based (class-size 20) $ 0.7 million
- Outcomes-based $ 9.4 million

If the Legislature decides to hold school districts harmless, that additional funding also could have a ripple effect in 2006-07 on State funding for State equalization aid and the KPERS contribution the State makes on districts' behalf.

b. The Legislature may want to consider having us provide different "what-if" scenarios using our cost study models. Because K-12 education funding levels ultimately will depend on the Legislature's policy choices, we designed our cost studies to allow different assumptions or decisions to be factored in. Possible variations could include using different average class-size models; using different student performance outcomes; using different assumptions regarding district-level efficiency (such as using the 50th or 25th percentiles); using different assumptions regarding our analysis of the additional costs of Special Education, Vocational Education, or transportation; or applying our regional cost index to all salary costs or total district costs.

c. The Legislature, 2010 Commission, At-Risk Council, and others may want to consider a number of other factors that could impact the amount of State funding for school districts, the student performance results achieved, or the quality of information the Legislature has to make informed decisions. Among the issues we've identified and discussed in this cost study that will need further review:

- Whether there is sufficient accountability to ensure that the additional moneys school districts receive will be used efficiently and effectively, will be used to address the student populations they are intended for, and will result in improved student performance.

- How the State wants to finance any increase in foundation-level funding for school districts. As noted earlier, the Legislature could increase State funding, increase the Statewide mill levy from 20 mills to some higher amount, or do a combination of the two.

- Whether the percent of the additional costs the State pays for Special Education should be reduced from its current statutory level of 92%. If the Legislature adopts our cost estimate, the State would be funding 83% of the non-federally funded share of Special Education costs, which is higher than most neighboring states pay.

- Whether to take any actions to limit the growth in school districts' local option budgets. If the Legislature adopts any of our cost study estimates, the resulting increase in foundation-level funding would allow districts' local option budget—and the State's Supplemental Equalization Aid—to significantly increase, unless local boards of education act to reduce them.

- Whether it would be cost-effective for school districts' internal accounting records to be maintained on a more uniform basis to facilitate cross-district comparisons of detailed expenditures.

- Whether, in reporting expenditure information to the Legislature, the Department of Education should allocate expenditures made by Special Education cooperatives and interlocals to their member districts (as we did for our analyses), so the Legislature will have more comparable information in the future when it looks at expenditures by district.

QUESTION 2: Which Special Needs Students Receive Services, and What Services Are Available to Them?

ANSWER IN BRIEF: Under this question, we were asked to determine whether there was a significant relationship between the students counted for State funding purposes and the students who actually receive those services. For the at-risk program, we found that there's little consistency in which students districts identify as at-risk, or the kinds of services districts classify as at-risk. We also found that the State's method for funding at-risk services has little relationship to the students actually served. For the bilingual program, we found that the number of students counted for funding the program is much lower than the total number of bilingual students districts report serving, and that the State's basis for funding doesn't link funding with need. Under this question, we also provide information regarding the types and variety of services provided to at-risk, bilingual, and Special Education students.

The programs and services discussed under this question are organized as follows:

2.1 At-Risk Programs and Services
2.2 Bilingual Programs and Services
2.3 Special Education Programs and Services

2.1: AT-RISK PROGRAMS AND SERVICES

State at-risk funding is part of a broad effort to provide additional services to students who aren't performing adequately in school. The intent is to help close the achievement gap for these students. Funding for such programs can come from any of the following:

- **State at-risk weighting under the school finance formula.** This source provides funding for additional educational services for students who have been identified as underperforming. Some of the money must be spent on reading programs.

- **Federal Title I.** This source provides funding to improve the quality of education in high-poverty schools, or to give extra help to struggling students. Funding can be used to serve individual students, or for activities that upgrade an entire school (if at least 40% of the students in the school are low-income). In addition, some money must be spent on parent activities and for professional development for teachers and paraprofessionals.

- **Various federal programs and grants.** These typically provide funding for specific academic initiatives—such as reading—or for services to particular groups of students. For example, Emporia received a federal 21st century community learning center grant, which it used to fund a program called QUEST. This program provided tutoring and other academic support to at-risk students after school.

BACKGROUND: AT-RISK PROGRAM REQUIREMENTS

Statutory requirements. Current State law requires districts to use 5.2% of their State at-risk funding for services to help students master basic reading skills by the end of the 3rd grade.

Kansas Department of Education guidelines. These guidelines indicate that State at-risk money must be spent on services for **identified at-risk students**. The Department has provided districts with a list of indicators for identifying students who are eligible for at-risk services. Those indicators include:

- not meeting the requirements necessary for promotion to the next grade
- not meeting the requirements necessary for graduation from high school
- not working at grade level (for example, a student in 6th grade performing at a 5th grade level)
- being held over in the same grade

These indicators are presented as guidance only; school districts are allowed to develop their own criteria for identifying at-risk students. Beginning with the 2005-06 school year, the Department's guidelines also require districts to use some form of diagnostic assessment or evidence-based educational criteria to identify at-risk students. These could be things such as results of State or local assessment tests, or records of academic performance. In addition, Special Education students became eligible that year for at-risk services, so long as those services are not the same services being funded with Special Education funds.

State at-risk funding also can be spent only for **services that are above and beyond what is offered to all students**. For example, a district that offers all-day kindergarten (instead of the half day that's required) could use State at-risk funding only for the additional half day, and then only for those students in the class who are identified as at-risk. The remainder of program expenses would have to be paid from other sources.

Within those guidelines, districts can design their programs based on the needs of at-risk students and the resources available. For example, a district could offer services as varied as before- or after-school tutoring programs in math; elementary school reading programs; or an alternative high school.

Department oversight. The Department audits districts' reported at-risk expenditures each year to ensure that they spent at least as much money on approved at-risk services as they received in State at-risk funding. Occasionally the Department conducts "on-site" reviews at a few districts, checking for whether the district:

- has documented the criteria for determining students' eligibility for at-risk services
- can provide a list of students receiving at-risk services
- has spent 5.2% of State at-risk funding to help students master basic reading skills by the end of the 3rd grade

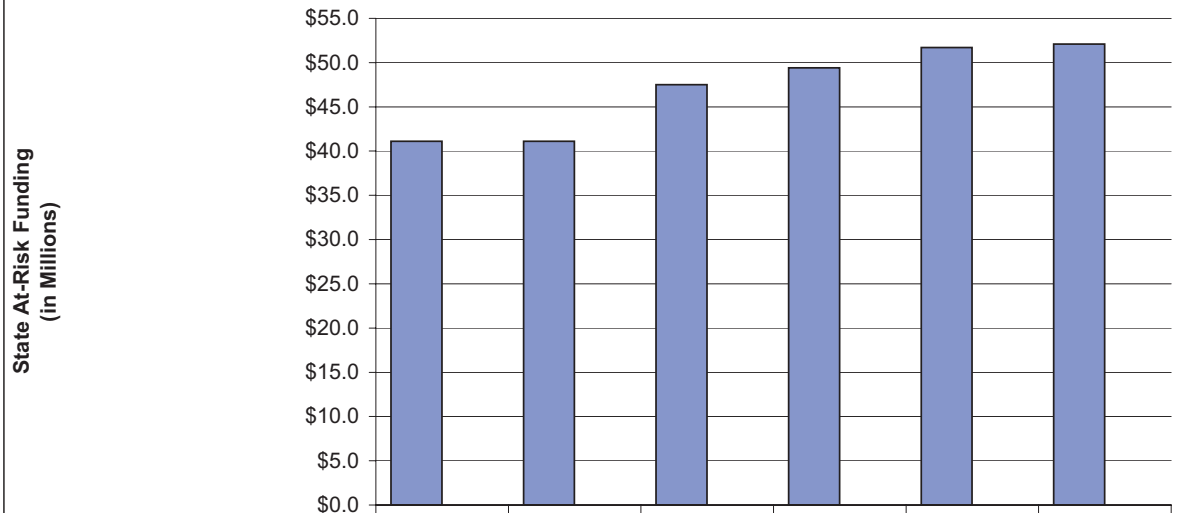
BACKGROUND: NUMBER OF STUDENTS FUNDED FOR AT-RISK PROGRAMS AND SERVICES

State funding for at-risk programs is provided through a separate weight in the State education funding formula. Under the current formula, for each student who is eligible for free lunches under the National School Lunch Act, the State pays districts an additional 19.3% of the Base State Aid Per Pupil (BSAPP). For the 2005-06 school year, this weight generated an additional $822 in State funding for each free-lunch student.

Figure 2.1-1 shows how the count of free-lunch students has changed over the past six years, and the amount of State funding districts have received based on this student count. As the figure shows, for the 2004-05 school year the State distributed $52 million in at-risk funding to school districts. Every district received at least some State funding, ranging from $4,249 for Nes Tre La Go to $10.1 million in Wichita.

The 2005 Legislature increased the at-risk weight from .10 to .193. Under the revised weight for 2005-06, districts will receive an estimated $111.2 million, or more than double the previous year's amount.

Figure 2.1-1
State At-Risk Funding (a)
1999-00 to 2004-05



	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Funding (in Millions)	$41.1	$41.1	$47.5	$49.4	$51.7	$52.1
Students Eligible for Free Lunch	107,248	109,650	113,881	121,928	129,885	134,811

(a) Adjusted for inflation to 2004-05 dollars. Source: Department of Education data.

BACKGROUND: REPORTED AT-RISK PROGRAM EXPENDITURES

Until 2005-06, there was no separate accounting fund for districts to deposit their at-risk funding or record their at-risk expenditures. As a result, uniform historical accounting information for districts' at-risk programs is not available.

Each year, however, districts are required to report the amount they spend on at-risk programs and services to the Department on a document called the "local consolidated plan." That information is supposed to include all actual at-risk expenditures, and the Department uses this information to report summary statistics. Districts reported that they spent $61.5 million on at-risk programs in 2003-04, the most recent year for which those data were available.

RESULTS: COMPARING STUDENTS COUNTED FOR FUNDING PURPOSES WITH THE STUDENTS WHO ACTUALLY RECEIVED AT-RISK SERVICES

To make these comparisons, and to get a better handle on district services and expenditures for at-risk programs, we selected 11 districts to review in detail. Our selection was based on an analysis of the expenditure, student count, and other data districts had reported to the Department of Education for 2003-04. Our sample included districts that had reported a large population of students who were either at-risk or eligible for free lunches, or had reported very high costs per at-risk student served. Our sample districts are shown on ***Figure 2.1-2.***

We visited all 11 districts, and obtained and analyzed detailed student count, activity, and expenditure information for each one. The results of our work are summarized below:

1. NUMBER OF STUDENTS SERVED

Districts have not reported this number on a uniform, consistent basis. In 2003-04, the latest school year for which information was available, districts reported to the Department of Education that they served nearly 143,000 at-risk students. However, testwork in our sample districts showed they don't report the number consistently. Some reported the number of students eligible for free lunches, others reported students participating in State-funded at-risk programs only, and others reported students participating in all at-risk programs. These reported figures also aren't audited by the Department.

Districts' definitions of which students actually qualify for at-risk services also varies widely across the State, which can impact their reported number of at-risk students. Although all districts in our sample listed a number of "academic delay" measures as criteria that would make a student eligible for at-risk services, each also had their own mix of social characteristics that they used to identify at-risk students, such as socioeconomic status (qualifying for free or reduced-price lunches), juvenile offender status, having a single parent, being re-

ferred by SRS, having certain medical conditions, and being a bilingual or migrant student. And as noted earlier, districts decide which activities they count as at-risk services.

2. RELATIONSHIP BETWEEN FUNDING AND SERVICES

The State's basis for funding at-risk services has little relationship to the number of students who receive at-risk services. Poverty serves as the basis for funding the at-risk program, but lack of academic progress is the basis for receiving services under the program. During 2003-04, 129,885 students were eligible for free lunches, compared with the nearly 143,000 at-risk students districts reported they served. On their face, these numbers seem fairly similar.

To determine whether there is a significant relationship between the students counted for funding purposes and the students who receive at-risk services, we asked our sample districts for lists of students who qualified for free lunches, and of students who had received at-risk services during the 2004-05 school year. We asked them to report students who participated in any at-risk program offered by the districts, not just the State-funded programs, because we found that a district's decision about which programs to fund with different funding sources is largely just an accounting issue.

We compared these lists of students in two ways:

- total headcount of free-lunch students to total headcount of students receiving at-risk services
- names of free-lunch students to names of students receiving at-risk services

Figure 2.1-2 shows the results of our comparisons. The fact that districts define who is eligible for services, as well as which activities they count as at-risk services, makes it difficult to make meaningful comparisons among districts. Nonetheless, two points stood out clearly:

- **The small districts in our sample provided at-risk services to far fewer students than the number of students counted for funding purposes, and they tended not to be the same students.** Under "Comparison 1: Headcounts" on the figure, for example, Stafford provided at-risk services to 73 students, but the district had 147 free-lunch students who served as the basis for funding purposes. Under "Comparison 2: Names," we found that only 57 of these 147 students (39%) both qualified for free lunches AND received at-risk services.

- **Several of the larger districts identified all students who qualify for free lunches as being eligible for and receiving at-risk services.** This resulted in a large number of students being reported as receiving at-risk services. The larger districts had a more difficult time providing us with lists of specific at-risk students who had received services, generally because they provide school-wide services—such as reducing class size—in their high-poverty schools.

Figure 2.1-2
Comparing Students Receiving At Risk Services To Students Counted for At-Risk Funding 2004-05

District #, Name	# Students eligible for Free Lunches 9/20/2004	**Comparison 1: Headcounts** of Students Receiving At-Risk Services with Free-Lunch Students		**Comparison 2: Names** of Students Receiving At-Risk Services with Free-Lunch Students	
		# Students receiving At-Risk Services	Difference (# served minus # free lunches)	Students who got At-Risk services AND free lunches	% match (a)
326 Logan	63	47	16 fewer	13	21%
217 Rolla	94	59	35 fewer	28	30%
349 Stafford	147	73	74 fewer	57	39%
404 Riverton	255	39	216 fewer	13	5%
253 Emporia	2,279	1,876	403 fewer	1,134	50%
480 Liberal	2,593	2,949	356 more	2,593	100% (b)
457 Garden City	3,511	4,770	1,259 more	1,756	50%
512 Sh. Mission	3,654	6,609	2,955 more	2,205	60%
443 Dodge City (c)	4,004	4,976	972 more	4,004	100% (b)
500 Kansas City	12,593	17,708	5,115 more	12,593	100% (b)
259 Wichita	25,389	39,290	13,901 more	25,389	100% (b)

Source: LPA analysis of data reported by sample districts.
(a) Percent of students eligible for free lunches who also received at-risk services.
(b) These districts say that all free-lunch students are at risk, and all of them receive at-risk services.(c)
(c) Excludes 4-year-old At-Risk program (124 students)

OTHER RESULTS: SERVICES AND EXPENDITURES

3. VARIATIONS IN AT-RISK SERVICES PROVIDED

The most common types of at-risk services for specific students included after-school activities, special reading and math programs, alternative school settings, and counseling services. These are described below:

- **After school activities, such as tutoring in reading or math** - Nine of 11 districts in our sample reported they provided this type of service, which typically involves regular education teachers as an extra duty. For example, Emporia provides an "Extended Learning" program focused on math and reading, and students referred to the program are required to attend.

- **Special reading and math programs offered during regular school hours** - Nine of our 11 sample districts reported offering these services, which generally made use of specialized teachers or paraprofessionals. For example, officials at the elementary school level in Kansas City offer a program called "Reading Is Fundamental."

- **Alternative school settings (mainly high schools)** - Eight of our sample districts reported operating or sharing in the cost of an alternative school. Enrollment levels for the districts we visited ranged from about 40 students to about 200 students. These schools generally made extensive use of computers, had small class sizes, and were largely self-paced for the students. For example, in cooperation with three neighboring school districts, Riverton shares costs for an alternative high school called Cornerstone. If needed, Riverton can refer up to 12 students to this alternative school.

- **Counseling services** - Eight sample districts offered these services, which address a variety of needs, including academic, social, nutritional, and family issues. Often these services were offered in a group setting, and weren't limited to students identified as at-risk.

We also saw at-risk services that were unique among our sample districts. Examples of some of those services include:

- **Therapeutic education center** – Dodge City is one of 14 districts belonging to a cooperative that provides a mental health day school to serve at-risk students before and after a stay at Larned State Hospital.

- **Kid Zone** – Kansas City offers this program before and after school for kids who have no safe place to go. The program provides academic supplies and recreation.

- **Transportation** – Kansas City provides transportation for migrant students to and from after-school programs held at El Centro, a community organization providing services to migrant families.

- **Free lunch during summer**– Stafford provides lunch for children (ages one to 18) in the summer, whether or not they are enrolled in school.

- **Junior ROTC** – Officials in Wichita describe this program as a character-building and leadership program that's intended to help students connect with their school, and that involves community service activities.

Some districts also used at-risk moneys for global programs intended to serve <u>all</u> students in school buildings with a significant number of students considered to be at-risk. Examples of such programs include:

- **Class-size reduction** - Generally, additional teachers are hired to reduce the number of students in each class. Of the districts included in our sample, Emporia, Kansas City, Liberal, Riverton, and Wichita each reported using class-size reduction as a method to provide services to at-risk students.

- **Full-day kindergarten** - State law requires half-day kindergarten, but some districts have chosen to provide full-day kindergarten for all kindergarten-aged students. Districts in our sample providing all-day kindergarten included Dodge City, Emporia, Riverton, Shawnee Mission, Stafford, and Wichita.

4. EXPENDITURES FOR AT-RISK PROGRAMS

In providing at-risk services, our sample districts spent much more than they received in State at-risk funding. Before the current school year, all at-risk moneys districts received from the State were deposited into each district's General Fund, which made accounting for at-risk expenditures difficult. Beginning with the 2005-06 school year, districts are required to place all moneys they receive for at-risk plans or programs, regardless of source, into a newly created At-Risk Education Fund. In addition, all expenses for providing at-risk programs and services are required to be paid from this Fund.

We asked our sample districts to report all expenditures they made to provide at-risk services, regardless of funding source. We reviewed those expenditures to ensure they were reasonably related to the at-risk program, and represented direct costs of the programs. We removed indirect costs (such as allocations of administrative salaries or utilities) when we were able to identify them, but we did not review detailed expenditure documentation.

As shown in ***Figure 2.1-3,*** districts reported spending far more on at-risk services than they received in State at-risk funding. Our expenditure reviews showed that, in addition to

Figure 2.1-3
State At-Risk Funding and Total Spending Reported
2004-05

		Expenditures districts reported to us...			
District #, Name	State At-Risk Funding	Total Expenditures for at-risk services	At-Risk State Funding as a % of Total Expenditures	expenditures made from...	
				General Fund	All Other Funds
326 Logan	$ 25,496	$ 68,361	37%	$ 51,462	$ 16,899
217 Rolla	$ 36,699	$ 79,956	46%	$ 36,699	$ 43,257
349 Stafford	$ 56,786	$ 172,980	33%	$ 100,019	$ 72,961
404 Riverton	$ 110,096	$ 192,935	57%	$ 106,751	$ 86,184
253 Emporia	$ 888,876	$ 3,438,096	26%	$ 1,292,232	$ 2,145,864
480 Liberal	$ 973,090	$ 3,336,437	29%	$ 991,079	$ 2,345,358
512 Sh. Mission	$ 1,292,560	$ 10,697,741	12%	$ 7,939,608	$ 2,758,133
443 Dodge City	$ 1,316,510	$ 6,760,166	19%	$ 2,051,031	$ 4,709,135
457 Garden City (a)	$ 1,346,642	$ 1,376,963	98%	$ 1,376,963	n/a
500 Kansas City (a)	$ 4,894,807	$ 5,544,000	88%	$ 5,544,000	n/a
259 Wichita	$ 10,139,216	$35,091,000	29%	$ 12,644,863	$ 22,446,137
TOTALS	$ 21,080,778	$ 66,758,635	32%	$ 32,134,707	$ 34,623,928

Source: LPA analysis of data reported by sample districts.
(a) These districts reported it would be difficult to determine exactly how much they spent from other funds to provide at-risk services.

the types of programs described on the previous page, some districts included programmatic activities that weren't educational in nature or didn't involve one-on-one services to students. For example:

- Wichita reported nearly $600,000 in security officer salaries as an at-risk expense
- Shawnee Mission reported salary costs of about $830,000 for staff who meet weekly to discuss and make plans for at-risk students and programs

Sources for the additional spending districts reported included federal grant moneys (most commonly from Title I), other gifts and grants (for example, a grant to one district from the Kansas Alliance of Black School Educators), and the districts' General Funds. For the districts that reported expenditures from other funds, State at-risk aid accounted for only about 30% of their total at-risk expenditures.

About 93% of at-risk expenditures our sample districts reported to the Department were for salaries and benefits. This reflects only a portion of their total expenditures, because most of these districts only reported how they spent their State at-risk moneys. During our visits to districts, officials told us they use at-risk moneys (from all sources) for salaries and benefits for full-time teachers and paraprofessionals dedicated to at-risk services (such as for special reading programs), as well as for the following:

- salaries for regular teachers providing at-risk services after hours (such as for tutoring)
- summer school teachers
- teachers and staff for alternative high schools
- materials and supplies (often for specialized reading programs like Fast ForWord)
- training staff in specialized programs

Most of our sample districts said they would spend the additional at-risk funding they received in 2005-06 to initiate or expand at-risk services. State at-risk funding will more than double for the 2005-06 school year as a result of actions by the Legislature during the 2005 special legislative session. As noted earlier, districts are projected to receive $111.2 million total in State at-risk funding, compared to the $52 million they received for 2004-05. ***Figure 2.1-4*** shows the ways in which districts told us they plan to spend the increased funding.

Figure 2.1-4
How Districts Intend to Spend the Additional At-Risk Funding They Received for 2005-06

USD #, District	Hire Staff	Increase Salaries	Purchase Supplies	Replace Funding (a)	Begin or expand programs...			
					After School Programs	All-Day Kindergarten	Summer School	Counseling Services
326 Logan			x	x	Expand			
217 Rolla		x	x					
349 Stafford			x		Expand			Expand
404 Riverton					Expand			
253 Emporia						Expand	Expand	Expand
480 Liberal	x							Expand
443 Dodge City			x	x		Expand	Expand	
512 Sh. Mission	x							
457 Garden City					Begin	Begin	Expand	
500 Kansas City		x						
259 Wichita	x	x	x			Expand		
Total reporting this choice:	3	3	5	2	4	4	3	3

(a) "Replace funding" means reducing reliance on funding from other sources.

Source: District responses to LPA survey

2.2: BILINGUAL PROGRAMS AND SERVICES

State and federal laws require school districts to provide language-support services to students who aren't proficient in English based on the results of a standardized language assessment. Most recently, the No Child Left Behind Act has required states to establish standards and benchmarks for raising English proficiency. Districts may receive both State and federal funds to provide services to students with limited English proficiency, as follows:

State bilingual funding. Districts that operate a State-approved bilingual program (described below) are eligible for State funding for the time students spend with "bilingual-endorsed" teachers.

Federal Title III. Districts are eligible if they can show they have enough bilingual students to qualify for $10,000 in aid from this federal program. (At the current rate, it would take about 110 students.) To reach that minimum, districts can enter into cooperative agreements with other districts.

Other sources. Districts that receive federal funding for migrant and refugee programs can use some of these moneys for language services. In addition, some districts have received special federal grants for specific programs.

During 2004-05, a total of 81 districts received State bilingual education funding, and estimated that they provided services to 24,524 students. According to the most recent Department of Education data, the most common first language spoken was Spanish, accounting for 82% of the students reported. The next most common languages were Vietnamese and Low German, each of which accounted for about 3% of the students. In all, Kansas districts reported 132 different first languages.

Many names and acronyms are used in referring to these students and the services they receive. For example, students sometimes are referred to as English Language Learners (ELLs) or as being Limited English Proficient (LEP). Services are sometimes called English as a Second Language (ESL) or English for Speakers of Other Languages (ESOL) services. Because the State's program and the participating students historically have been referred to as "bilingual," we are using that term in this report to encompass all these names and acronyms.

BACKGROUND: BILINGUAL PROGRAM REQUIREMENTS

To have a State-approved program and be eligible for State bilingual funding, districts must do the following:

Identify and assess students. Kansas Board of Education procedures require districts to give students a questionnaire to determine what language is spoken in the student's home and what the student's first language is. If the answer to either of these isn't English, the student's English proficiency must be assessed.

Develop a program and implement it. The Department has set curricular standards for bilingual students. These standards are intended to help districts gauge a student's proficiency for listening, speaking, reading, and writing English, and also to provide instructional strategies for teachers.

Have specially trained teachers. Districts receive State bilingual funding only for the time students spend with "ESL-endorsed" teachers, or teachers who are actively working toward an ESL endorsement, or paraprofessionals supervised by these teachers. To become endorsed, teachers must take a series of 5 or 6 university-level courses on issues and methods involved in working with culturally and linguistically diverse students, and must pass an examination. Any teacher can become endorsed, not just those who speak a foreign language.

Measure student progress and assess proficiency. Districts must establish procedures to monitor a student's progress while receiving ESL services. After a student becomes proficient in English, he or she exits the program and is also monitored, generally for two years.

Provide notification to the parents in their native language. To adequately notify non-English speaking parents of school activities, all notices sent home must be in English and in the parent's native language.

BACKGROUND: NUMBER OF STUDENTS FUNDED FOR BILINGUAL PROGRAMS AND SERVICES

Kansas provides funding to districts that meet State requirements for a bilingual program through a separate weight in the State's education finance formula. State funding is paid only for the "contact" hours bilingual students have with an ESL-endorsed teacher or a paraprofessional supervised by an ESL-endorsed teacher. Six contact hours represents one FTE bilingual student.

Under the current formula, for each FTE bilingual student the State pays districts an additional 39.5% of the Base State Aid Per Pupil (BSAPP). For 2005-06, this weight generated an additional $1,682 in State funding for each FTE bilingual student.

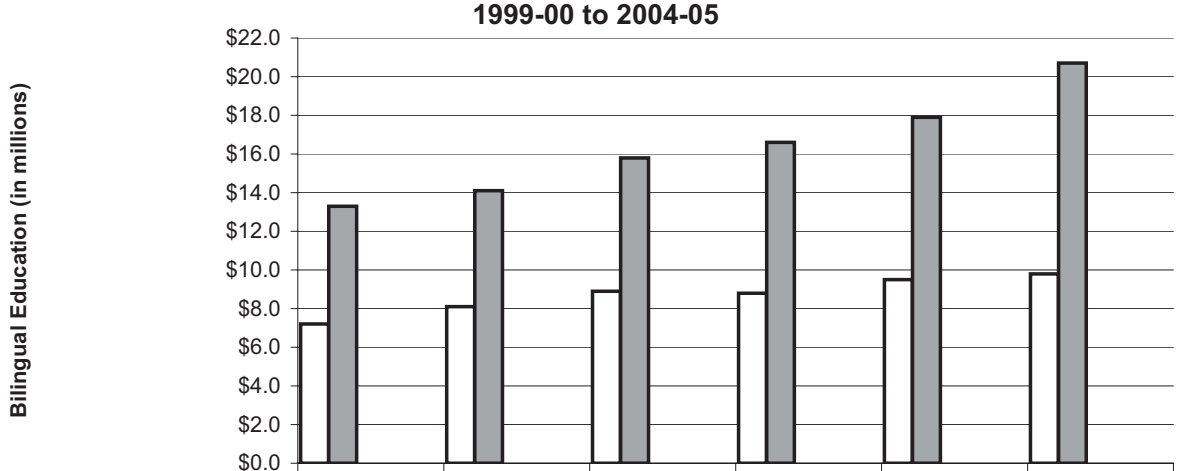
Figure 2.2-1 shows the trend in the amount of State funding provided to cover bilingual program costs, districts' reported expenditures for those programs, and the count of FTE bilingual students. As the figure shows, for the 2004-05 school year the State distributed $9.8 million in bilingual funding to school districts.

The 2005 Legislature increased the bilingual weight from .20 to .395. Under the revised weight for 2005-06, districts will receive an estimated $22.5 million, which is more than double the previous year's funding.

BACKGROUND: REPORTED BILINGUAL PROGRAM EXPENDITURES

During the 2004-05 school year, districts spent $20.7 million from their Bilingual Education Funds, where all expenditures for bilingual students are supposed to be recorded (except for expenditures from federal funds). These reported expenditures are shown on ***Figure 2.2-1.***

Figure 2.2-1
State Bilingual Funding and Expenditures (a)
1999-00 to 2004-05



	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
State Bilingual Funding	$7.2	$8.1	$8.9	$8.8	$9.5	$9.8
Expenditures	$13.3	$14.1	$15.8	$16.6	$17.9	$20.7
Reported Headcount	18,672	20,129	21,288	22,034	24,102	24,524
Bilingual FTE	8,461	9,752	10,632	10,812	11,940	12,652
Districts Funded	61	62	62	65	72	81

(a) Adjusted for inflation to 2004-05 dollars.
Source: Department of Education data.

RESULTS: COMPARING STUDENTS COUNTED FOR BILINGUAL FUNDING PURPOSES WITH THE STUDENTS WHO ACTUALLY RECEIVED SERVICES

To make these comparisons, and to get a better handle on district services and expenditures for bilingual programs, we selected 10 districts to review in detail. Our sample included districts that reported having a large number of bilingual students, or had high bilingual expenditures in total or per student during 2003-04. These districts, which accounted for 68% of the FTE bilingual students that year, are shown on ***Figure 2.2-2.***

We visited 8 of the10 districts, and obtained and analyzed detailed student count, activity, and expenditure information for all 10 districts. Here are the results of our work:

1. NUMBER OF STUDENTS SERVED

Districts have not reported this number on a uniform, consistent basis. During this cost study, we heard that some districts with small numbers of bilingual students weren't reporting those students to the Department. For the 2003-04 school year, 229 districts reported they had no bilingual students. Although we didn't try to verify this information, the 2000 Census shows that 114 of these 229 districts had households with school-age children

where English wasn't spoken well. These Census data reflect a slightly different time period, but it seems unlikely that none of these 114 districts had any bilingual students.

In addition, the bilingual students that districts do report aren't always reported consistently. Although those numbers can fluctuate from year to year for legitimate reasons, Department officials noted that these figures are self-reported and aren't audited, that pre-kindergarten students sometimes were included and sometimes not, and that definitions changed slightly one year.

2. RELATIONSHIP BETWEEN FUNDING AND SERVICES

Funding bilingual education based on service contact hours doesn't link funding with need. State bilingual funding is distributed based on the number of minutes that bilingual services are provided by "endorsed" teachers or by paraprofessionals who are supervised by such teachers. However, districts are reimbursed for a small portion of the time bilingual students are in the classroom. This information is shown in ***Figure 2.2-2.***

Figure 2.2-2
Comparing FTE Bilingual Students to Students Receiving Bilingual Services, and Showing State Bilingual Funding per Bilingual Student Served
2004-05

District #, Name	State bilingual funding	Bilingual FTE used to calculate bilingual funding	# Students receiving services	State bilingual $/student served
266 Maize	$5,408	7.0	104	$ 52
418 McPherson	$ 1,159	1.5	15	$ 77
457 Garden City	$ 751,740	973.0	2,008	$ 374
405 Lyons	$ 41,720	54.0	102	$ 409
500 Kansas City	$ 1,362,519	1,763.5	4,063	$ 335
259 Wichita	$ 2,258,696	2,923.5	5,342	$ 423
253 Emporia	$ 565,157	731.5	1,235	$ 458
480 Liberal	$ 640,485	829.0	1,296	$ 494
443 Dodge City	$ 1,395,316	1,806.0	2,766	$504
217 Rolla	$ 23,951	31.0	37	$ 647

Source: LPA analysis of data provided by sample districts.

The information presented in this figure raises two issues:

Even though districts are required to provide services to all bilingual students, the current funding formula treats them very unequally. As the figure shows, McPherson received a negligible amount of State bilingual funding, both in total and on a per-student basis, for the 15 bilingual students it served. During 2004-05, the district had one ESL-endorsed teacher, who traveled between elementary schools working with students one-on-one, and who provided one high-school-level class. Although the district incurred additional costs in providing these services, those services resulted in very few "countable" minutes for funding purposes.

In contrast, Rolla, with 38 bilingual students, received the highest level of State funding per student of any of the districts in our sample. Many of Rolla's teachers had an ESL endorsement during 2004-05. Here's an example of why that matters: an elementary teacher with an ESL endorsement who has one bilingual student in class all day generates bilingual funding nearly every minute of every day. The student is likely receiving what is called "modified instruction," which means the teacher is adapting instruction in some way to make the content more comprehensible.

Even though these districts have the same responsibility for educating their bilingual students, the State provides them with very different resources for doing so.

Districts may not get funded for all the bilingual services they provide. Paraprofessionals provide services to many bilingual students—in some cases a paraprofessional may be the only person who speaks the student's first language. However, districts may not be able to claim funding for all services paraprofessionals provide. For example, officials from Lyons said that, although paraprofessionals provide services to students in the high school and in pre-kindergarten, they couldn't claim funding for their services because they didn't have endorsed teachers at those levels to supervise the paraprofessionals.

In addition, some districts have an influx of students–particularly migrant students–after the official student count date for funding. Migrant students and their families move to or from an area based on the availability of work. For example, Liberal officials told us that 83 bilingual students enrolled after the September 20 count date. They were required to serve those students, but received no funding for them.

Neighboring states fund bilingual services based on headcount, not on service time provided. Oklahoma, Colorado, Missouri, Nebraska, and Iowa all base bilingual funding on headcount enrollments for bilingual students, not on the time they spend with an endorsed teacher. These states generally calculated bilingual aid by multiplying headcount by a weighting factor, and then by a base-level of state aid. (The bilingual weighting generated by our outcomes-based approach also uses headcounts of students, not contact hours.) Iowa and Colorado limit state funding to three and two years, respectively.

OTHER RESULTS: SERVICES AND EXPENDITURES

3. VARIATIONS IN BILINGUAL SERVICES PROVIDED

Districts use a wide variety of methods to provide English language services. This variation is summarized in ***Figure 2.2-3***. The types of bilingual services provided depend on the number of bilingual students, how proficient they are in English, the number of endorsed teachers or paraprofessionals, and the overall financial resources available.

Figure 2.2-3
Methods for Delivering Bilingual Services
2004-05

	Dodge City	Emporia	Garden City	Kansas City	Liberal	Lyons	McPherson	Maize	Rolla	Wichita
Number of Bilingual Students Served	2,766	1,235	2,008	4,063	1,296	102	15	104	37	5,342
Bilingual Students served as a % of district enrollment	46%	25%	26%	20%	28%	11%	1%	2%	16%	11%
Pull-Out: The bilingual student is pulled out of a regular education class to receive instruction from a qualified teacher (an ESL-endorsed teacher or a paraprofessional assisting an ESL-endorsed teacher).	X		X	X	X	X	X	X	X	X
Push-in: An ESL-endorsed teacher comes into the regular classroom to give language assistance to the bilingual student		X	X			X				X
Modified Instruction: A regular education teacher who has an ESL endorsement "modifies" instruction so that the academic content is comprehensible.	X	X	X	X		X			X	X
Sheltered Instruction: The class is comprised solely of bilingual students and the academic subject matter is provided through "sheltered" or adapted instruction to teach both English and the academic content material.	X	X	X	X		X				X
ESL Class Period: Used in the secondary school setting, students receive ESL instruction during a regular class period and receive course credit.	X	X	X	X	X	X	X	X	X	X
Paraprofessional Support: An aide (preferably one who speaks the child's first language) provides instruction to the student in the classroom, and may provide individual language lessons outside the classroom.	X	X	X	X	X	X		X		X
Bilingual: All the students speak the same first language, and instruction is provided in their native language, with the gradual introduction of English. **Dual Language:** Both native English and non-English speaking students are in the same class. Half the instruction is in English and half in the non-English language.	X	X	X							X

Source: LPA survey of school districts.

For example, because McPherson has 15 bilingual students scattered throughout grade levels and different buildings, it provides many of its students with one-on-one assistance with an endorsed teacher for approximately one hour per week. By contrast, in Dodge City, where 46% of students were classified as bilingual in 2004-05, many students participate in sheltered instruction–classes comprised solely of bilingual students where the presentation of the subject matter is adapted to teach both English and academic content material.

4. EXPENDITURES FOR BILINGUAL PROGRAMS

In providing bilingual services, our sample districts spent much more than they received in State bilingual aid. State law requires that all expenditures for bilingual services, regardless of funding source, be recorded in the Bilingual Education Fund. The only exception is spending from federal funds, which usually is reported separately (although Emporia and Kansas City both reported federal fund expenditures in their Bilingual Education Funds). We found that districts don't report their bilingual spending consistently, which makes it difficult to compare expenditures per student.

We asked our sample districts to report all expenditures they made to provide bilingual services, regardless of funding source. We reviewed those expenditures at a high level to ensure they were reasonably related to providing bilingual services, and represented direct costs to the programs. We removed indirect costs (such as allocations of administrative salaries or utilities) when we were able to identify them. We did not review detailed expenditure documentation.

As ***Figure 2.2-4*** shows, our sample districts reported spending more on bilingual services than they received in State bilingual funding. In general, they told us they used General Fund or federal moneys to pay for their programs. Most often the additional moneys districts reported spending were federal funds, such as Title III, which must be spent to provide services to bilingual students.

Most of the bilingual expenditures our sample districts reported were for salaries and benefits. Across the State, all districts with bilingual programs reported that 94% of expenditures were for salaries and benefits. For the 10 districts in our sample it was 89%. Non-salary expenses were generally for tuition and professional development for staff, classroom books/supplies for students, and computers.

Most of our sample districts said they would spend the additional bilingual funding they received in 2005-06 to hire more staff. State bilingual funding more than doubled, from $9.8 million in 2004-05 to $22.5 million, for the 2005-06 school year as a result of actions by the Legislature during the 2005 special legislative session.

Figure 2.2-4
Expenditures for Bilingual Services
2004-05

				Reported Expenditures	
District #, Name	State Bilingual Funding	Total Reported Expenditures	State Bilingual Funding as % of Total Expenditures	Expenditures from Bilingual Fund	Expenditures from other funds
418 McPherson	$1,159	$57,256	2%	$52,673	$4,583
266 Maize	$5,408	$99,567	5%	$98,840	$727
217 Rolla	$23,951	$81,527	29%	$80,117	$1,410
405 Lyons	$41,720	$189,245	22%	$189,245	$0
253 Emporia	$565,157	$1,342,662	42%	$1,318,548	$24,114
480 Liberal	$640,485	$1,044,172	61%	$920,674	$123,498
457 Garden City	$751,740	$1,179,685	64%	$1,029,029	$150,656
500 Kansas City	$1,362,519	$1,949,350	70%	$1,949,350	$0
443 Dodge City	$1,395,316	$1,669,654	84%	$1,394,929	$274,725
259 Wichita	$2,258,696	$6,121,075	37%	$5,548,168	$572,907
Totals	$7,046,151	$13,734,193	51%	$12,581,573	$1,152,620

Source: LPA analysis of data provided by sample districts.

Figure 2.2-5 shows that some districts plan to hire more staff—including teachers, para-professionals, and translators—to work with bilingual students. Two districts with small programs, Maize and Rolla, said they would use the additional money to reduce the amount they currently draw from their General Funds.

Figure 2.2-5
How Districts Plan To Spend Additional Bilingual Funding

District #, Name	Hire More Staff	Rely Less on Other Funds	Staff Training	Salary Increases	Text Books & Supplies	New Programs
418 McPherson				X		
266 Maize		X				
217 Rolla		X				
405 Lyons	X				X	
253 Emporia	X			X		
480 Liberal						Initiate: Dual language program, sheltered instruction & immersion class. Adopt bilingual curriculum in middle schools
457 Garden City	X	X				Expand summer school; more tutoring before and during school; after-school program at all grade levels
500 Kansas City	X		X			
443 Dodge City	X				X	
259 Wichita	X		X			New intake center; expand programs in neighborhood schools
Total	6	3	2	2	2	3

Source: LPA survey of the school districts

2.3: SPECIAL EDUCATION PROGRAMS AND SERVICES

Background information on program requirements, students served, expenditures, and funding and distribution for Special Education are discussed in Question 1, Section 1.3. This section focuses on program service issues.

DESCRIPTION OF SPECIAL EDUCATION PROGRAMS AND SERVICES

1. WHO PROVIDES THE SERVICES

Most districts contract with a cooperative or interlocal to provide Special Education services. School districts are responsible for providing appropriate educational services to their students, and have several options for doing so. These include:

- providing Special Education services with their own teachers (stand-alone district)
- contracting with a private entity, such as a residential facility
- joining other schools to form a Special Education "cooperative" or "interlocal." A cooperative is administered by a member school district, while interlocals are managed by separate, independent entities. Joining such groups can allow districts to pool their resources to provide Special Education services more efficiently and effectively than they could provide alone.

For the 2004-05 school year, 270 of Kansas' 300 school districts were members of Special Education cooperatives or interlocals, while 30 school districts provided their own services. Cooperatives and interlocals are generally similar to stand-alone districts in the way they provide Special Education services. For example:

- all employ certified teachers, paraprofessionals, nurses, social workers, and other specialists such as occupational therapists and speech and language therapists. These staff are responsible for everything from developing individual education programs (IEPs) to providing direct service.
- cooperatives and interlocals typically send their staff to the district schools that Special Education students attend, just as a stand-alone district would assign its teachers to one or more schools.
- cooperatives and interlocals sometimes operate a special purpose school for particular types of students; stand-alone districts may do this as well.

One of the ways in which they differ is that some cooperatives and interlocals provide little to no transportation services. In those cases, students' home districts are responsible for getting them to and from school.

2. WHERE SERVICES ARE PROVIDED AND WHAT THEY LOOK LIKE

State and federal law require each school district, to the maximum extent appropriate, to educate students with disabilities with students who are not disabled. Here's how services might be provided, both in the regular classroom and in a pull-out setting:

- regular education classroom. Special Education staff work in the regular classroom, doing such things as providing one-on-one tutoring, assisting the student in taking proper notes during a lecture period, or helping a group of students practice various reading and writing skills.

- pull-out setting. This typically involves a separate classroom within a school or a separate building, known as a special purpose school. Pull-out might be used when:

- students working with speech pathologists go to another room to practice pronunciation
- students' behavioral or emotional disabilities are too disruptive to allow them to participate in the regular education classroom
- students with certain physical or mental disabilities are learning at a slower rate than other students

Students who spend a large portion of their day outside the regular education classroom often rejoin their peers for classes such as music and physical education, as well as joining them for lunch.

In addition, students with severe health or behavioral problems may need care on the way to-and-from school. In such cases, nurses or other appropriate staff will accompany the student on a school bus.

As part of our work for this cost study, we traveled across the State and observed Special Education services in about 25 different settings. The duties of Special Education staff appeared to be consistent across the State; in general, they assist in the creation of the IEP for each student and provide the services called for in that document.

Most of the staff are either certified teachers or paraprofessionals. The teachers provide most of the instruction, while paraprofessional staff work with students– either individually or as part of a group– to implement instruction in areas such as math, reading, writing, communication, and the like. In addition, they help with personal and physical-care issues, such as assisting the student with toileting, eating, and behavior-control activities.

Some of the services we saw included:

- The Levy School in Wichita provides services for students who are severely multiply disabled, mentally handicapped, autistic, and otherwise health-impaired. All students are bused to-and-from this site. Because of the severe nature of these students' disabilities, the school has a high staff-to-student ratio. It has an indoor pool with a floor that can be raised to allow the depth of the water to change so that students can experience "water activities," although it was broken at the time of our visit.

- At Schlagel High School in Kansas City, we observed Special Education teachers providing "class-within-a-class" assistance to students. In a biology class, a teacher was assisting a student with note-taking activities during a lecture period; in an algebra class, a teacher sat beside a student to help him solve equations while the rest of the class worked on similar problems.

- At a Kansas City grade school, we observed a room with four students, three of whom were in wheelchairs. The teaching staff consisted of one teacher and two paraprofessionals; the grandmother of one student also was present. The students were working on communication skills, such as pushing a button to acknowledge they were thirsty. In another part of the school, we observed a resource room, where students would go to receive specialized instruction, either in a one-on-one setting or in a small group. Students could work on a variety of skills, such as math or reading. We observed a group of three students working on word-recognition skills.

3. CATASTROPHIC AID

Districts incur significant costs for certain high-needs students. School districts are responsible for providing the services every student in Special Education needs, regardless of how costly those services might be. State law provides catastrophic aid to help districts manage those costs. Specifically, the law allows the Department of Education to reimburse any provider that has incurred costs in excess of $25,000 for any student during a school year. Reimbursement is limited to 75% of the costs in excess of $25,000.

In the 2003-04 school year, 24 providers received about $1.2 million in catastrophic reimbursement for providing services to 84 students. On average, services cost about $45,000 per student, although services for one student cost more than $260,000. This student, who was housed in a residential program, required a very high level of staffing–three staff during the day and two at night–to prevent him from injuring himself. Wichita received catastrophic funding for the greatest number of students (26), while many other districts had only one such student.

We reviewed Department of Education and service provider records to determine what types of academic and educational services these students were receiving. In all, about two-thirds of them received various types of academic instruction, while the rest received other types of care and training, as summarized in ***Figure 2.3-1.***

Figure 2.3-1
Types of Care and Educational Services
Provided To Students Funded with Catastrophic Aid
2003-04 School Year

Types of Care and Educational Services	Number of Students	% of Total
IEP includes only maintenance or containment services. For example, an 8-year-old with multiple disabilities, including cerebral palsy, required extensive medical care. The district incurred high costs for additional qualified staff and special equipment.	2	2%
IEP goals include basic communication, living, and mobility skills. Some examples are a 20-year-old autistic student with the cognitive skills of a preschooler, whose daily goals focused on learning to tell time and brushing teeth and hair. An 11-year-old emotionally disturbed student required self-containment and constant supervision by multiple staff members. The student's daily goals involved managing aggression and basic hygiene.	26	31%
IEP goals contain academic-learning activity. These activities vary from case to case. For example, students with severe vision or hearing impairments may require interpreters and special equipment but can participate in a normal curriculum. Another example is an 8-year-old with traumatic brain injury whose academic goals include counting to 10 and recognizing shapes.	53	63%
Pre-Kindergarten (engaging in school readiness activities)	3	4%
Total	84	100%

Source: LPA analysis of catastrophic applications filed with the Department of Education, and portions of student IEPs

QUESTION 3: What Does the Educational Research Show About the Correlation Between the Amount of Money Spent on K-12 Education and Educational Outcomes?

ANSWER IN BRIEF: Educational research offers mixed opinions about whether increased spending for educational inputs is related to improved student performance. Well-known researchers who have reviewed that body of research have come to opposite conclusions. Likewise, individual studies of specific educational inputs we reviewed sometimes concluded additional resources were associated with improved outcomes, and sometimes concluded they weren't. Because of perceived shortcomings in many of the studies that have been conducted in these areas, many researchers think more and better studies are needed to help determine under which circumstances additional resources actually lead to better outcomes.

Scholars Who Have Reviewed the Work of Other Researchers Offer Differing Opinions About Whether More Resources Improve Educational Outcomes

Because at least 100 studies have been conducted over the years looking at the link between increased spending on education and student outcomes, it wasn't possible for us to do a comprehensive review. As an alternative, we reviewed some of the existing literature, contacted faculty from schools of education at Kansas universities, contacted other school evaluation agencies, and reviewed bibliographies to identify which studies might be most relevant and useful in answering the question.

Through our work, we became aware of two well-known reviews by academic researchers that pull together the results from numerous studies, and offer opinions about what those studies seem to show. A 2003 study was done by Eric Hanushek, Ph.D., an education researcher at Stanford University, who had published similar work in 1981, 1986, 1991, and 1997.

A 1994 study by Greenwald, Hedges, and Laine used a different methodology to look at studies Hanushek reviewed. Larry Hedges, Ph.D., is a researcher at the University of Chicago; Greenwald was a Searle Fellow, and Laine was a graduate student there.

The results of these reviews are summarized in ***Figure 3-1***. Full bibliography information about each source referenced in this question is provided in **Appendix 15**.

Figure 3-1
Summaries of Multiple Studies, By Topic

Study basics

Hanushek, 2003 — This was an update of work Hanushek had published in 1981, 1986, 1991, and 1997. This article analyzes 376 results from 89 studies published prior to 1995 and counts the results presented in those studies. In general, if the majority of results showed no statistically significant relationship, Hanushek concluded there was no clear relationship.

Greenwald, Hedges, and Laine, 1994 — This study presented a re-analysis, using a different methodology, of overall conclusions from studies Hanushek had reviewed for his articles that were originally published in 1981 to1991. These authors base their overall conclusions on statistical tests of hypotheses of relationships between inputs and outcomes. In general, if more statistically significant results were positive than negative, they concluded there was a relationship.

Input analyzed in original published studies	Researchers' overall conclusions regarding relationships found in those published studies		Summary of results for the studies they reviewed: Of the statistically significant results, An increase in the resource was associated with an INCREASE in achievement	Of the statistically significant results, An increase in the resource was associated with a DECREASE in achievement	% of results that were statistically insignificant
Increasing Basic Expenditure per Pupil	Hanushek	no relationship	27%	7%	66%
	Greenwald, et al.	relationship	24%	5%	60%
Smaller Classes	Hanushek	no relationship	14%	14%	72%
	Greenwald, et al.	relationship (b)	10%	13%	76%
Increased Teacher Education	Hanushek	no relationship	9%	5%	86%
	Greenwald, et al.	relationship (b)	10%	13%	76%
Increased Teacher Experience	Hanushek	no relationship	29%	5%	66%
	Greenwald, et al.	relationship	30%	5%	65%
Higher Scores for Teachers on Their Own College Entrance Exams	Hanushek	no relationship	37%	10%	53%
	Greenwald, et al.	(didn't test this)			
Increased Teacher Salaries	Hanushek	no relationship	20%	7%	73%
	Greenwald, et al.	relationship	21%	9%	70%
Improved Facilities (a)	Hanushek	no relationship	9%	5%	86%
	Greenwald, et al.	no relationship	9%	10%	81%
Increased Administration	Hanushek	no relationship	12%	5%	83%
	Greenwald, et al.	relationship	14%	6%	80%

(a) Includes a variety of factors, e.g., number of library books, presence of laboratories, age of buildings.

(b) The authors based their overall conclusion on the results of tests of the statistical significance of the studies' findings. Those tests looked at whether one or more of the studies being reviewed in this meta-analysis found a positive relationship between a specific educational input and student outcomes.

Source: LPA review of these studies.

The left-hand side of the figure shows the inputs analyzed from the individual studies these researchers reviewed. The next columns show the conclusions Hanushek and Greenwald et al. reached based on their reviews of the study results.

As the figure shows, the two sets of reviewers reached very different conclusions about whether increased funding for various educational inputs translated into improved student performance:

> Hanushek concluded that, overall, the results of these studies showed there was no clear relationship between increased educational inputs and improved outcomes.
>
> Greenwald et al. concluded there generally was a relationship between increased inputs and improved outcomes.

These two sets of reviewers reached such different conclusions because they took different approaches in reviewing and interpreting the data from these research studies:

> **Hanushek based his overall conclusion on his finding that most studies don't show statistically significant correlations between amounts of inputs and student achievement.** As Figure 3-1 shows, for 53% to 86% of the study results Hanushek reviewed, the original researchers found no statistically significant link between the amounts of certain resources and changes in student outcomes. When he reviewed these studies, Hanushek tallied findings contained within them and reported those tallies, a procedure other researchers call "vote counting."
>
> **Greenwald et al., on the other hand, based their final conclusions on those studies that did show statistically significant links between inputs and achievement.** They performed additional statistical tests on those studies. For all types of inputs, they found that at least some studies showed that increasing inputs led to improved achievement. The Greenwald group looked at overall study results. That group criticized the "vote counting" methodology, saying it's unable to include an indication of the magnitude of a relationship (e.g., whether an increase in the number of teachers led to a large or small increase in student performance) and that it is prone to statistical errors.

Other Input-Specific Studies We Reviewed Found That Reduced Class-Sizes Were Most Statistically Linked To Improved Performance

In addition to reviewing the studies conducted by Hanushek and Greenwald et al., we reviewed the results of five other studies conducted by various researchers trying to determine whether there was a relationship between spending for one or more types of educational inputs and student performance. ***Figure 3-2*** summarizes these other studies and their findings.

Figure 3-2
Summaries of Individual Studies, By Topic

Author(s) Study basics	Smaller Classes	Basic Expenditure per Pupil	Improved Teacher Quality (a)	Increased Administration
Grissmer, Flanagan, Kawata, and Williamson, 2000 statistical study of relationships between state-level achievement scores and certain inputs	**Yes**		**No**, for states with higher percentages of master's degrees	
Pan, Rudo, Schneider, and Smith-Hansen, 2003 statistical study of links between student achievement and differences in fiscal spending and staffing allocations in Arkansas, Louisiana, New Mexico, and Texas, plus additional examination of selected districts that had consistently improved student performance	**Yes**, for Louisiana and Texas (no significant differences for Arkansas or New Mexico)	**Yes**, for Louisiana **No**, for Arkansas (no significant differences for New Mexico or Texas)		**No**, based on proportion of money spent on instruction v. administration
Nye, Hedges, and Konstantopoulos, 1999 review of achievement over 5 years of students involved in a randomized experiment in Tennessee (the STAR Project)	**Yes**			
Ferguson and Ladd, 1996 study of relationships between district-level achievement scores in Alabama and class size, teacher education, teacher experience, teacher test scores, and education and income of families in the schools' zip codes	**Yes**		**Yes**, for quality measured as increased teacher education and higher scores for teachers on their own college entrance exams **No**, for teacher experience	
Murname and Levy, 1996 review of results of 15 low-achieving schools in poor areas of Austin, Texas, given grants in addition to regular funding	**No**, unless smaller classes were combined with additional improvements			

(a) Teacher quality was measured by increased education (e.g., whether the teacher had a master's degree), increased experience, and/or higher scores on teachers' own college entrance exams.

Source: LPA review of these studies.

As the figure shows, the results for these individual studies often were conflicting as well. The most consistent pattern appeared to be a finding that smaller class sizes can improve student performance. Each of the educational inputs reviewed in these studies is discussed below.

Smaller classes. In four of the five studies we reviewed, researchers found a link between student performance and spending to reduce class sizes. One of those studies (Nye, Hedges, and Konstantopoulos) looked at outcomes for students who were part of a class-size reduction experiment in Tennessee in the 1980s known as the STAR (Student/Teacher Achievement Ratio) Project. In that experiment, students in kindergarten through third grade in 79 schools from 42 districts were randomly assigned to classrooms with 13-17 students or to "regular" larger classes. The students then stayed in smaller or regular classes through third grade.

The study looked at the achievement of the Tennessee students five years after the experiment ended to determine whether small classes in primary grades had lasting effects. It found that the initial positive effects of small classes on achievement in math, reading, and science persisted at least through eighth grade. It also found that the longer the child was in the small classes (1-4 years), the better the result.

Some researchers, including Greenwald, Hedges, and Laine, say results from studies of experiments with random assignment to either smaller or regular classes—such as the Tennessee project—provide better evidence than do non-experimental studies. Still others say smaller classes result in larger achievement gains for poor, minority, and urban children than for other children. Another study we reviewed (Murname and Levy) found smaller classes are most effective when combined with additional changes, such as changes in curricula.

Other articles we read and websites we found indicated at least 18 and perhaps as many as 33 states have implemented class-size reduction initiatives since 1977, with most targeting class sizes in kindergarten through third grade at 15-20 students.

Expenditures per student. A 2003 study by Pan et al. of links between student achievement and differences in fiscal spending and staffing allocations in Arkansas, Louisiana, New Mexico, and Texas found that, in Louisiana, better-performing districts spent more per student on instruction, instructional support, and student support than did matched districts in that state that didn't perform as well. In Arkansas, the results were just the opposite. In Texas and New Mexico, any differences in performance that were identified were not considered to be statistically significant.

Improved teacher quality. Some researchers argue that teacher quality is the most important factor in improving student achievement. Unfortunately, "teacher quality" is difficult to measure. Researchers say that none of the readily available data, such as teacher education, teacher experience, and test scores for teachers on their own college entrance exams, truly measure teacher quality. Nonetheless, those have been the measures most commonly studied to try to find links between teacher quality and student performance. Each is discussed separately below.

Teacher education. Teacher education is often measured by the portion of teachers having master's degrees. A 1996 study of schools in Alabama by Ferguson and Ladd found a significant positive effect on math performance if the teacher had an advanced degree. However, a 2000 study by Grissmer et al. found that students in states with higher proportions of teachers with advanced degrees don't have significantly higher scores than do students in other states.

Teacher experience. The same studies mentioned above looked at whether teachers had been in the classroom for a minimum number of years—3.5 in one study. The Grissmer et al. study of statewide results found more consistent results between average teacher

experience and average student scores, but other studies (including the Ferguson and Ladd review of Alabama schools) didn't find consistently positive results.

Higher scores for teachers on their own college entrance exams. Teachers who had higher scores on entrance exams were more likely to get into top schools, and graduating from a more selective school has been shown in some studies to be associated with improved student performance. The Ferguson and Ladd study of Alabama schools found a relationship between teachers scoring higher on entrance exams and the test scores of students taught by those teachers, especially reading scores.

Administration. A concern frequently expressed is that schools increase spending for administration at the expense of instruction, and therefore student achievement. The study by Pan et al. of differences in spending and staffing allocations in Arkansas, Louisiana, New Mexico, and Texas found that 9 of 12 districts that had improved student outcomes consistently over several years had lower increases in administrative spending than comparison districts did. However, a study of nine states released in November 2005 by Standard & Poor's found no significant positive correlation between the percentage of funds districts spend on instruction and the percentage of students who score proficient or higher on state reading and math tests.

Recent Literature Calls for Improvements In Research To Better Answer Questions About Relationships Between Inputs and Outcomes

Researchers' discussions fall into two main categories: limitations in the inputs that have been tested and the outcomes that have been measured, and calls for changes in the types of studies being done.

Limitations of inputs and outcomes. Many studies look at changes in only one or very few variables. They also usually measure outcomes in a single way, such as performance by students in grade 4 on math tests.

Variables tested. Baker et al., Cohen et al., and Grissmer et al. are among those who say the research needs to look at broader systems, including individual attributes of students, systemic structural reforms (such as changes in educational standards and curricula), and the wider environment for education, including attributes of parents and of state agencies.

Data available. Grissmer et al. and Hanushek point out that the data used are the data available, not necessarily the data most relevant to the inputs being studied. The data available, for example, may be average test scores by school district. Hedges and Greenwald say measurements at the smallest levels, such as by classroom, may be necessary to determine when certain interventions actually improve achievement.

Effects of earlier education. Grissmer et al., Hanushek, and Ladd and Hansen also point out that education is a cumulative process, making it difficult to determine the effects of changes over a short period of time. Determining true outcomes is even more difficult because of student mobility among schools and districts.

Calls for changes in studies. Researchers say different types of studies could lead to more useful results in determining when and what types of additional resources are associated with better outcomes:

Efficiency studies. According to Baker et al., researchers currently know "very little about the relationship between the organization of resources and productivity and efficiency." Rice King calls for studies to be designed specifically on cost-efficiency to assist policy makers, although Baker et al. caution that the findings and methods for such studies are "still at very early stages of development."

Experimental studies. Rice King also calls for more studies that randomly assign students to different groups, as Tennessee's STAR Project did.

In September 2005, a panel providing advice to the U.S. Department of Education's Institute of Education Sciences announced that its broad goals for agency research included funding studies to determine under which circumstances various strategies to improve student performance are most likely to succeed. The Institute oversees an estimated $575 million in research projects.