No. 15-113267-S

IN THE SUPREME COURT OF THE STATE OF KANSAS

Luke Gannon, *et al.*,

Plaintiffs-Appellees,

v.

State of Kansas, ***et al.***,

Defendants-Appellants.

Appeal from Appointed Panel
Presiding in the District Court of Shawnee County, Kansas

Honorable Franklin R. Theis
Honorable Robert J. Fleming
Honorable Jack L. Burr

District Court Case No. 2010-CV-1569

APPENDIX

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Oral Argument: One Hour

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VOL. II

In The Matter Of:

State of Kansas

Senate Select Committee on Education Finance

Dr. Jesse Levin

March 7, 2018

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T R A N S C R I P T

O F

S E N A T E S E L E C T C O M M I T T E E

of the House K-12 Education Budget Committee

and

Senate Select Committee on Education Finance

Chair Molly Baumgardner, Presiding

Held on the

7th day of March, 2018

Commencing at

1:30 p.m.

Kansas Statehouse

Room 144-S

Southwest 8th & Van Buren Streets

Topeka, Kansas

COMMITTEE MEMBERS PRESENT

Chair Baumgardner
Vice-Chair Denning
Senator Bollier
Senator Estes
Senator Goddard
Senator Hensley
Senator McGinn
Senator Kerschen
Senator Pettey

Appearing telephonically before the Committee is Dr. Jesse Levin.

CHAIR BAUMGARDNER: Ladies and gentlemen, thank you for joining us today for the Senate Select Committee on Education Finance. Today we will be discussing with Jesse Levin his peer review on our LPA and Augenblick studies reports. So we do have you on the phone. Would you please say hello to the Committee?

DR. JESSE LEVIN: Hello.

CHAIR BAUMGARDNER: There we go. So, we have contact. I thought that it would be best if we start the meeting. We all have copies of your report.

We did make the report available on our website as well to the public. So anyone listening to our live streaming that hasn't seen the 48-page report with the illustrations, please go ahead and you can access that PDF online. So, Jesse, we thought we would just start by allowing you to step us through in your words your report, if you will. And I thought that we would take about 15 minutes listening to you and then we'll jump into questions for you.

DR. JESSE LEVIN: Certainly. So-- and thanks for giving me this opportunity to

present to you all. I was asked-- I was asked to do a review of the Augenblick and Myers study and as well as the study/report by LPA. I took this, really the approach that I would take in reviewing any other say article for peer review journal. So really the structure of each of these reviews is really to describe the work and the findings. And then to provide some criticisms of what I found. And some difficulties that I had with the-- with the methodology that was used.

So with that being said, you know, the Augenblick and Myers study was a relatively early implementation of what we call a professional judgment approach. And also a successful schools approach to costing out educational adequacy. For-- as you would put it through the bill there. So, the two approaches in a nutshell are-- the professional judgment approach, as the name would imply, brings together the expert educators from around the state and organizes it in panels. And each panel is charged with developing school and district prototypes that will meet that definition of adequacy, sufficiency

suitability in the case of Kansas. And when I say developing these models or programs, I really mean defining and specifying those resources they deem necessary to produce the suitable outcomes, the outcomes that define suitability or sufficiency.

In the case of the Augenblick Myers study, they also included a host of input requirements. That is specific resources that your quality-- oh, I'm sorry I think it's called QVA that you have in statute that-- that dictates what I would say minimal service and program offerings must be in public schools. So that's the one study by A&M. I-- they brought together four panels of educators. And each panel was charged with developing prototypes where they specify the necessary resources to provide a suitable education. Each one of the panels faced a different, you know, a different prototypical district which varied slightly with respect to the degree of student poverty and the incidence of bilingual students and Special Education.

So with this information being gathered, these prototypes that have been

developed by the panel, the researcher then costs them out using standardized prices for say compensation rates for staff and other unit prices for the non-personnel resources. With this data, you can then compile it and determine what, not only the aggregate cost of providing a suitable education, but also the per pupil cost. Moreover, you can derive a base per pupil cost or foundation for per pupil cost and also weight which will tell you how much additional money it will take to provide a suitable education for students that are at poverty, in poverty, bilingual Special Ed, et cetera, et cetera.

So that's a description of the A&M study.

And you know, I don't know how far you want me to go into it. I found some-- I have difficulties with some of the things that they did. But I also realized that this was a study, a fairly early study. I mean it was conducted in 2001-02. So, you know, I think that the field of educational costing out, especially with professional judgment, has made some improvements since then. So I want to

realize that.

Let me move over to the LPA study very quickly here and describe that. The LPA report really included two different approaches to deriving costs.

And one was really an input oriented approach. And that-- really, I don't see that as an adequacy study. Because in adequacy studies we try to cost out what it's going to take to deliver student outcomes and to provide all students with an equal opportunity to reach outcomes regardless of their circumstance, including their personal characteristics and also the place that they are going to school.

So the first part of the LPA study was really an input-oriented study where they costed out just inputs that were statutorily required or in regulation. And they cost out these inputs. And there's nothing wrong with doing that, but it's answering a different question. So it's, you know, in-- one of the fundamental questions of an adequacy study is how much will it cost to provide an equal opportunity for all students to achieve at some common outcome standard.

This input-oriented approach was really answering more of a question that was how much will it cost to provide those inputs that are required by law or at code. So they did this and they did it three different prototypes which basically varied the average class size. And they had one of a lower class size.

One that was a higher class size. And then one that mixed up the class sizes for lower grades and higher grades. So that was part of the study.

Then there was a cost function analysis which was performed by Professors Duncombe and Yinger. And that was sort of a study within a study. And they used a cost function approach, as I mentioned. Now this is one of the four major approaches to costing out. The other three are the professional judgment, the successful schools and the evidence-based approaches. Okay.

So the educational cost function approach is really a statistical approach where you are trying to-- you're running a statistical estimation of the relationship

between per pupil spending. That is what we call the dependent variable. And a host of cost factors on the right-hand side, which will generally include student-- incidence of student need, the scale of operations or basically how large a district is, and the price level of inputs which is usually proxied by the price level of hiring and retaining, the cost of hiring and retaining staff. In addition, as an independent variable-- all of these cost factors are independent variables, you also want to control for outcomes. And in this way once you estimate this equation, you can do predictions, you can generate predictions of how much it will cost to provide different levels of outcome assuming different incidences of student need, different scales of operation, and different levels of input costs. Right?

So this is really more of a statistical methodology. And there are pluses and minuses that are commonly, you know, that are commonly mentioned for all four approaches, not just the cost function, but for all four approaches. So they mentioned what came out of

the study though, the overall LPA study, is that they really made use of results from both sub studies. So-- and they sort of mixed and matched.

So from the outcome-oriented or cost function approach study, they made use of base per pupil cost. That is the cost of providing a pupil with a suitable education if that-- if that student is attending an optimally sized district and has additional needs. Right? And then they also used the weights that came out of the cost function studies. So that would be the additional amount above the base per pupil amount that you would have to fund a student with that at risk, that is in poverty or bilingual. And then they brought in their input-oriented estimates to take into account the cost of other factors such as location, education and transportation, et cetera, et cetera.

So that was one sort of hybrid estimation that they had. And they also compared that to the three strictly input-based approaches that they-- or the prototypes from the input-based approach. That is the ones

that were purely spending estimates based on what is required in statute and regulation.

So that's my overview of the studies themselves. I mean, I'm happy to answer any questions about the concerns that I had for the study.

CHAIR BAUMGARDNER: Okay. Committee, let's start with some questions. Senator Denning.

DR. JESSE LEVIN: I'm hoping you can hear me.

CHAIR BAUMGARDNER: We can hear you.

VICE CHAIR DENNING: Thank you, Madam Chair. Mr. Levins, can you hear me?

DR. JESSE LEVIN: Are you all on mute there? Because I cannot hear you.

VICE CHAIR DENNING: Is this any better?

DR. JESSE LEVIN: I really can't hear anything.

VICE CHAIR DENNING: Mr. Levins, is that clear?

DR. JESSE LEVIN: I can barely-- I can't make out what you are saying. It is almost inaudible.

VICE CHAIR DENNING: Bear with us for just a moment. Is that the microphone (indicating)? Okay. So how's that?

MS. ROBINSON: That would be a no.

CHAIR BAUMGARDNER: At this time the technical difficulty sign gets put up. Are we calling him up again?

(THEREUPON, a recess was taken to work on the phone connection.)

CHAIR BAUMGARDNER: Hello again. Can you hear us?

DR. JESSE LEVIN: I can hear you.

CHAIR BAUMGARDNER: Great. Senator Denning has a question for you.

VICE CHAIR DENNING: Mr. Levins, can you hear me any better this time?

DR. JESSE LEVIN: Yes, thank you.

VICE CHAIR DENNING: I'll try to talk a bit louder. I wanted to discuss the Augenblick study with you. From reading your peer review and then hearing you earlier today, since the study was done in 2002, is it my understanding that a lot of the professional judgment fundamentals have changed significantly in a professional judgment study,

in the year 2018 compared to 2002?

DR. JESSE LEVIN: Well I think the-- forgive me for talking like an economist. But I think the technology of which we do these studies, or the sophistication of these studies has come a fair ways. I kind of highlighted a couple of the things that I think that I would have done differently or more. For instance, they employed four different panels. And three of the panels did one of the modeling prototype exercises and the third panel did two of them. Generally we like to have multiple panels doing each of the exercises. So we don't have just one data point.

So that the exercises, the resource specifications aren't dictated by just one panel. You can at least take an average over multiple panels that address the same exercise. So that's one instance that I, you know, I think that they could have done a better job.

Another thing that I pointed out in my review was they really made no attempts to try to validate their findings. And it's inherently difficult with the input-oriented approaches to validate the findings. Because

the way to truly validate them would be to implement the solutions or the resource specifications. And then to see what outcomes came out of those.

However in previous research that I've done, subsequent to 2002, okay, there are ways that you could, you can do at least a weaker validity test of the outcomes. So I included an example there where-- I did this for adequacy studies we performed in New York and in New Mexico. Where you have the projections of what it's going to cost to provide a suitable or adequate education. And you also know how much these districts are actually spending. So it's straightforward to calculate the shortfall, right? In other words, how much they're spending below what is projected and necessary to provide a suitable education. You can then take those gaps, if you will, and you can see if there are patterns in those gaps, if they have a relationship to student outcomes. So you would hope that if you've done your job right that the adequacy gaps that you identify are negatively related to outcomes. That is the larger the distance between what's

projected as adequate and what you're actually spending, the lower your student outcomes will be on average. And it's a weaker form of validity to really say, okay, if we want to put any stock in these findings we want to make sure that where we're projected to increase funding is where student outcomes are suffering the most. Does that help?

VICE CHAIR DENNING: Yes. And then, you know, when I was reading your conclusions it appeared that the A&M study was probably fundamentally flawed when it was first done. But certainly now that we have a lot more modern approaches that it's time to probably quit relying on that study just in general for adequacy?

DR. JESSE LEVIN: Yes. So I mean, let me just put forth what I see as one of the main, the main concerns that I have. And that is they have four different prototypes. And if you want to try to understand how the cost of providing a suitable education might vary with respect to student needs, or scale, then you want to the have exercises that also vary with respect to student need. Right? So if you can

imagine, if we have a long time and lots of panels we can line up 20 different exercises where each exercise was a given school in a district that had a specific level of poverty, specific level of bilingual students, specific size. And all of these would vary, but be representative of the different ranges that occur across your state.

Now, you know, the A&M study really had very little variation in the student needs across the exercises. If memory serves, I mean, what they did-- let me just back up. What they did was they took-- they split up districts according to size categories; four different size categories, very small, small, moderate and large. And with each of those they calculated the average district poverty, average district bilingual, and then they defined their school level exercises using those student needs demographics. And what really happened is that the poverty level really doesn't vary at the district on average across their four categories. Okay? So I think that for-- again, if memory serves I'm not looking at the report right now, but I

think the at-risk incidence for their four categories was 35 percent, 35 percent, 29 percent and 36 percent. So that's not a lot of variation. The only-- and that was for very small, small, moderate and large. So really, you know, virtually the only variations that they had there was for the moderately-sized district which we know are going to tend to be the suburban, more affluent districts.

That was probably the major concern I had that they, the exercises they set up did not provide a proper variation in the student needs. Therefore, it's hard to truly estimate weight based on that in my opinion. So and then the way that we've done it in other professional judgment studies have been quite different where we actually dug down to the school level ranges of these different student needs and also sizes. You know, there are some size variations in schools as well. So-- which they track. So, you know, I think that their study, because they really based all of their demographics for the prototypes on, on district level. And they had four different district levels that were sorted by high to low, low

enrollment. Their study did a much better job of trying to estimate the scale effect on suitable cost. That is that, you know, we-- they see that the per pupil cost of providing a suitable education in the smaller district is higher than a lower district. And I think their study did a much better job of that.

VICE CHAIR DENNING: Yeah, thank you for that. Then I'd like to move on to the LPA study.

DR. JESSE LEVIN: Sure.

VICE CHAIR DENNING: When I read through it, it looked like you praised LPA for really supplying a lot of documentation and to building their model and assumptions. But I think you noted a shortfall and I think you mentioned it earlier. It appears that the first part of the LPA study was more of an evidence-based input model. And they may have taken some of the cost function into their assumptions therefore making the adequacy measure not all that meaningful. Did I understand that correctly?

DR. JESSE LEVIN: Yes. Yes. I mean I wouldn't consider it-- the first three

prototypes that they presented, which were purely based on input, an input-oriented approach so to speak, aren't costing out outcomes. They're costing out a set of inputs. So I wouldn't even go as far to say it's an evidence-based approach. Because the evidence-based approach will go to the research literature that has rigorously estimated the impact of different interventions. And then it will take the resources associated with those interventions and cost those out. And sort of project, say what would it take to, you know, to do this, to apply this host of inputs that are associated with all of these interventions we found in the literature. And if we try to project that to every district what would it cost.

So at least that has some sort of connection to outcomes. But what LPA did in that evidence-based approach had nothing to do with outcomes at all.

Outcomes weren't taken into account. To tell you the truth, neither were student needs for that matter.

VICE CHAIR DENNING: All right. And,

Madam Chair, may I ask one more section?

CHAIR BAUMGARDNER: You may.

VICE CHAIR DENNING: Mr. Levins, I was going to move on to the Duncombe study which is in the appendix section of the LPA study--

DR. JESSE LEVINS: Sure.

VICE CHAIR DENNING: -- which we know, we refer to that as the cost function study. Two things. One, the cost function is more of an outcomes-based study. And in Kansas we have something called a Local Option Budget where districts can raise, back in this time, probably around 30 percent of their budget they could raise locally with additional property tax. We call it the Local Option Budget.

DR. JESSE LEVINS: Yes.

VICE CHAIR DENNING: So basically they raised, for this example, they raised 30 percent of their budget locally. In a cost function study that Duncombe produced, would he have had to account for the Local Option Budget being part of the cost function output?

DR. JESSE LEVIN: Well so my assumption is that the spending estimates that

he used did get included in the LOB. That's my assumption, is that the spending estimates-- he did not pull out the LOB from that. And I would argue rightfully so. I mean, my understanding is that, you know, back when Augenblick and Myers did their study, the LOB-- well the purpose of the LOB was more motivated by providing districts a local option to provide supplementary services, correct? But as times have become fiscally a bit tougher, most districts are using it literally for their general operations. That's my understanding of it. So I would assume that indeed the LOB would be included in the Duncombe and Yinger's spending estimates, yes.

VICE CHAIR DENNING: So therefore, if we're looking at adequacy and funding levels we really should take into account local option budget in a cost function approach?

DR. JESSE LEVIN: I believe so. Especially if that's what's being used to-- you know, if those monies are being used to generate the outcomes, then absolutely, in my opinion.

VICE CHAIR DENNING: Then finally, in

a cost function approach, if the standards change significantly from what the original assumptions were based on--

DR. JESSE LEVIN: Uh-huh.

VICE CHAIR DENNING: -- would the study be of really any value without going back in and adjusting those assumptions for new standards?

DR. JESSE LEVIN: You know, it's a tough one. Technically speaking you would want to rerun the cost function to, you know, to account for the newer standards. However, I mean, regardless of whether-- when you think standards, there can be the same metrics or different metrics. Right? So if we're talking the same metrics and we're just talking about, you know, increasing the bar, then no, you would not necessarily have to rerun the studies. If you're talking about a completely different metric, then, you know, you probably want to rerun, you know, replicate the study using those numbers. I mean I realize it's also, it's also been a while. So I believe this was a 2006 study. So it's been a while. And just as a general rule of thumb in this

costing out, work we always suggest that, that these, whatever approach that you're using, that you try to rerun your analyses every five to ten years. Because the technology with which education is produced has changed, the prices of different inputs may have changed, policies have likely changed. So as a rule of thumb it's always good to try to update these models every five to ten years. If-- you know, if you're talking about a huge change, such as changing your test from, you know, the old standards to say common core, then that would be another reason why you might want to do that because of differences. Now what's most interesting though, is if you replicate it how close are the results of the old model to the new model. And of course, that's of great interest. And, you know, hopefully while the base per pupil funding might change, one might hope that the weight you calculated are in the same ball bark, definitely in the same range. That is, you know, again, I'm going to-- I'll stop right there. But I think that, you know, if the metrics have changed dramatically, then you probably want to rerun those.

And I don't think that means the old findings are worthless at all. I just, you know, different metrics, you're going to come up with somewhat different results. The question is how much will the new results be compared to the old.

VICE CHAIR DENNING: Thank you very much.

DR. JESSE LEVINS: You're welcome.

CHAIR BAUMGARDNER: Senator Bollier.

SENATOR BOLLIER: Thank you, Madam Chair.

Am I audible to you?

DR. JESSE LEVIN: Yes. I can hear you. Thank you.

SENATOR BOLLIER: Thank you so much for all of this work. My first question has to do, you have referred in your study on page-- what page is it? Nine. You review calculations of cost of a suitable education. And I wanted to talk about your use of the word suitable and our charge by the Supreme Court to make suitable provision for the education of, versus providing a suitable education. So when you use this word suitable are you talking

about us meeting Roe standards or help me with word choice here.

DR. JESSE LEVIN: Certainly. Thanks for the question. Let me just say it's not my definition of suitable that I'm referring to here. What I'm referring to is the definition of suitable that each of the studies defined. So I used suitable because I thought it was more-- it was local terminology.

In any case, both of these studies are taking really suitable to mean, really the level of educational service and program offerings that will-- well, in the Augenblick and Myers study, that will meet the outcome standards which are really from the No Child Left Behind era. So-- so on page nine, Table 2, I've got really the proficiency rates on six different tests. In addition to that, in their suitability definition they have a host of the QPA program and service offerings that must appear in schools. So it's really from a-- suitable is really what are-- what is the-- suitable education is defined by what I would call in my study a goal statement. That is what are the outcomes that we can reasonably

expect students to achieve if provided a sufficient level of funding or program concern for services. Is that helpful?

SENATOR BOLLIER: Yes. And can I clarify?

I think I hear you saying at least for Augenblick and Myers, they were looking at using QPA or No Child Left Behind. So a No Child Left Behind which was supposed to get us at 100 percent. That amount of money versus-- we've changed-- we're not following that anymore. So it might not necessarily-- our goal isn't necessarily to be-- I mean it would be our goal, but we may not ever be able to reach 100 percent. Is that--

DR. JESSE LEVIN: I'm sorry for interrupting. But that's true. I mean, so the initial goals that they have there-- again it's a 2002 study.

So I think these targets the idea was that-- that the panels have to define models which would reach these targets in a matter of five years. So these were the targets five years out from 2002. And then if you keep following that trend, then I think by 2014

supposedly you would hit the 100 percent proficiency mark.

SENATOR BOLLIER: Great. Thank you. The second question has, goes back to one of Senator Denning's first questions or tied into that. When I look at what you've given us, there's a lot of reference to the size of the school districts, the size. And I would be interested to know, are you implying to us or essentially recommending that we need to evaluate the size of our districts relative to the cost, and specifically schools that are large, or I should say small by choice versus small by geography?

DR. JESSE LEVIN: Yeah. That is a great, a great point. If you remember I referred to the second of three contractors in economies of scale. And so in economics production theory we recognize that the per unit cost of producing something tends to drop as the scale of production goes up. So in this context the per pupil cost of providing a-- a-- an adequate education-- I'll use adequate. It's a little more neutral, I think. An adequate education is higher in smaller

settings.
Now you just brought up an excellent, excellent point which is small by choice versus small by necessity. In districts that are small by choice or schools for that matter that are small by choice, that is not operating at an efficient scale, you know, you don't necessarily want-- in my opinion, you don't necessarily want to fund that because it's going to cost more. Now this is in contrast to being small by necessity. And several rural districts have schools and they are small by necessity.
I mean, you have a collection of-- you have a number of students, maybe it's 150, that are in your district.
And you are required to serve them. And you haven't created a small school or school district setting on your own. You've been dealt that hand. You were given a hand that was dealt you. Is that helpful?
SENATOR BOLLIER: That's very helpful. And I appreciate your attempt to show that through all of these different weightings as well bilingual, et cetera, I find it

helpful. So that's all. Thank you.

DR. JESSE LEVIN: You're welcome.

CHAIR BAUMGARDNER: Other Committee members, questions? Senator Pettey.

SENATOR PETTEY: Thank you, Madam Chair. I hope I understand this well enough to ask the question. Thank you for the report. I was looking on page 17 of the report. And I notice your-- in the last paragraph when you talk about the per pupil cost and LOB.

DR. JESSE LEVIN: Uh-huh.

SENATOR PETTEY: And that-- it makes a little sense, about using these two that they were-- they are used for entirely different purposes. Could you expand on that?

DR. JESSE LEVIN: Sure. So, you know, I'm sorry that in my introduction I didn't talk about the successful schools model that Augenblick and Myers implemented. It's really not an approach that is really seen as credible. What I mean to say, the special schools approach is really, really no more than sort of rank ordering schools or districts by their student outcomes. And then, you know, amongst those with the highest outcomes let's

try to find the lowest spenders in there. And so really it's-- the way that myself and some of my co-authors have described it, it's really like a cost function without controlling for any of the cost factors. Okay? So we really don't like it as credible-- as a credible method at all. And you can imagine, you know, if you sort of cherry pick the best performers and then take the lowest spenders and the best performers as is often done, you're going to come up with on average lower numbers. Because the best performers might have really lower needs. And not be facing the same challenges that the typical district would. So indeed, Augenblick and Myers calculate base per pupil funding level both from the successful schools approach and from their professional judgment approach. And the successful schools approach estimate is lower, considerably. So they-- and the professional judgment one is higher. And for a lot of reasons that are, you know, you probably expect. Because they are trying to control for things like student need and scale of operation.

So what they do is they basically

say let's use the lower, that's the lower estimate which is the successful schools base per pupil amount as our recommended base. Then from out of nowhere they kind of want to save their professional judgment estimated base per pupil funding and stick it in as, as where the threshold for the LOB should be. It just seems very, very strange because back then the LOB was really meant to serve as supplemental, not part of the general, sort of the general regular education offering, but sort of as a supplemental as I understand it. And it just seems very mismatched. It's almost like they wanted to preserve the PGP base cost estimate somehow and this was a convenient way to do it. And I don't know otherwise how to do explain it. But these two numbers are very different things. The professional judgment base per pupil amount is supposed to represent how much does it cost to provide an adequate education to a student with no additional needs. It's not supposed to be some sort of upper bound threshold on-- that would constrain how much local funding you should use for, to buy supplemental services. Does that help explain

where I was coming from?

SENATOR PETTEY: Yes. Thank you.

DR. JESSE LEVIN: Okay.

CHAIR BAUMGARDNER: Yes. Senator Denning.

VICE CHAIR DENNING: Thank you, Madam Chair. Mr. Levins, on the successful schools model, how does the successful school model with beating the odds approach compare to the old fashioned successful school model?

DR. JESSE LEVIN: Well, so if I can tell you how I've used the beating the odds approach. Let me explain it, describe it a little bit first. The successful schools model-- sorry. The beating the odds model is really a way that you can try to identify those schools that are performing better taking into account their student needs and their scale of operations. And in this way you can identify schools that are quote beating the odds. They are performing better than you think. You can also identify those schools that performing worse than you would think given the different student-- level of student needs they face and scale of operation.

The way that I've used the BTO approach is different. It's not to yield a direct estimate of the cost. But instead we've used the beating the odds to-- in the context of a professional judgment study. So you have professional judgment and you have these panelists. And what we do is we look at the beating the odds schools and we develop a resource profile. That is the profile of the staff used by the typical school that is beating the odds. And we provide-- and we provide that to the panelists to consider as they're deliberating.

So it's more of a hybrid approach in trying to-- I didn't include-- I didn't really want to talk up my own work in this review. But it's a hybrid approach. And that's how we used it.

In addition, you can think that if you identify those beating the odds schools, which loosely you can interpret as more efficient schools, very loosely. You can also use that to come up with additions to your list of panelists that you might want to recruit for the profession. So you might want expert practitioners that are from these beating the odds schools to serve on

the panels. Because statistically speaking, their schools have been shown to do better than you would expect given the needs they face. Is that helpful?

VICE CHAIR DENNING: Yes. Thank you very much.

DR. JESSE LEVIN: You're welcome.

CHAIR BAUMGARDNER: I actually have a few questions. And I'd like to start with the discussion, a little bit about at-risk weighting. So when we look at Exhibit 3, which is page 22, where you share "At-Risk Weighting Schedule For California Local Control Funding Formula," could you tell us a little bit more about that and--

DR. JESSE LEVIN: Sure.

CHAIR BAUMGARDNER: Is this something-- when we look at this schedule, is this something that is appropriate just for California or could that be something that---

DR. JESSE LEVIN: You know, this is just-- with all due respect I'm not even going to say this is appropriate for California.

CHAIR BAUMGARDNER: Okay.

DR. JESSE LEVIN: It's what they

decided on. And you know it was very helpful for me to dig into the numbers and create the schedule. Because I'd never seen the schedule before. But I wanted to create something that was, that we can look at. Let me explain it to you. In California, we implemented the Local Control Funding Formula about three, a little over three years ago. And the idea behind the formula was A, to provide a more equitable distribution of funding. And B, to provide more local flexibility. Okay. We have big problems here in California. So the way it's structured is that there's a base grant that every, every district gets. And it's a base per pupil amount for every-- for every student regardless of what their needs are. And then there is what we call a supplemental grant. And the supplemental grant is a weight of 0.20. In other words it's 20 percent of the base, right, of the base grant. And districts will get that 0.20 for every student that is deemed at risk. And at risk in California is either socioeconomically disadvantaged as defined by being eligible for the Federal free or reduced price lunch program, or being identified as an

English learner, or being a foster child. Okay. Now the ors that I put in there are really, really important. Because it means that we come up with-- for every district we come up with an unduplicated count. So you don't get double counted if you're at risk and say bilingual. Okay? So those ors are really at risk, bilingual, or a foster child. So for every student that is sort of, you know, at least one of those, they're going to get funded at-- the district will be funded an extra 20 percent of the base for each one of those. Now that goes up through-- once the district hits 55 percent, at risk, then we have a third funding stream that kicks in. And that's called a concentration grant. Now the concentration grant has a weight of 0.7. It is funded for each student that above that 55 percent threshold. Each student that is at risk. So you can think of it as the first 55 percent of the students in the district who are at risk are going to get an extra 0.2 weight. Where as every student past that 55 percent is going to get not only the 0.2 supplemental grant, but also the 0.7 concentration grant.

Oh, sorry, yeah.

Yeah. It's a-- is it 0.7? I'm mixed up now. I'm going back to my notes here. It is point-- yeah. So it's going to get 0.7 on top of that. Okay?

CHAIR BAUMGARDNER: Okay.

DR. JESSE LEVIN: So what I've done here is I calculated what the average weight is going to be once you go above that 55 percent threshold. And as you can see it tops out at about 0.425. That is the, you know, if you smooth out all of the additional funding of all of the students who are at risk in that district, which is going to 100 percent, then the amount above the base is going to be about 42.5 percent above the base.

So I have a hard time saying whether this is appropriate for Kansas, or even for California. Because again, this was not based on an adequacy study. This was something that policy makers came up with. So I don't want to bias you one way or another, I guess is what I'm trying to say.

CHAIR BAUMGARDNER: Okay. Senator Hensley.

SENATOR HENSLEY: Yeah, I note on the bottom of page seven, you do say that the successful schools was excluded from the table. And you have on page eight because it is not deemed as a credible method of cost analysis.

DR. JESSE LEVIN: Yeah.

SENATOR HENSLEY: Were you aware that was the model we actually used in passing the school finance bill last session?

DR. JESSE LEVIN: I was not.

SENATOR HENSLEY: Yeah, in fact, the Supreme Court agreed with you that the successful schools model was not credible in their decision on Gannon 5. So I didn't know if you were aware of that or not.

DR. JESSE LEVIN: I was not aware of that. So honestly I, you know, I came to this-- I-- and I'll just put it out there to all of you, I'm not an expert on the Kansas state finance system. Nor am I an expert on the court case that-- about it. I think-- you know, there's drawbacks. I have some homework to do. But there's always some pluses because of coming to this purely objectively. I mean, I don't-- I don't have a horse in this race.

So, you know, I wrote that based on-- based on really years of research in this area and it's just my own opinion about the successful schools approach, you know, the successful schools approach relative to the other approaches.

SENATOR HENSLEY: I appreciate your objectivity.

CHAIR BAUMGARDNER: Senator Denning.

VICE CHAIR DENNING: Thank you, Madam Chair. Just a bit of possible correction to Senator Hensley's statement. We did a successful school model with the beat the odds approach. And the Supreme Court never took that into account. But nevertheless, just to make it clear, we did not use the successful school monetary approach. We took the House position which was just plucked out of the air. So if we would have taken the Senate's position with our successful school models, it would have actually added a bit more money. But we ended up taking the House position. So the successful school model was part of the testimony that was based on beat the odds. So just clarify that.

CHAIR BAUMGARDNER: If you wouldn't mind going back to our discussion about at-risk weightings and that density. So you explained what was going on with California. But on page 23 it says, you say you calculate a weighting of 0.45. Could you explain how you came up with 0.45? And also could you address the density of at-risk students in a district and how that impacts the figure and also talk about that comparison with that overall size of a district?

DR. JESSE LEVIN: Sure. Let me try to address that. Thanks for the question. So the way that I calculated this was really quite straightforward. And that was drawing off of the results that the authors presented. I'm just going to flip through here, where they present their weights. And I'm just trying to find it here. Because hopefully, you have the Augenblick and Myers report in front of you. And I calculated a pupil weighted average across the figure. So I am looking at-- I'm right here. It's Table 4-10. Unfortunately they don't really have page numbers. It's the page-- that the last page of Chapter 4 in their

report, in the A&M report.

CHAIR BAUMGARDNER: Uh-huh.

DR. JESSE LEVIN: So what I did here was I took the base-- I took the additional cost for each one of these student needs categories and I calculated-- I divided through by the base which is how you can come up with the individual weights for each one of their district prototypes. Right?

CHAIR BAUMGARDNER: Right.

DR. JESSE LEVIN: And then once I came up with those weights I performed a pupil-weighted average across the four prototypes. Is that helpful?

CHAIR BAUMGARDNER: Okay.

DR. JESSE LEVIN: So I came up with weight that was 0.45. Now I mean, that was-- that was more of a reaction because I, you know, if I go back to what they proposed in Exhibit 2, that is page 21 of my report. The solid-- I'm not sure if you have color pages or not. But the solid disjointed schedule, that it looks like two segments, it's actually more than two segments, but there's a steep portion and then there's a somewhat flat declining

portion. Those are lines based on the data points that Augenblick and Myers got from their panel, calculated from panel exercises. What they suggested is the blue smooth line was the highest line. And then-- and then the dotted line is really the function that I found that best describes the data they collected. Okay?

So I guess my gut feeling here was I wasn't incredibly confident that, that the differences they found between the high enrollment districts and the low enrollment districts in terms of their weight was-- I didn't have a lot of confidence. And a lot of it was I really wasn't sure that-- you know, that the top function tops out at about 0.6. And the bottom function is at 0.2. And so I'm wondering, you know, I'm not sure how much stock I put into that ratio that it costs three times as much to provide the extra support for an at-risk student in an urban area than it does in a rural area.

Now, you know, I feel much more comfortable with the Duncombe and Yinger study where, they calculate this with, you know, with accent data with administrative data. And they

come up with a similar relationship. But even there, I'm not sure it is sort of a three-fold factor between the additional funding for at-risk support in the most urban pupil sense locations than in the rural locations. But is that helpful to answer your question?

CHAIR BAUMGARDNER: It is. It does. The last question is on page 31 just right there in the middle of the page you say, "It is important to be confident that any suggested funding increases deemed necessary to provide a suitable education would be targeted to districts and schools according to their needs." Could you just talk about that a little bit? Targeted to the schools according to their needs.

DR. JESSE LEVIN: Sure. I'm going back to my short discussion earlier on, about attempting to validate your work. The idea is that if we are going to estimate that there are shortfalls in order to provide an adequate education, where an adequate education is really a collection of outcomes that you would expect students to be able to achieve on average, right? Then we should be able to

demonstrate in some way, that the dollar-- where we're targeting dollars or where we conversely see, where we are identifying shortfalls are those places that tend to have lower outcomes. And that's what I'm trying to say here. It's making sure-- I mean, if we-- if we ran-- I really don't care what approach you use. But if we ran an adequacy study using any of the approaches and it showed that we needed more money in, you know, in areas that are already very close or meeting standards, and we don't need money in those areas that have lower outcomes, then I would be very suspicious of those. I would have to look at those results very, very carefully to see what was driving them. Because if your goal statement or the standards that you set really dictate, you know, what is being costed out. I mean, it really drives the whole process. Then you would expect that your formula that it calculated should direct funding to where it's most needed as defined by those places that are farthest from meeting the outcomes.

CHAIR BAUMGARDNER: I appreciate that last answer. And I'm going tell you that we

are now out of time as a Committee. I don't see any other hands up indicating they have another question for you. I certainly want to thank you for your patience with our technical difficulties today. And I appreciate your thorough-- your attempt to thoroughly answer all of the questions put before you. We will be talking to you later this month and we look forward to that.

DR. JESSE LEVIN: Yeah, I do as well. Thank you all for your questions.

CHAIR BAUMGARDNER: Thank you. Ladies and gentlemen, our Committee meeting is adjourned.

(THEREUPON, the proceedings concluded at 2:33 p.m.)

C E R T I F I C A T E O F R E P O R T E R

STATE OF KANSAS

I, Jane E. Piles, RPR, a Certified Shorthand Reporter, commissioned as such by the Supreme Court of the State of Kansas, and authorized to take depositions within said State pursuant to K.S.A. 60-228 and authorized to administer oaths to witnesses pursuant to K.S.A. 20-913, certify that the foregoing was reported by stenographic means, which matter was held on the date, and at the time and place set out on the title page hereof and that the foregoing constitutes a true and accurate transcript of same.

I further certify that I am not related to any of the parties, nor am I an employee of or related to any of the attorneys representing the parties, and I have no financial interest in the outcome of this matter.

Given under my hand and seal the 7th day of March, 2018.

(Signed Electronically)
Jane E. Piles, CSR, RPR, CRR, CBC
CERTIFIED SHORTHAND REPORTER

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Estimating the Costs Associated with Reaching Student Achievement Expectations for Kansas Public Education Students

A Cost Function Approach

Prepared by WestEd:

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Chapter 1: Introduction

Over the past five decades, the Kansas Legislature has made efforts to address concerns of inadequacy and inequity of the state's school finance system. The Kansas Supreme Court has ruled the current finance system to be unconstitutional, prompting the Legislature to investigate options for education finance reform. This chapter provides background on the relevant legislation that has shaped the landscape of Kansas's public education finance system and sets the stage for this study.

The 1970s: The School District Equalization Act

The current context of school finance in Kansas can be traced to the early 1970s, when the Johnson County District Court ruled in *Caldwell v. State* that the School Foundation Act of 1965 violated the Equal Protection Clause. Having identified at least three major deficiencies with the state's school finance formula, the court determined that the formula made "the educational system of the child essentially the function of, and dependent on, the wealth of the district in which the child resides."[i] The court ruled that by requiring school districts to rely heavily on local tax revenue, this financing system led to inequity.

To address this, the Kansas Legislature adopted the first iteration of the School District Equalization Act (SDEA) in 1973. However, *Mock v. State*, filed in 1990 in Shawnee County, challenged the SDEA formula. As presiding judge Terry Bullock wrote, "In addition to equality of educational opportunity, there is another constitutional requirement and that relates to the duty of the legislature to furnish enough total dollars so that the educational opportunities afforded every child are also suitable."[ii] Bullock refers to Section 6, Article 6(b) of the Kansas state constitution, an amendment added by voters in 1966, which states: "the Legislature shall make suitable provision for finance of the educational interests of the state." Bullock thus highlights the constitutional requirement not only for equity, but for adequacy, in the state's school funding levels.

The 1990s: The School District Finance and Quality Performance Act (SDFQPA)

These two requirements, equity and adequacy, became the recurring crux of litigation challenging the constitutionality of Kansas's funding formulas. In 1992, the Legislature replaced SDEA with a new school finance formula, the School District Finance and Quality Performance Act (SDFQPA). SDFQPA aimed to ensure equal spending power for school districts, regardless of local tax capacity, and shifted more of the school funding responsibility to the state level.[iii]

The SDFQPA was challenged on constitutional grounds, but the Kansas Supreme Court upheld it as constitutional in 1994.[iv] After this decision, however, the Legislature amended SDFQPA several times, leading to a new legal challenge filed in 1999 in Shawnee County District Court.[v] The district court dismissed the lawsuit, but upon appeal, the Kansas Supreme Court determined that the plaintiffs brought valid claims. The Court noted that "the issue of suitability is not stagnant," and school finance requires monitoring and re-evaluation to determine

whether or not it remains adequate.[vi] The district court revisited the matter and concluded that SDFQPA did not provide suitable funding, noting demographic shifts among public school students, higher admission standards at postsecondary institutions, and modifications to SDFQPA that had occurred since the 1994 decision.[vii]

In May 2004, the court issued an injunction to block expenditures to public schools, thereby closing the school system, until the defects in the funding system were corrected.[viii] The district's order was stayed pending appeal, and the Kansas Supreme Court issued its second decision in January 2005 (*Montoy II*). The Court affirmed that SDFQPA was neither equitable not adequate, particularly for "middle- and large-sized districts with a high proportion of minority and/or at-risk and special education students."[ix] Addressing adequacy, it ruled that "the financing formula was not based upon actual costs to educate children but was instead based on former spending levels and political compromise," and that "[t]he equity with which the funds are distributed and the actual costs of education… are critical factors for the legislature to consider in achieving a suitable formula for financing education."[x]

The court set a deadline of April 12, 2005 to correct the school finance formula, and the Legislature responded with House Bill No. 2247 (HB 2247) and Senate Bill No. 43 (SB 43), which provided an increase of approximately $142 million for the 2005–2006 school year and modified several components of the formula.[xi] The Legislature also ordered a cost study to be performed by the Division of Legislative Post Audit (LPA). In June 2005, the Court held that this was not sufficient (*Montoy III*), prompting the Legislature to hold a special July session and pass SB 3, providing an additional funding increase of $147 million. Once the Legislature received the results of the LPA cost study, it passed 2006 SB 549, which significantly changed the school finance formula. The changes included a three-year plan that would provide a total of $466 million in additional funding.

The 2000s: *Gannon v. State*

The SDFQPA and its finance formula held until the recession, when fiscal year 2010 saw a reduction in the base state aid per pupil (BSAPP), capital outlay state aid, and supplemental general state aid. In *Gannon v. State (Gannon I)*, first filed in November 2010, various plaintiffs again argued that the State violated Section 6, Article 6(b) by failing to provide a suitable education to all Kansas students. The Kansas Supreme Court issued its ruling in March 2014 and reaffirmed that Article 6 contains both an equity and an adequacy component.[xii]

The Court defined that the adequacy component is met "when the public education financing system provided by the Legislature for grades K–12 — through structure and implementation — is reasonably calculated to have all Kansas public education students meet or exceed the [Rose standards]."[xiii] The Rose standards consist of seven educational goals which will be discussed in-depth in Chapter 3 of this report. Explaining its selection of the Rose standards, the Court cited the decision of courts in several other states, including Massachusetts, New Hampshire, North Carolina, and South Carolina, to adopt this same "adequacy rationale and definition."[xiv] The Court also noted the district court's observation that the Rose definition of adequacy "bear[s] striking resemblance to the 10 statements or goals enunciated by the Kansas legislature in defining the outcomes for Kansas schools, which includes the goal of preparing learners to live, learn and work in a global society. K.S.A. 72-6439."[xv]

In *Gannon I*, the Court provided a definition for the equity component as well. For the equity component to be met, "School districts must have reasonably equal access to substantially similar educational opportunity through similar tax effort."[xvi] The Court noted an analogous issue faced by the Texas Supreme Court in *Edgewood Indep. School Dis. v. Kirby* (*Edgewood I*), in which it found that "The lower expenditures [per each student] in the property-poor districts are not the result of lack of tax effort. Generally, the property rich districts can tax low and spend high, while the property poor districts must tax high merely to spend low. 777 S.W. 2d at 393."[xvii] The Court found that under this equity test, both the capital outlay state aid and supplemental general state aid levels were unconstitutional. The case was then passed back to the Shawnee District Court panel.

The panel found the SDFQPA to be unconstitutional under the new test for adequacy.[xviii] The Legislature responded by repealing the SDFQPA and replacing it with a new finance formula, the Classroom Learning Assuring Student Success Act (CLASS Act). The CLASS Act was established as a two-year block grant of state aid for school districts, based on the amounts of state aid from SDFQPA but with some modifications.[xix] But in 2015, the panel found that the CLASS Act's funding was inadequate and, through its supplemental general state aid and capital outlay state aid equalization formulas, inequitable.[xx] The Panel's decisions were appealed to the Kansas Supreme Court, which determined that the equity and adequacy components were at different stages of resolution and expressed a need for "an expedited decision on the equity portion of the case."[xxi] The Court bifurcated the issues of equity and adequacy, with *Gannon II* and *Gannon III* ruling on equity and *Gannon IV* ruling on adequacy.

In February 2016 with *Gannon II*, the Court held that the State failed to show that it had rectified the constitutional inequities described in *Gannon I*.[xxii] The Court gave the Legislature until June 30, 2016 to solve these inequities, or else it would block all expenditures by the school finance system for fiscal year 2017,[xxiii] similar to the potential consequences named in *Montoy I*.

The Legislature responded by enacting 2016 Senate Substitute for House Bill No. 2655 (HB 2655). In *Gannon III*, the Court held that HB 2655 rectified the wealth-based disparities of the capital outlay state aid, but not those of the supplemental general state aid.[xxiv] The Legislature then passed Substitute for House Bill 2001 (HB 2001). In June 2016, the Court found that HB 2001 rectified the supplemental general state aid inequities, solving the equity portion of the case.[xxv]

In March 2017 with *Gannon IV*, the Court ruled on the adequacy component of the case. It concluded that the CLASS Act failed to meet both the structure and implementation requirements of the adequacy test.[xxvi] With respect to structure, the Court noted that the CLASS Act's block grants are merely a "funding stopgap" rather than a finance formula, and that its funding levels remains static from fiscal year 2015 through 2017, rather than responding to changing conditions such as increased enrollment.[xxvii] With respect to implementation, the Court examined the inputs to the K-12 educational system (the costs and funding sources of providing an adequate system) and the outputs (student achievement measures), and concluded that the funding levels and outcomes were both inadequate. It noted, for example, that the State was failing to provide nearly one-fourth of all public school students with basic skills in both reading and math, and that achievement gaps existed between student subgroups. The ruling relied heavily on the Rose standards, referring to it sixty-eight times.

The Court stayed all orders to give the Legislature the opportunity to enact a new, improved finance system by June 30, 2017, when the CLASS Act was set to expire.[xxviii] On June 5, 2017, the Legislature passed Senate Bill 19

(SB 19), which included the establishment of a new finance formula, the Kansas School Equity and Enhancement. Act (KSEEA). The Rose standards played a central part in its accountability measure, as KSEEA required the Kansas State Board of Education to design and adopt a school district accreditation system based on meeting or exceeding those standards.[xxix] The base funding per pupil was set to increase annually, and formula provided weightings for additional funds based on at-risk populations, special education, low enrollment, and other areas of concern. Furthermore, to address *Gannon IV*'s concern about stagnant funding failing to meet the needs of a dynamic environment with ever-shifting populations, KSEEA required LPA to perform regular audits to monitor whether the funding and weightings remain adequate.

Gannon V and Directed Court Action

In October 2017, the Kansas Supreme Court issued its fifth ruling on the Gannon case (*Gannon V*). The Court acknowledged that SB 19 "arguably makes positive strides" but ultimately concluded that KSEEA failed to satisfy both the equity and the adequacy requirements of Section 6, Article 6.[xxx] The ruling repeatedly noted that as mentioned in previous Gannon rulings, "the party asserting compliance with court decision ordering remedial action bears burden of establishing that compliance." That is, the State still carries the responsibility of clearly demonstrating how its remedial legislation brings the finance formula into constitutional compliance.

With regard to equity, the Court concluded that SB 19 included four major equity violations: (1) expanding the uses of capital outlay, (2) reinstating a procedure for districts to increase their Local Option Budget (LOB) funds, subject to protest-petition, (3) basing LOB equalization state aid on the preceding school year, and (4) setting a 10% floor for at-risk funding.

The use of capital outlay funds had previously been limited to certain property-related expenses, but SB 19 had expanded that to include property and casualty insurance, as well as utility expenses.[xxxi] Previously, a district would have had to pay these expenses from its general fund, LOB fund, or both. Because the use of these latter funds is generally unrestricted, this provided increased flexibility for school spending decisions. However, wealthier districts had a greater ability to shift these expenses to their capital outlay fund, and thus could benefit more from this flexibility than other districts.[xxxii] Additionally, the Legislature's equalization point for the capital outlay fund is lower than for the LOB fund, due to the former' historically limited uses, so if districts relied more on the capital outlay fund, the State would not have to provide as much equalization aid.[xxxiii]

As for the new procedure to raise local taxes for LOB funds, the Court noted that "a correlation exists between a district's wealth and its ability to gain voter approval of a board resolution that is certain to raise mill levies," and so wealthier districts would more likely succeed in increasing their tax effort to generate higher LOB revenue.[xxxiv] SB 19's third equity violation, basing LOB equalization state aid, is tied to the issue of increasing LOB funds as well. If a district qualifies for LOB equalization aid and does manage to raise its LOB level, its equalization aid would still be based on the previous year's aid, rather than on the new LOB level.[xxxv] Finally, the Court's fourth identified equity violation dealt not with local funds, but with state aid for at-risk students. Under SB 19, if fewer than 10% of a district's students qualify for free meals (i.e., the at-risk measure), the district would nevertheless receive the at-risk weighting as if 10% of its students qualified. According to projections, this would benefit only

two districts, and the Court felt that the Legislature did not provide justification for determining this 10% cutoff.[xxxvi]

When considering the adequacy component under KSEEA, the Court again discussed both its structure and its implementation. The plaintiffs argued that both structure and implementation were inadequate, but the Court held that the structure was adequate, as the plaintiffs' claims "involve too many contingencies and require us to make too many assumptions."[xxxvii] However, the Court determined that the funding's implementation was inadequate. To demonstrate adequacy, the State primarily used a "successful schools" model based on an analysis by the Kansas Legislative Research Department (KLRD). The analysis identified forty-one Kansas school districts that exceeded KLRD's performance expectations and calculating the average of their per weighted pupil base amounts. However, the Court sided with the plaintiffs, who argued that while these districts "outperform[ed] expectations," they did not meet constitutional standards for student performance outcomes, and many had high rates of students not performing at grade level for either reading or math.[xxxviii] In other words, they argued that the chosen districts "are perhaps merely the best, or the most efficient, of the constitutionally inadequate."[xxxix] The Court affirmed that the State's model was deeply flawed in defining success as exceeding expectations, rather than high test performance.[xl]

Furthermore, the Court determined that not only were the chosen schools' performance below constitutional adequacy, but the State's methodology of proving compliance was dubious. Deficiencies identified by the Court included "KLRD's virtually undisclosed review of the school districts," as well as "the brevity of its resultant memo and attachments" and "the timeliness of the presentation of those materials to a legislative body."[xli] The Court contrasted KLRD's quick, four-page report to previous, more comprehensive cost studies, particularly the LPA cost study, whose report and attachments totaled 344 pages. The Court also doubted the State's choice to employ a successful schools model, given that the LPA cost study had specifically rejected this model in favor of the more sophisticated cost function approach, and given that the State's own expert witness had previously testified that the successful schools model was "not reliable."[xlii]

The Court chose to continue what it identified in *Gannon IV* as its "general practice" to retain jurisdiction and stay its mandate, providing the Legislature with an opportunity to remedy the constitutional deficiencies in its school finance formula. The Court justified this practice by citing the Legislature's previous success in remedying these deficiencies, namely in *Montoy IV*, as well as the equity component following *Gannon III*.[xliii] However, the Court emphasized the need for urgency, stating that "the education financing system has been judicially declared to be inadequately funded for at least 12 of the last 15 years." The Court would stay its mandate until June 30, 2018,[xliv] but stated that after that, "the demands of the Constitution cannot be further postponed."[xlv]

Study Orientation

The Kansas Supreme Court's October 2, 2018 ruling (*Gannon V*) provides the Legislature until June 30, 2018, to bring the KSEEA into constitutional compliance. The Court has set a briefing schedule for arguing the merits of any school finance legislation passed in the 2018 legislative session that is enacted to rectify any constitutional infirmities with the KSEEA that begins on April 30, 2018.[xlvi] In responding to the Court's mandate, the Kansas Legislature retained this research team to conduct an adequacy cost study that is designed to "estimate the

minimum spending required to produce a given outcome within a given educational environment." In doing so, the research team investigated the following dimensions of the Kansas public education system:

1. Investigate the linkage between the Rose standards and implications for Kansas K-12 spending, which is discussed further in Chapter 3.
2. Explain why the option or options set forth by the study "produce an education system reasonably calculated to achieving those Rose standards," which is discussed in Chapters 2, 4, and 5.
3. Focus on the structure of the Kansas school finance formula as well as overall K-12 spending levels including forms of funding (local, state, and federal) available to Kansas K-12 schools, which is discussed in Chapter 5.

Importantly, this analysis is framed in large part by the extent to which educational data would be available to conduct such analyses. This, and other contributing factors for the analysis, are described in detail in Chapter 4.

Chapter 2: Literature Review

In conducting an adequacy cost study, it is important to review the research and evidence base supporting methodologies for these types of school finance investigations. As such, this section of the report investigates several of these topics, including: (1) explaining spending differences across school districts, (2) costing out study methods, (3) costing out study method suitability to Kansas, (4) improvements over previous Kansas costing out studies, (5) school district consolidation, and (6) ensuring the effective and efficient use of resources.

Spending Differences Across School Districts

The cost of education in Kansas varies by district for reasons outside of school district control. Put simply, some districts must spend more to provide similar educational services. There are three factors that account for this variation:

- Differences in the resource levels required to provide educational services to different student populations ("needs") will drive differences in educational costs. For example, disadvantaged, gifted, or vocational students may require additional services or resources relative to other students, and thus costs for districts with large numbers of these students will likely be higher.
- Differences in the prices districts must pay for educational resources, the most important of which is labor ("prices") will drive differences in educational costs. For example, districts operating in locations where the cost of living is high must naturally pay more to hire the same quality of teachers available to districts in other locations at lower cost.
- Differences in economies of scale will drive differences in educational costs. Small districts and schools may be unable to take advantage of the economies of scale available to larger ones, and therefore will likely need to spend more per-pupil than larger districts and schools to achieve similar results.

These three cost factors frame this study and provide an opportunity to explain why some school systems in Kansas must spend more in order to achieve similar student outcomes. In other words, addressing adequacy of the Kansas system of funding requires attention to both the level of funding and structure whereby it is allocated to individual districts.

Difference in Needs

While the precise amounts depend on numerous factors, it has been well established that different student populations require additional resources in order to achieve the same educational outcomes. In particular, policies at the state and federal levels acknowledge that additional resources are required to serve students who are (1) from low-income backgrounds, as indicated through qualification for free lunch through the National School Lunch Program, (2) English Language Learners, and (3) those receiving special education services.

There is near consensus that it costs more to educate students from low-income backgrounds to support equitable achievement of outcomes. Prompted by the Civil Rights Act of 1964, the federal government released a comprehensive national study on this issue in 1966, paving the way for federal policy supporting low-income students. Titled "Equality of Educational Opportunity" but often known as simply "The Coleman Report" after its principal author, the national study identified poverty and its related problems, including unstable housing, poor nutrition, and lack of healthcare, as causes for lower student outcomes. However, a wide variety of factors impact the cost of educating low-income students. For instance, one must consider that the federal poverty level of income is the same in New York City as in Salina, Kansas, or any other United States city. But these cities have very different costs of living levels, so being identified as economically disadvantaged has a different meaning in each context. The LPA's 2005 Kansas adequacy cost study calculated the poverty weighting as 0.70 in the median district, but it ranged from 0.65 in rural districts to 1.15 in urban districts (Duncombe, W., & Yinger, J. (2005). A more recent survey of the literature by Golebiewski (2011) found widely divergent estimates of the extent to which being economically disadvantaged contributed to the cost of education. As a general rule, the highest estimates of the differential costs associated with student poverty came from analyses of New York and the lowest cost estimates came from analyses of more rural states such as Arkansas, Arizona, Kansas and Texas.

Educating English Language Learner (ELL) students also requires additional funding, though research has shown that these costs vary by context as well. Factors influencing ELL's learning outcomes include socioeconomic status, parent education level, age entering the United States, and level of formal schooling obtained in the student's country of origin (Capps, et al., 2005). These additional challenges require additional supports, and thus, additional costs. Another cost factor is the number and proportion of ELL students who share a common language. Districts where most ELL students share a common language may have a cost advantage, as they can leverage the same materials, instructors, and other supports for many of their ELL students. Meanwhile, districts that lack this economy of scale will tend to have greater costs. Augenblick, Palaich and Associates (APA)'s 2005 statewide adequacy cost study for Pennsylvania calculated an ELL weighting ranging from 1.48 to 2.43, with smaller districts having the highest weights. Recent reviews of the literature — including Jimenez-Castellanos and Topper (2012), Golebiewski (2011) and Rumberger and Gandara (2008) — all found that the estimated range of costs is even wider for ELL students than for economically disadvantage students. For example, Duncombe and Yinger (2005) estimated that the cost of serving an ELL student in Kansas was a statistically significant, but tiny, 0.14 percent higher than the cost of serving a student who was not ELL. At the other end of the spectrum, Duncombe and Yinger (1997) estimated that the cost of serving an ELL student in New York was four times the cost of serving a student who was not ELL.

Similarly, there is no consensus on how much additional funding special education requires, as this too varies widely by context. Data from the nationwide Special Education Expenditure Project (SEEP) indicate that on average, in 1999–2000, the spending ratio for a student with special needs compared to a student with no special needs was 1.90. The data also indicate lower weights for larger districts, again presumably due to economies of scale. However, a comparison of several special education adequacy studies across the country highlighted additional major factors in cost variation: differing categories of student disabilities (e.g., deafness, visual impairment, autism, emotional disturbance, etc.), severity of disability,

and districts' varying approaches to assigning students to categories and severity levels. Diagnoses of disability can vary widely across physical, emotional, and behavioral bounds, each of which requires different combinations of resources to support the student.

Difference in Prices

Variation in the price of labor is a particularly significant driver of educational cost differentials in Kansas because salaries and benefits make up such a large share (approximately 81%) of elementary and secondary education expenditures in Kansas.[1] While there are other educational inputs with prices that also vary across the state (such as casualty insurance or electricity), these costs each make up a relatively small proportion of current operating expenditures, so incorporating those additional sources of price variation would likely have a very modest impact on the overall cost.

The costs of education investigate how districts are able to hire the same quality of teachers, administrators, and support staff despite regional differences in the prices they must pay for them (i.e., differences in the wage level). Districts of all sizes and with varying student populations must offer wages sufficient to staff their schools with qualified teachers, and districts in high-labor-cost locations must pay more than other school districts just to be able to hire comparable personnel.

As described in Taylor (2011), there are three basic reasons why public school teacher wages differ across individuals: the person, the job, and the location.

- **Person.** All else equal, people with stronger qualifications are paid higher wages. For teachers in Florida, as in most of the country, the key qualifications are experience and higher educational attainment. However, other qualifications may also be relevant such as verbal communication skills, certification to teach English learners or special education students, possessing a multi-subject teaching credential, or classroom effectiveness.
- **Job.** Differences in working conditions can also impact wages. A position with less desirable characteristics may need to offer a higher wage to compensate workers for this, or will be forced to hire less qualified individuals — or both.
- **Location.** Finally, differences in location can impact wages substantially. The same individual applying for comparable jobs in Kansas City compared to Topeka demand a very different salary for these positions. Moreover, many of the factors that influence these differences are outside of the control of districts (e.g., housing costs, local economy, crime rate, etc.).

The first two reasons are largely within school district control. A school district can choose the qualifications of the teachers it hires and can influence working conditions within the district. In contrast, the characteristics of the location are largely outside of school district control. As discussed in Taylor (2015), "only factors outside of school district control represent cost differences that should be accounted for in funding formulas and equity calculations."

[1] Calculation based on the ratio of salaries and benefits to total current expenditures. Data is from the National Public Education Financial Survey for the 2013–2014 school year at: https://nces.ed.gov/ccd/stfis.asp

There are generally two reasons why wages vary by location, all else being equal. The first of these is simply the cost of living. The prices for the same goods and services vary across the state, and thus one district must pay teachers more than another for the teacher to have the same "standard of living." In sum, the higher the cost of living, the more a district must pay teachers. The second is the relative attractiveness of a community. While attractiveness may be harder to measure precisely, it is no less significant than variation in the price of goods and services in determining wage levels. A location that has a high crime rate, little or no infrastructure (e.g., public transportation, reliable public services, etc.), and is isolated from recreational activities (e.g., movie theaters, beaches, restaurants, etc.) will be relatively less attractive than one with these amenities. As a consequence, districts in such locations would have to pay teachers more to recruit and retain them. In other words, the less attractive the community, the more a district must pay teachers.

As is evident from the description above, locational variation in teacher salaries is largely outside of district control. If this variation is not accounted for in a state's funding mechanism, those more expensive and/or less attractive districts would not be able to pay for a similarly high-quality workforce compared with less expensive or more attractive neighbors.

Economies of Scale

Economies of Scale is the third factor that explains the differences in costs across public schools and school districts. That is, some school systems like any other organization can provide a large volume of service — defined as instruction in the classroom, transporting students, feeding students, etc. — for a lower marginal cost. This cost of education has been well-documented and observed. For example, the per-pupil cost of operating a small district and/or school is much higher than the per-pupil cost of operating a larger one (Taylor, Gronberg, & Jansen 2017). Yet, in public education researchers have observed a U-shaped curve to economies of scale meaning that once the school district gets significantly larger we can observe some diseconomies of scale (Robertson 2007). There are a variety of explanations for school systems experiencing a diseconomies of scale. Relative to the circumstances of Kansas, research on economies of scale in education have found that geography forces the education system to have smaller school districts and schools which naturally creates some diseconomies of scale. Kansas has had various experiences in attempting to address such diseconomies of scale including various school district consolidation studies (Augenblick, Myers, & Silverstein, 2001; Augenblick, Myers, Silverstein, & Barkis, 2002; Legislative Divison of the Post Audit, 1992). Yet, recent research has shown that most cost savings through such consolidations are achieved at the school-level (Gronberg, Jansen, Karakaplan, & Taylor, 2015).

Costing Out Study Methods

Adequacy or costing out studies have been performed in at least 30 states as a method to estimate the cost associated with ensuring that all students have the opportunity to reach a particular level of performance based on standards set out by the state. There are two common approaches for these costing out studies, the input-based and output-based approach.

Table 1. Various methodologies for costing out studies

Input-based (resource-oriented) methods	Output-based (performance-oriented) methods
Professional judgement: *Based on current spending by a set of high-performing schools*	**Successful schools:** *Based on current spending by a set of high-performing schools*
Evidence-based: *Based on calculations linking performance outcomes with spending and other variables*	**Education cost function:** *Based on calculations linking performance outcomes with spending and other variables*

Each of these methods are explored in further detail below including a description of each method and then the strengths and weaknesses.

Input-based Method

Both of the approaches that are classified as bottom-up approaches rely on orienting their analysis from the lowest level of the system, e.g., classroom or school, to identify the necessary resources. There are two approaches. The first is the professional judgment method, and the second is the evidence-based method.

Professional Judgment approach

The professional judgment method involves convening focus groups of local educators and policymakers to design prototype schools that meet performance goals. Designing these prototype schools includes determining the resources (staff, equipment, etc.) required. Researchers then calculate cost estimates for these prototype schools in various settings, such as urban, suburban, rural, low-need, and high-need communities. Augenblick & Myers used this method as one of two approaches that it published in a study on costing out an adequate education in Kansas for 2000-2001 (Augenblick, Myers, Silverstein, & Barkis, 2002).

Evidence-Based

In the evidence-based method, a team of consultants' design prototype schools that meet performance goals. The consultants draw upon a wide body of education practices and strategies that have proven effective. While the professional judgment approach draws primarily upon practitioners' experience, the evidence-based approach relies more heavily on research.

Advantages and Disadvantages

A major advantage of both types of bottom-up approaches is that their methodology and results are relatively simple, transparent, and easily understood. Their practices are grounded in on-the-ground expertise from active practitioners, and they present not only *how much* should be spent, but *how* it should be spent. Furthermore, these approaches don't require that an "adequate" level of performance be defined or measured; both of these approaches are resource-oriented, rather than performance-oriented. While the practitioners and researchers keep a goal performance level in mind when determining resources, these methods typically do not estimate specific outcomes from prototyes.

This simplicity can be an advantage when conducting the cost study, but when evaluating the cost study, this tends to be a major limitation. For instance, the outcomes that an evidence-based model's strategies are "proven" to achieve may be different than the outcome goals set by policymakers. Another disadvantage is that neither method focuses on the cost-effectiveness of their recommended resource allocation. In evidence-based studies, cost estimates tend be based on the averages among districts, and while they do address the need for additional resources for certain demographics, they still may not accurately estimate the costs for actual districts that differ from the "typical" prototype, especially when multiple regional variables are at play. Professional judgment analyses carry this same weakness and may be vulnerable to blind spots and biases of individual experts on the panel. Crucially, this method produce specific recommendations that realistically reflect the needs of only a handful of prototypical districts.

Output-based Approach

While bottom-up approaches are resource-oriented, top-down approaches are performance-oriented. Such analyses are based on observed relationships between (a) school spending, (b) student performance, and (c) other school characteristics. There are two main approaches in this category — the successful schools method and cost function method.

Successful Schools

The successful schools method begins by identifying a set of schools with high performance outcomes in relation to the state's performance goals. Estimates of providing a quality education are then based on the lowest level of per-student spending among these actual, high-performing schools. Augenblick & Myers used this method as one of two approaches that it published in a 2002 study on costing out an adequate education in Kansas (Augenblick, Myers, Silverstein, & Barkis, 2002).

Education Cost Function

In the cost function method, cost and performance data are used to estimate the relationship between expenditures and other dependent and independent variables, including: school outcomes, resource prices, student needs, district size, and other relevant characteristics of districts. Once cost estimates for these relationships have been calculated, analysts can use these calculations to predict the cost of achieving a designated set of outcomes, taking into account the aforementioned factors. Duncombe & Yinger (2005) used this approach for the costing out study conducted in 2005 and subsequently published with complementary material from the Kansas Legislative Post Audit (LPA) division in 2006. The cost

function methodology has been refined over several decades of empirical application, and cost function studies have been undertaken for New York (Duncombe and Yinger, 1996, 1998, 2000, 2005; Duncombe, Lukemeyer, and Yinger, 2003), Arizona (Downes and Pogue, 1994), Illinois (Imazeki, 2001), Texas (Imazeki and Reschovsky, 2004a, 2004b; Gronberg, et al., 2004), and Wisconsin (Reschovsky and Imazeki, 1998).

Since that time, additional education cost function analyses have been conducted in California (Duncombe & Yinger, 2011b; Imazeki, 2008), Indiana (Zimmer, DeBoer, & Hirth 2009), Kansas (Chakraborty & Poggio, 2008; Duncombe, Lukemeyer, and Yinger, 2008), Kentucky and Maine (Lee, 2010), Massachusetts (Nguyen-Hoan & Yinger, 2014), Missouri (Baker, 2011; Duncombe et al., 2008; Duncombe & Yinger, 2011a), New York (Duncombe & Yinger, 2005); and Texas (Gronberg, Jansen, Karakaplan and Taylor, 2015; Gronberg, Jansen, & Taylor, 2011, 2017; Imazeki & Reschovsky, 2006).

Advantages and Disadvantages

A major advantage of top-down approaches is their grounding in a demonstrated standard of student achievement and actual per-pupil costs. Estimates are based on the actual experiences of students in the region, and cost function analyses can provide a strong empirical foundation for their estimates of cost differentials. The direct link between education costs and desired outcomes is particularly valuable from a policymaking perspective, as one can use these methods to estimate costs tied to a specific performance goal.

One disadvantage of the successful schools method, compared with other methods, is that while it directly links costs to outcomes, it generally does not describe in detail how funds ought to be used. Another disadvantage is that because its estimates are based upon only a sampling of schools, as with estimates based on prototypes, other variables may prevent these estimates from accurately reflecting the needs of schools in other contexts. While the successful schools method adds additional funding for certain student populations, such as those with special needs, limited English proficiency, and low-income backgrounds, it focuses primarily on identifying the "base cost" for per-pupil spending in a general education context.

The cost function approach avoids many of these disadvantages. Because it establishes a cost relationship with a wide variety of variables that could potentially affect student outcomes, drawing from a larger set of schools — potentially the entire state's — it can more easily control for variables within different school contexts. However, the estimates of cost function studies still have limitations. By design, statistical models describe relationships between current data, so extrapolating to performance standards outside current experience is problematic. For example, resources may provide diminishing returns at a certain level of high performance, and so if unprecedented goals are set, the projected estimates for required resources may still be inadequate.

Because cost function studies are grounded in data, another potential disadvantage is that they require high quality measures of current performance and expenditures. Similarly, for a cost function study to inform policy, policymakers must set goals based around *measurable* performance outcomes. With its higher level of complexity and economic modeling techniques, a cost function study tends to be more difficult to explain in non-academic settings. Statistical models are not readily transparent, and they require analysts to make judgment calls that inevitably affect the results.

Cost Study Method Suitability to Kansas

The education cost function approach is, among the four methods, the best suited to the circumstances of Kansas. This is not only because the approach is the most precise, but because it controls for the presence of certain circumstances and contexts. Augenblick & Myers (2002) explained this in the first cost study conducted for Kansas, when they said:

> *"The statistical approach [the education cost function approach] is based on understanding those factors that statistically explain differences in spending across school districts while 'controlling' for performance. In some sense, the statistical approach is the most powerful of the alternatives and is subject to the least manipulation. However, it has proven difficult to explain how the approach works in situations other than academic forums. The approach requires the availability of lots of data, much of which needs to be at the school or student level in order to be most useful."*

In other words, the education cost function approach can be the most robust method to estimate the costs associated with providing an adequate education. In the circumstance of Kansas, there are several supporting points to this fact, including: (a) ability to consider the entire student and school population, (b) presence of strong student- and school-level data enabling better estimation and alignment to the Rose standards and (c) improved statistical techniques over 12 years after the Duncombe & Yinger (2005) analysis was conducted.

Ability to Consider the Entire Student and School Population

The first major advantage of the education cost function approach is that it accounts for the wide diversity across Kansas's 286 public school districts and over 1200 schools. Enrollment ranges from 57 students in Healy Public Schools to 50,416 students in Wichita Public Schools. Some districts serve ELL students from a wide variety of backgrounds, with 119 languages represented in Wichita,[2] while other districts, like Labette County, Osawatomie, and Kaw Valley school districts have no ELL students at all.

[2] Wichita Public Schools. 2017-2018 District Snapshot. Retrieved from https://www.usd259.org/domain/954

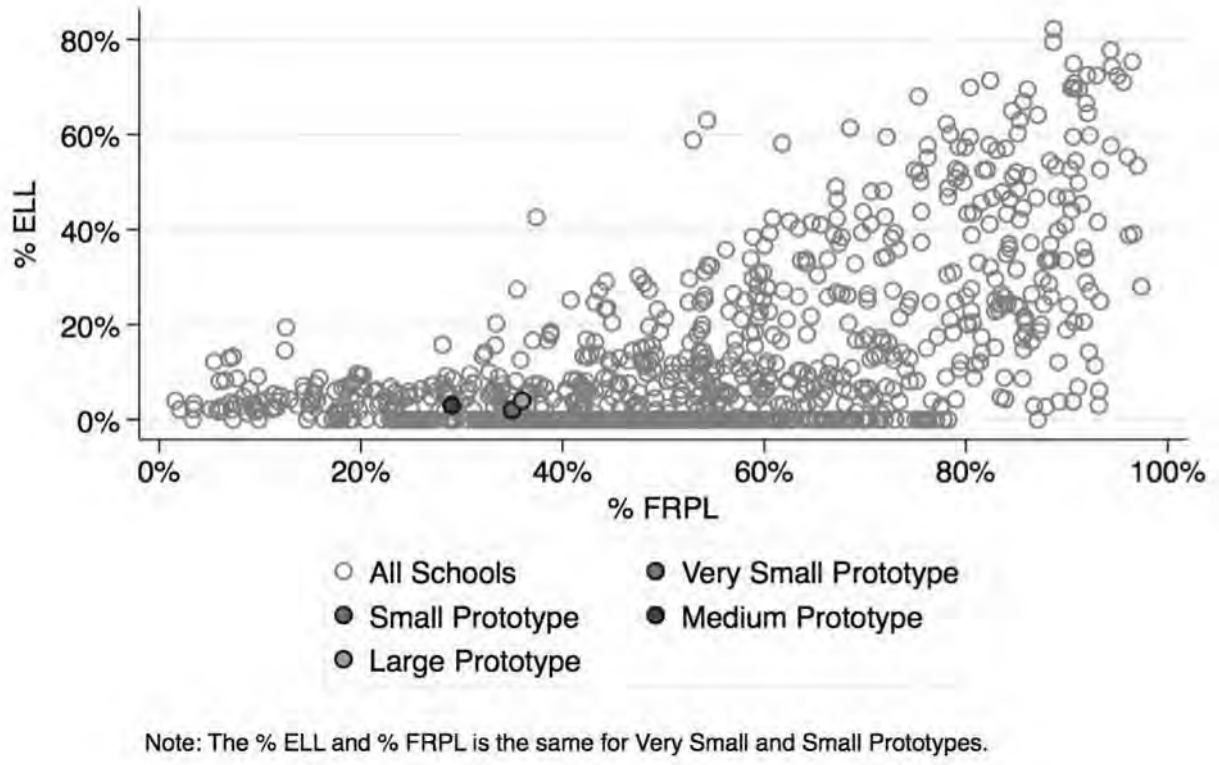
Augenblick & Myers (2002) attempted to simplify school districts' diversity by grouping them into four size categories (quartiles), so that each quartile contained an equal number of school districts and an equal number of students. When the quartiles reflected an equal number of districts, the districts in the largest quartile of districts enrolled 75.3 percent of all students, with about 4,429 students per district and 10.2 schools per district. Meanwhile, districts in the smallest quartile enrolled 3.5 percent of all students, with about 208 students per district and 2.3 schools per district. Then the quartiles reflected an equal number of students, there were four districts in the largest quartile and 230 schools in the smallest. The researchers used this information to construct four prototype districts representing each size category, which they then used for their cost estimates. The characteristics of these four prototype districts are shown in the table below.

Table 2. Characteristics of Prototypes Used in Professional Judgment Model (Augenblick & Myers, 2002)

Prototype School and District Characteristics	Very Small	Small	Moderate	Large
Range in Enrollment	#324	325–555	556–3,600	#3,600
Size of Prototype District	200	430	1,300	11,200
Size of Prototype School				
Elementary	140	150	200	430
Middle	-	-	300	430
High School	60	130	400	1,150
Number of Prototype School				
Elementary	1	2	3	12
Middle	-	-	1	6
High School	1	1	1	3
Proportion of Students in Special Education (%)	14	14	13	14
Proportion of Students Eligible Free/Reduced Lunch (%)	35	35	29	36
Proportion of Bilingual Students (%)	2	2	3	4

By contrast, our current study considers the variations associated with the entire range of schools and school districts in Kansas. A comparison with the chart below illustrates the more expansive view afforded by this methodology.

Figure 1. Percentage of English Learners by Free Lunch Schools, Identified A&M Prototypes



Note: The % ELL and % FRPL is the same for Very Small and Small Prototypes.

Figure 1 shows the number of schools (observations) that compared to the four prototype school used in the professional judgment method used by Augenblick & Myers in the 2001 cost study. We can observe that the cost function method will enable the observation of significantly more variation and types of schools as compared to the professional judgment model used in the Augenblick & Myers study.

Presence of Strong Student- and School-level Data

The comprehensive data calculations used in an education cost function study are not feasible to generate in every circumstance, as one needs to have data available for this broad range of factors. Fortunately, in the case of Kansas for our current study, this was not a problem. Kansas has been nationally recognized for the quality of its education data collection, use, and reporting. In the 2014 report by the Data Quality Campaign, an education data survey in which 46 states and the District of Columbia participated, Kansas was recognized among the top states. A key component of the survey is the Data Quality Campaign's "10

State Actions to Ensure Effective Data Use," and Kansas was one of only ten states implementing nine or more of the recommended actions.

Kansas's diligent data collection allowed for our current analysis to incorporate considerably more factors than most previous cost studies. Most studies concentrate on district-level data and basic measures of student performance, such as standardized assessments. Duncombe & Yinger (2005) and Augenblick & Myers (2002) both acknowledged this as limitations of their own studies. However, the availability of student-level and teacher-level data, as well as postsecondary data and regional characteristics, allows our analysis to incorporate many more factors at work. This also enables us to view variables' relationships in greater detail; for example, the ability to assign costs of educating students to the building level allows us to create a stronger relationship between costs and outcomes for students.

Additionally, now that significant efforts have been made to align the Kansas public education system to the Rose standards, this analysis can more accurately assess the costs of an "adequate" education, as defined by achievement of the Rose standards, than had previously been possible. As we discuss in Chapter 3, Kansas's state education agencies have oriented their Multi-Tiered System of Support (MTSS), school district accreditation standards, and the Kansas College and Career Ready Standards toward achievement of the Rose standards. School districts have configured their resources accordingly, and so by using data that reflects the current landscape of Kansas's public education system, we can get closer to calculating the cost of achieving the Rose standards statewide than had ever been possible before.

Ensuring the Effective and Efficient Use of Resources

To encourage districts to use resources efficiently — that is, cost-effectively — federal and state agencies have implemented a number of accountability systems over the decades. Some accountability systems, like the federal No Child Left Behind (NCLB), have been criticized for pressuring schools to focus their curriculum toward standardized test achievement or for the counterproductivity of their sanctions (Nichols, Glass, & Berliner, 2005). However, the concept of an accountability system still holds tremendous value, particularly in advancing educational equity. Both through rewards and sanctions and through the public reporting of school progress, accountability systems can be a powerful tool in focusing resource allocation toward improving outcomes for disadvantaged students. Furthermore, after years of practitioners' vocal dissatisfaction with previous accountability measures, the landscape of federal and many states' policy has been shifting toward more flexible accountability systems. For example, many states have reformed their accountability systems to measure success indicators beyond standardized test scores, such as graduation rates and other college and career indicators, and to offer comprehensive support systems to low-performing schools, rather than merely rewards and sanctions (Center for American Progress and the Council of Chief State School Officers, 2014).

It is important to keep in mind that while adequate funding is necessary for achieving desired student outcomes, funding alone is not sufficient; the funds must also be put to effective use. After all, schools with similar student populations, receiving similar funding, can have vastly different student outcomes due to differences in local policies and practices (Williams, Kirst, Haertel, et al., 2005). Thus, if one fails to consider *how well* resources are used, then increasing *how much* resources are provided may have a

limited effect on student outcomes. This section will discuss evidence-based strategies and practices for maximizing the effect of provided resources.

Effectiveness vs. Efficiency

First, we must clarify the distinction between *effectiveness* and *efficiency*. Effective is defined as "producing or capable of producing a desired result."[3] In an education context, effectiveness is then measured by program evaluation: i.e., whether a program produces desired student outcomes. Meanwhile, efficiency refers to cost-effectiveness: achieving the desired outcomes while minimizing resources used. While attempts to improve efficiency sometimes lead to cost-cutting, it is crucial to remember that efficiency still requires the achievement of desired outcomes. Consequently, minimizing resources at the expense of desired outcomes does not improve efficiency, but simply reduces effectiveness.

Effective Decision-Making

The power to affect how effectively and efficiently resources are used fundamentally rests with the decision-makers — i.e., local education leaders at the district and school level — who direct how available funds will be spent. Organizational behavior research suggests that while institutions may be tempted to try to hire individuals who possess an inherent "effective decision-making" capability, attempts to do so have limited success, as this skill is not strongly correlated with intelligence or experience (Dalal & Bolunmez, 2016). Indeed, intelligence can lead decision-makers to rely on cognitive shortcuts rather than engaging in a deeper analytical process (Stanovich, 2009), and experience can lead decision-makers to be overconfident and fail to weigh all possibilities (Russo & Schoemaker, 1992) Rather, research indicates that effective decision-making is a skill that can be developed and which strongly benefits from utilizing proven strategies.

Three such strategies include: (1) "consider the opposite," (2) taking an outside view, and (3) constructing a linear decision model. Each of these can be routinized in an organization, helping build leaders' decision-making capacities and limiting the likelihood that a decision-maker will default to common biases.

In the "consider the opposite" strategy, decision-makers are tasked with generating reasons why their initial decision may be the wrong choice (Larrick, 2004). This approach prompts decision-makers to consider information that they otherwise may not have thought about and prompts them to plan for a greater range of possible scenarios. Numerous studies have shown that the "consider the opposite" strategy increases decision-makers' accuracy when estimating the probability of a given result occurring (Lord, Lepper, & Preston, 1984; Hoch, 1985; Soll & Klayman, 2004). When making decisions, the ability to make the best choice largely hinges upon the ability to accurately gauge the likelihood of various outcomes. By improving this gauge — specifically by reducing overconfidence and expanding the information base — this strategy can thus lead to better and more well-informed decision-making.

[3] *effective*. Retrieved March 9, 2018, from https://www.merriam-webster.com/dictionary/effective.

One possible limitation of the above strategy is if the decision-maker's biases hinder his or her ability to think of the true "opposite." For example, research has shown that when tasked with thinking of a worst-case scenario that could result from a decision, a decision-maker often thinks of only a mildly undesirable scenario, rather than the true worst case (Kahneman & Lovallo, 1993). Bringing in outside parties can help this, such as in the "Devil's Advocate" form of this strategy, in which another person is enlisted to argue against the decision-maker's initial choice. However, a more effective way to combat this limitation may be through the addition of the next strategy: taking an outside view.

In the "outside view" strategy, a decision-maker must research several previous decisions, made by others, that share similarities with the current favored decision. The decision-maker can then examine these similar decisions through the lens of an outsider. In order to reduce an optimistic bias, these examples must include some similar decisions that could be seen as failures. Some researchers suggest that the decision-maker should seek out at least six similar decisions for comparison (Lovallo & Sibony, 2010). The decision-maker can then study the various properties of these previous decisions and use this data to inform the current one. For example, this might inform the decision-maker's estimates as to: how likely the decision is to produce the desired outcome(s), how long it will take to implement the decision, and possible pitfalls.

As decision-makers begin to carefully examine data, this leads to the third, and more advanced, strategy: constructing a linear decision model. Also known as a "weighted additive" model or an "actuarial" model, this decision-making process requires the decision-maker to: (1) determine the available options, (2) determine the factors involved in each option, (3) assign importance ratings or "weights" to each factor, (4) rate each option on each factor, (5) use these cumulative ratings to calculate the overall "score" for each option, and (6) choose the option with the highest score. This model is frequently used, for example, when admissions committees consider various applicants. To reduce admissions committee members' biases and more accurately compare applicants on all of their respective assets, the committee might assign a weighted value to applicants' essays, test scores, etc. Once each of these factors is graded, the applicant can receive a total score, which can more easily be judged against other applicants' scores. Linear models have been shown to consistently improve decision-making in terms of both accuracy and transparency (Rolf, 2005).

Realistically, however, it would likely not be feasible to construct a linear decision model for every decision that one must make throughout the workday. In some cases, decisions must be made more quickly and with less effort. Stanovich and West (2000) coined these two categories of decision-making as System 1 and System 2. The System 1 thought process is fast, automatic, and effortless, while System 2 is slower, more deliberate, and effortful. All three of the aforementioned strategies, with their careful consideration of non-intuitive information, fall into System 2.

Recognizing that System 2 strategies are not appropriate for every context, institutions can instead put policies in place that encourage the best possible results from System 1 decision-making. For example, research has established the existence of a "status quo" bias, meaning that decision-makers are more inclined to stay with the current or default option than to opt for a change (Ritov & Baron, 1992). This known bias can then be leveraged to encourage positive outcomes. For instance, research has shown that by making enrollment in a retirement savings account (Benartzi & Thaler, 2007) or an organ donation

program (Davidai, Gilovich, & Ross, 2012) the default status, rather than an "opt in" choice, a much higher proportion of people will participate. Another strategy to improve System 1 decision-making is to ensure that multiple options are considered, rather than just the status quo and one alternative. An analysis of businesses, nonprofits, and government entities showed that 70 percent of the time, when leadership teams are faced with important strategic decisions, they only consider the status quo and one alternative. Yet adding multiple options has been shown to improve the quality of the decision (Lovallo & Sibony, 2013). Thus, even when time and resource constraints may limit opportunities to engage in a deep, analytical decision-making process, policymakers at any level can routinize policies that encourage more effective decision-making.

Data-driven Decision-Making

Whenever possible, leaders and practitioners should approach decision-making with an analytical, data-driven process. Effective data use enables decision-makers to learn more about the educational system's processes and outcomes, identify successes and challenges, discover specific areas of improvement, and evaluate the effectiveness of programs and practices (Mason, 2002). Many studies also suggest that data-driven decision-making carries strong potential to improve student performance (Alwin, 2002; Doyle, 2003; Johnson 1999; Johnson, 2000; Lafee, 2002; McIntire, 2002).

However, to institutionalize data-driven decision-making across the system, leaders must clarify expectations, define a structure, and provide guidance on effective data use. Conceptions of what constitutes valid evidence and effective evidence use varies across school and district staff roles. For instance, research suggests that top-level district administrators may have more faith in research as a guide to policy and practice, compared with principals and teachers, and they may have stronger conceptions of what constitutes high-quality research. Meanwhile, bringing a student-level, on-the-ground perspective, teachers may strongly value evidence that reveals insight into student thinking and reasoning (Coburn & Talbert, 2006). A consistent finding is that many school administrators and teachers lack formal training or experience in analyzing data or using assessment results to inform instruction or program improvement (Lachat & Smith, 2005).

Schools systems that have successfully implemented data-driven school improvement processes show many similarities, so these may provide a helpful framework (Halverson, Grigg, Pritchett, & Thomas, 2007). First, the typical school improvement cycle begins with collecting, organizing, and storing data. This includes inputs, such as student demographics, budget information, and master schedules, as well as outputs, i.e., student outcomes. Second, school leaders provide time to collaboratively reflect on local data. This includes breaking down state assessment data to the student level. Teachers then have the opportunity to connect student performance to social and behavioral data, providing deeper context for the results. Third, school leaders and educators consider program alignment. Together, they examine current programs, compare outcome data to collective goals, and identify gaps in meetings the needs of students. Fourth, the group works on program design, keeping the focus on perceived instructional needs. Curricula, pedagogies, and student service programs may be created, adapted, or removed. Fifth, educators study student progress through "formative feedback": local, continuous, two-way communication between teacher and student that reflects student learning. Examples might include student questions, quiz results, and teacher comments on student work. Finally, when incorporating

standardized test preparation into the school curriculum, these data-driven schools make efforts to authentically integrate the content and test-taking skills into the regular curriculum, rather than diverting students toward temporary, test-focused lessons and drills. Together, these steps form a cycle, and through consistent iterations of this cycle, school leaders can collaboratively make careful, gradual improvements to the system.

Before implementing strategies for data-driven decision-making, school systems find the most success when they lay the necessary foundation. This includes (1) establishing specific, measurable goals at the system, school, classroom, and student levels, along with an aligned curriculum; (2) setting norms and expectations for data use, to be reinforced throughout the process; (3) investing in a user-friendly data management system with appropriate access for staff at varying levels; (4) determining which types of data will be collected; and (5) build staff capacity to utilize data (Datnow & Park, 2010). This last, but highly critical piece, may include professional development, modeling of data use, time for teacher collaboration, and opportunities to connect and share strategies with educators at other schools.

While much of the conversation around supporting effective data use focuses on the school level, central district offices also play a critical role in this improvement process. At the vision-setting stage, district offices can influence the goals and expectations around data use (Honig & Venkateswaran, 2012). In terms of capacity-building, districts can be a main provider of professional development and external resources (Park & Datnow, 2009). Perhaps the most unique role of district staff in this process is in the collecting, sifting through, and distribution of important information to school staff. For example, district staff may guide school staff in improvement efforts by selectively providing information on evidence-based programs that seem relevant to the particular school's context, and they frequently serve as schools' main source for district-wide and state-wide assessment data (Honig & Venkateswaran, 2012). Even for school-level and classroom-level decisions, district offices thus serve as a key partner in promoting and supporting the use of data-driven decision-making.

Use of Networks to Improve at Scale

While some schools and districts have uncovered effective practices for improving student outcomes, this poses the question of how to transfer this knowledge to others and, when possible, how to scale it to other school systems. One concept to keep in mind is that effective programs and practices do not exist on their own; they rely on full integration with the larger system. If a program is adopted blindly, without a complementary framework supporting it, the program may collapse or fail to achieve its intended outcomes.

One study examined 60 years of school-community partnership programs at troubled, urban high school in Boston. Among these programs was a wildly successful small learning community (SLC) piloted by the school during the 1988 recession (Leonard, 2011). The SLC consisted of a public service-oriented academic track for 90 students, with teachers and a community partner working closely together to promote student development and keep students motivated toward the goal of attending college. This partnership included the involvement of a career specialist who would speak with parents about potential conflicts between students' school and work schedules, with teachers about students' academic priorities, and with employers about matching students' interests with job requirements. Within four years, 95 percent

of this program's students were enrolling in college, and the program sustained its success through 2003. By comparison, the school's overall high school graduation rate ranged from 27 percent in the 1980s to 41 percent in the late 1990s.

Yet in this same school, the study found a similar example of a community partnership that failed to integrate itself with the rest of the school site's system, and consequently failed to achieve similar outcomes. This second partnership, launched in 1999, had a similar goal: to support and motivate a cohort of 60 students to graduate and attend college. Two full-time tutors were placed inside the school to implement this program, and students enjoyed the services provided. However, in contrast with the earlier SLC program's instructors, these tutors operated independently and did not communicate with parents, teachers, administrators, or other adults in the students' support network. As a result, the program came into conflict with the school's regular operations, students received mixed messages, and the program was unable to create a focused, cohesive culture of achievement like that seen in the previous SLC. The dropout rate for students in this program resembled that of the school at large, and so the program was quickly discontinued.

One way to examine the structures in place, and the crucial interaction between them, is to use the ecological theory developed by child psychologist Urie Bronfenbrenner. Bronfenbrenner introduces the idea that a developing child is surrounded by several layers of relationships (Bronfenbrenner, 1979). The inner layer, or *microsystem*, consists of the environment in which the child has a direct, personal relationships, such as with parents, teachers, or friends. Beyond this is the *exosystem,* an outer circle of people who indirectly influence the child's development; in an education context, this could include central school administrators, school committee members, state policymakers, foundations, and community partners. Finally, the largest circle, or *macrosystem*, consists of the cultural or economic conditions in the child's society at large, e.g., racism, poverty, and cultural expectations. To have a positive effect on a child's development, one should be mindful of the different systems at play and should aim for changes in the microsystem and exosystem to work harmoniously together. Creating a system for effective change thus requires communication and collaboration between, for example, those in the exosystem who decide policy and launch initiatives, and those on the ground who interact every day with students.

Once there is a shared understanding between all parties involved in the change effort, an attempt can be made to scale education best practices across larger systems. To maximize chances of successful implementation within new environments, it is important to consider the conditions in which these best practices were initially implemented, and be open to adjusting implementation as necessary to fit the new circumstances (Klinger, Boardman, & McMaster, 2013). One of the most widely-scaled best practices is Schoolwide Positive Behavior Supports (SWPBS), with over 14,000 public schools having adopted the practice (Debnam, Pas, & Bradshaw, 2012). SWPBS aims to both reduce student behavioral problems and promote a positive school climate. Researchers have examined what led to successful, sustainable adoption of this practice, as well as less successful attempts. Four components identified were identified as significant in ensuring sustainability: (1) priority, (2) effectiveness, (3) efficiency, and (4) continuous regeneration (McIntosh, Horner, & Sugai, 2009). First, the change effort must be supported as a *priority* at all levels, including through sufficient funding. Second, the change should be evidence-based, so that

school personnel will recognize its proven potential for positive outcomes, and it should be implemented with as much fidelity as possible for the given context, in order to maximize *effectiveness*. Third, leaders should pay attention to local capacity and do what they can to assist with the *efficiency* of implementing the new practice, e.g., through professional development. Finally, through *continuous regeneration*, data should be used to monitor, adjust, and improve implementation, based upon outcomes and issues observed within the current system.

A recurring thread throughout much of the research is that authentic educator buy-in and engagement, along with sufficient supports for educators, are critical for the success and sustainability of change efforts. A leading strategy to actively involve educators, develop their capacity, and create a supportive peer group has been the establishment of Professional Learning Communities (PLCs) within schools and districts. PLCs aim to empower teachers as active agents of change, rather than passive recipients of new practices that they're instructed to implement. For example, in 2013, eight school districts in Rhode Island formed the East Bay Professional Learning Community (PLC), a three-year project focusing on rethinking effective student assessment practices (Dillon, Erkens, Sanna, & Savastano, 2015). Each participating district formed a handful of small teacher teams, with teachers representing all subject areas and grade levels. Teams then launched research action plans, guided by an external consultant, to build more balanced, comprehensive assessment systems focused on rigor, relevance, and relationships. The consultant provided inspiration through evidence-based ideas, as well as personalized coaching, feedback, and guidance regarding system integration. However, the teachers took ownership of the decision-making, research, data collection, and implementation of their action plans. Furthermore, teachers who participated in the three-year project were then responsible for carrying on the work and coaching other teachers in the future.

The PLC model thus emphasizes district-level, school-level, and teacher-level ownership, as well as authentic learning from and collaboration with colleagues. All of this leads to genuine educator capacity-building and sustained engagement in the improvement process. An analysis of ten empirical studies of PLCs in the U.S. and one multisite study in England found that in all eleven studies, PLCs had demonstrably shifted each school's professional culture toward one more focused on collaboration and improvement (Vescio, Ross, & Adams, 2008). Evidence of these shifts included new collaborative structures such as sharing lesson plans, observing in one another's classrooms, and participating in "critical friends" peer evaluation groups. While many PLC studies focus on educator outcomes, some studies have also demonstrated a positive relationship between PLCs and improved student outcomes, including classroom grades, performance on state achievement tests, and graduation rates (Lomos, Hofman, & Bosker, 2011; Jackl & Lougée, 2012).

Yet the value of a PLC rests not only in its ability to build educator capacity, but also in its grounding in *improvement science*. Improvement science is a disciplined approach to educational innovation, integrating problem analysis, research, solution development, measurement of processes and outcomes, and refinement of the change idea through repeated testing. Not all PLCs have an improvement science basis, but as the Carnegie Foundation for the Advancement of Teaching (2015) reports, a growing number of education professionals are recognizing that by leveraging these analytic thinking and systematic testing methods developed by the scientific community, they can achieve better outcomes more reliably

(Bryk, 2015). To do so, improvement science-based networks, also known as networked improvement communities (NICs), draw on the expertise of practitioners, researchers, designers, technologists, and others.

An external consultant typically provides guidance and coaching in improvement science methodology, while the education professionals participating in the network apply the methodology to their school or district's problem of practice. Once they've developed a solution, practitioners apply the change idea to their system and participate in plan-do-study-act (PDSA) cycles, akin to mini experiments, in which they rapidly refine and retest the change idea (Park, Hironaka, Carver, & Nordstrum, 2013). The improvement science methods utilized by NICs are valuable for scaling change for several reasons. First, this methodology requires that practitioners examine the school or district system that's already in place, and examine the many factors at play, before developing solutions. As a result, they can strategically craft solutions customized for their particular system. By developing measures of processes and outcomes, practitioners can more reliably measure the results of their testing. By refining and retesting the change idea, practitioners can further increase the likelihood of finding a solution that achieves the desired outcomes within their system. Finally, by developing this knowledge and expertise in improvement science — particularly with a cohort of colleagues from the same school or district — practitioners can apply these same principles to other problems within their system and, ideally, shift their institution's professional culture toward one of continuous improvement.

The shift toward data-driven decision-making, as well as empowering local leaders and educations to actively participate in driving system-wide improvement, offers unprecedented potential for effective resource allocation in public education systems nationwide. By leveraging practitioners' on-the-ground experience and local knowledge along with evidence-based, systematic improvement processes, decision-makers can optimize targeted alignment between resource allocation and student educational needs.

Assessing Resource Allocation

When assessing the effectiveness and efficiency of resource allocation, viewing the full timeline of resource flow can provide a fuller picture. In 2013, the Organisation for Economic Co-operation and Development (OECD) issued its *Review of Policies to Improve the Effectiveness of Resource Use in Schools*, which provides a helpful map of how resources flow and are implemented across all levels (primarily from district level to student level.) The OECD framework conceptualizes this resource flow into four stages: *resource governance*, *resource distribution*, *resource utilization*, and *resource management*. At each level within the system, the processes involved in each of these four stages can be assessed for effectiveness and efficiency.

Resource governance is where the resource flow originates, and this extends beyond the district level. Governance decisions include: the level of funding that will be available for education, the sources of revenue, the distribution of decision-making power across the school system, the definition of priorities and targets, and the implementation of policies. Naturally, much of this responsibility rests at the state level, with reverberating impacts throughout other levels.

Resource distribution occurs next. These decisions include: the distribution of school facilities and physical resources across the region; the distribution of resources among school levels (e.g., primary, secondary);

the distribution of teachers, administrators, leaders, and professional development programs between various schools; and the distribution of resources targeted toward specific student groups (e.g., special education, ELL.)

Resource utilization then refers to the organization and specific application of resources to meet the identified needs. This includes the allocation of teacher resources (e.g., class size, use of teacher time), the structuring of school schedules, and selection of programs to meet student needs.

Finally, resource management involves the ongoing monitoring of resource use, auditing systems, staff management, reporting requirements, and program evaluation.

Each of these stages supports the next, and so deficiencies in any stage, or between levels, can hinder the effectiveness or efficiency of those parts of the system that depend on it. For example, if resource governance provides too little decision-making power in the hands of local school leaders, this may restrict schools' ability to distribute resources in a way that effectively targets their specific student populations' needs. If resource distribution provides too few instructors for high-need schools, then when it comes to program utilization, classroom instruction will suffer. Thus, resource allocation requires coordination and communication between each stage and between each level. Moreover, resource allocation decisions can be assessed for effectiveness within each stage and level.

When it comes to assessing the effectiveness of resource allocation, there are several methods to utilize. If evaluating for both effectiveness and efficiency, it is important to consider both inputs, i.e., resources, and outputs, i.e., educational outcomes. Three methods that consider both inputs and outputs include *cost-effectiveness analysis*, *cost benefit analysis*, and *cost-utility analysis* (Hollands & Levin, 2017).

Cost-effectiveness directly compares the investment cost with its impact on outcomes. For example, if a supplementary reading program costs $4,000 per student and leads to an average increase of 5 points in ELA scores, the program's cost would be $800/point per student. This can be useful when comparing potential options with different costs and outcomes. For example, another reading program might cost $6,000 but leads to an increase of 10 points in ELA scores ($600/point per student.) The second program has a higher cost but is more cost-effective, and so if the district can afford both, the second program may be the more worthwhile investment.

A cost-benefit analysis is similar, although cost-benefit analyses assign a monetary value to the outcome measure. For example, if the $4,000 supplementary reading program raises student performance to grade level, it might avoid the necessity of providing an $8,000 intensive reading intervention for each student later on. From a purely financial standpoint, the cost-benefit analysis then determines that the program is worth the investment.

A cost-utility analysis resembles a cost-effectiveness analysis, except that the cost-utility analysis considers external factors which may not be quantifiable. For instance, along with assessing costs and student outcomes, this analysis might consider teacher concerns, parent preferences, and compatibility with the current curriculum. If a more cost-effective program presents major conflicts in these areas, then decision-makers may opt for a less cost-effective, but overall more compatible choice.

Bringing it All Together: A Framework for States

For school and district leaders to make effective spending decisions, the state must lead the way. We propose a four-part framework outlining how state leadership can enable districts to maximize effectiveness and efficiency throughout their school systems.

- **Flexibility:** For resource allocation to become more effective, changes to investment decisions must be possible at various levels of the system, including local levels. For example, California's accountability system, the Local Control Funding Formula (LCFF), allows substantial flexibility for districts to determine how best to allocate resources in order to meet the needs of underperforming student groups (California Department of Education, 2018).
- **Accountability**: Effective and efficient spending requires clear, system-wide expectations. While accountability systems should allow some flexibility, they should also set expectations that the *inputs*, *outcomes*, and *processes* are aligned with the state's standards for achievement and equity. For example, while inputs, i.e., funding, and outcomes, i.e., student performance goals, may already be outlined by the state, an optimal accountability system would also require evidence that districts are engaging in strategic, equity-focused continuous improvement processes.
- **Support:** Research strongly suggests that effective decision-making is a skill that must be developed and improved. It indicates, too, that local capacity to use data for school improvement efforts is still lacking. Support is needed at every level to guide schools and districts in planning strategically, utilizing data, participating in continuous improvement cycles, and focusing their financial flexibility where it will be most effective.
- **Transparency**: Public education spending affects a variety of stakeholders, and ultimately, decision-makers are responsible for allocating resources to effectively serve the educational needs of students in their community. It is therefore critical that these decisions be made transparent to key stakeholders. However, state-mandated transparency measures, such as required data collection and financial reporting, should focus on data that meaningfully informs strategic decision-making and resource use. Otherwise, districts may waste time and effort capturing specific data purely for compliance reasons, distracting them from the important work of strategic improvement.

Chapter 3: Translate Rose Standards to Measurable Outcomes in Kansas

One of the central themes present throughout the court documents in the *Gannon v. Kansas* adequacy case are references to the Rose standards. This section of the report aims to deconstruct the Rose standards to understand their alignment to the current state of the Kansas K-12 public education system including accompanying measures and thresholds of performance. In order to do this, this section recounts a brief history, summarizes actions by various Kansas state governmental bodies to respond to the court's references to the standards, reviews other states' experiences with the Rose standards, articulates a potential pathway from the standards to measurable outcomes, and discusses the importance of the proportion or cut points associated with these measurable outcomes.

History of the Rose Standards

The Rose standards were originally evoked in the 1989 Kentucky state supreme court ruling in *Rose v. Council of Better Education.* Among legal scholars, this was noted as one of several landmark cases that signaled a shift away from a focus on the inputs to education, e.g., resources, teachers, etc., and rather a focus on the outputs of education, e.g., students achieving a desired outcome. The lawsuit claimed, and the state supreme court agreed, that the standard upon which funding for schools should be determined is on the basis of students meeting minimum standards (adequacy theory and outcome-based) rather than students receiving just an amount of funding based on their need (equity argument and input-based) (Clinger & Hail, 2013).

Since then, various states, including Alabama, Arkansas, Idaho, Massachusetts, New Hampshire, North Carolina, South Carolina, and Texas,[xlvii] alongside Kansas, have referenced the Rose standards (referred to as Rose capacities in Kansas) as a means to set the benchmark for the outcomes of the state's public education students. In the Kansas Supreme Court's ruling on *Gannon v. Kansas (Gannon I),* the court specifically cited the Rose standards as a necessary element in determining the cost associated with funding the education system in Kansas. Specifically, the court wrote in their March 2014 decision: "More specifically the adequacy requirement is met when the public education financing system provided by the legislature for grades K-12 — through structure and implementation — is reasonably calculated to have all Kansas public education students meet or exceed the standards set out in Rose."[xlviii]

The Rose standards are a list of skills that were cited as necessary to allow all students in Kentucky to achieve an adequate education. These skills include:

- Sufficient oral and written communication skills to enable them to function in a complex and rapidly changing civilization.
- Sufficient knowledge of economic, social and political systems to enable them to make informed choices.

- Sufficient understanding of governmental processes to enable them to understand the issues that affect their community, state and nation.
- Sufficient self-knowledge and knowledge of their own mental and physical wellness.
- Sufficient grounding in the arts to enable them to appreciate their cultural and historical heritage.
- Sufficient training or preparation for advanced training in academic or vocational fields, to enable them to choose and pursue life work intelligently.
- Sufficient academic or vocational skills to enable them to compete favorably with their counterparts in surrounding states, in academics or in the job market.

Breaking down the Rose standards further, it is important to understand a bit more about the elements of the statements. The standards contain references to:

- **content**, e.g., economic, social and political systems
- **skill(s)**, e.g., oral and written communications, and
- **aspiration** of a standard.

In the table below, each of the standards are broken out into these various elements to discern a bit more about their aims:

Table 3. Rose Standards by Skill, Content, and Aspiration

#	Skill(s)	Content	Aspiration
1	**Oral and written communication skills**		To enable them to function in a complex and rapidly changing civilization
2	**Knowledge of**	economic, social and political systems	To enable them to make informed choices
3	**Understanding of**	governmental processes	To enable them to understand the issues that affect their community, state, and nation
4	**Self-knowledge and knowledge of**	their own mental and physical wellness	
5		Grounding in the arts	To enable them to appreciate their cultural and historical heritage
6	**Training or preparation**	for advanced training in academic or vocational fields,	To enable them to choose and pursue life work intelligently

#	Skill(s)	Content	Aspiration
7	**Academic or vocational skills**		To enable them to compete favorably with their counterparts in surrounding states, in academics or in the job market

The meaningfulness of understanding the elements that are content, skill, or aspiration is to understand how the Kansas K-12 education system can be structured and resourced to support those outcomes for students. Interestingly, the term of "enable" is present in six of the seven Rose standards. Merriam Webster's first listed definition of "enable" is: "to provide with the means or opportunity."[4] Most commonly, one encounters these words — "means" and "opportunity" — in the context of economic self-sufficiency. Meanwhile, the Cambridge dictionary's definition of enable is "to make someone or something able to do something by providing whatever is necessary to achieve that aim." In either instance, the word "enable" has two components: one party *providing*, and the other party, consequently, going on to *achieve*. One may interpret the Rose standards' language as thus alluding to public school funding as an *investment*, with upfront costs paying dividends in the form of productive citizens.

Other States' Experiences with the Rose Standards

Kentucky

The Rose standards originated from Kentucky's 1989 case, *Rose v. Council for Better Education*, which led to a full overhaul of Kentucky's school finance system, curriculum, and assessment procedures. The state had maintained a long history of keeping property taxes low, resulting in low levels of school funding (Day & Ewalt, 2013). By the 1980s, Kentucky's education outcomes were among the lowest in the United States and included: the highest percentage of illiterate citizens, lowest percentage of adults with a high school diploma, and ranking of forty-ninth in the nation for college attainment.[xlix]

In 1985, a veteran school administrator who had previously worked for the Kentucky Department of Education, Arnold Guess, organized a group of superintendents under the name Council for Better Education, and the council lobbied the General Assembly for increased funding and education reform. Alongside inadequate funding, the council identified major inequity across the state's school system. For example, the Kentucky Office of Education Accountability (OEA) reported 1989-90 disparities that included per-pupil expenditures for instruction ranging from $1,499 to $3,709, and the number of classroom teachers per 1,000 students ranging from 49.5 to 84.7 (Adams, 1993). The council then sued Governor Martha Layne Collins and the legislature in *Council for Better Education, et al. v. Martha Layne Collins, Governor, et al.* (Civil Action No. 85-CI-1759). In May 1988, Judge Raymond Corns of the Franklin

[4] *enable*. Retrieved February 26, 2018, from https://www.merriam-webster.com/dictionary/enable.

County Circuit declared the state's school funding system unconstitutional. The defendants then appealed and brought it to the Kentucky Supreme Court as *Rose v. Council for Better Education*.

In 1989, the Kentucky Supreme Court, led by Justice Robert F. Stephens, issued its ruling, which affirmed and expanded the lower court's opinion. While the lower court's ruling focused specifically on school finance and equity issues, the 1989 *Rose* ruling broadened its scope to include the school system's organization and curricula as well. The ruling drew upon Section 183 of the state constitution, which simply declares that the General Assembly shall "provide for an efficient system of common schools throughout the State."[l] The Court affirmed Judge Corns' definition of an "efficient" system as a "tax supported, coordinated organization, which provides a free, adequate education to all students throughout the state, regardless of geographical location or local fiscal resources."[li]

The Court added that an efficient school system is one "with no waste, no duplication, no mismanagement, and with no political influence" and must be continuously monitored.[lii] The Court emphasized that an "efficient" system also requires equal educational opportunities, and it determined that this is a "fundamental right" under the state constitution. The Court noted wide-ranging disparities between poorer and wealthier districts, including in student test scores, student-teacher ratios, and curricula offered, "particularly in the areas of foreign language, science, mathematics, music and art."[liii]

The Court cited a similar case, *Pauley v. Kelly* (1979) of West Virginia, in which the West Virginia Supreme Court not only addressed the plaintiffs' concerns about inadequate school funding, but also took the opportunity to outline the management, resources, and wide-ranging curricular goals for an adequate education system. *Pauley*'s eight curricular goals included government knowledge, self-knowledge, creative pursuits, and academic or vocational skills.[liv] The Kentucky Supreme Court then listed their own seven curricular goals, now known as the *Rose* standards. While some of these goals mirror those listed in *Pauley*, the Kentucky Supreme Court added detail to its standards, including justification for six out of the seven — that is, what each standard will "enable" its student citizenry to do.

In its conclusion, the Court reiterated that it found the "*entire system* of common schools is unconstitutional," with this decision applying to "the entire sweep of the system — all its parts and parcels."[lv] It declared that this required the General Assembly "to re-create, re-establish a new system of common schools" that would meet the financial, organizational, and educational requirements outlined in the ruling.[lvi]

In response, the General Assembly passed HB 940, the Kentucky Education Reform Act (KERA), in 1990. As required by the Court, KERA reformed not only the state's school finance system, but also its curriculum, assessment and accountability, district employment, and school governance (Day & Ewalt, 2013). With regard to finance, KERA implemented a new funding formula, the Support Education Excellence in Kentucky (SEEK) fund, which set out to equalize per-pupil expenditures. It set a base level of per-pupil funding and included additional funding for at-risk students, students with disabilities, and districts with higher transportation costs. While districts could raise additional funds through local tax effort, the state offered extra financial incentives for poorer districts to participate. The state also provided a guaranteed annual minimum increase in state funds (Hoyt, Jepsen, & Troske, 2008).

With regard to the Rose standards, KERA launched a major curricular reform, coupled with a high-stakes school accountability system. KERA translated the seven *Rose* standards into six "learning goals," which the Kentucky Department of Education (KDE) and Kentucky Board of Education (KBE) then elaborated upon, creating seventy-five "valued outcomes" that served as the state's educational standards. A few years later, KBE reduced these to fifty-seven outcomes, condensing some and determining that others, such as self-sufficiency, were too difficult to assess (Whitford & Jones, 2000). KERA and its learning goals emphasized new instructional approaches that focused on problem-solving, critical reasoning, and communication skills. Recognizing that this required many educators to radically revise their teaching methods, the state provided additional funding and school requirements for professional development programs.

Naturally, assessment of these outcomes required a more "performance based" form of testing. The state convened a committee with strong teacher representation, and the committee designed a new assessment system consisting of less conventional assessment methods, including group problem-solving tasks, open-response questions, and student portfolios showcasing writing and mathematics work.[lvii]

As required by the Court, the new assessment system, the Kentucky Instructional Results Information System (KIRIS), also included a strong accountability component. Assessment results were combined with noncognitive outcomes (e.g. attendance and graduation rates) to produce an accountability index for each school and district. The state defined the expected rate of improvement by prescribing a target or "threshold" score for each school, based on a two-year cycle. Every two years, the school would either be rewarded for meeting its threshold score or sanctioned for failing to do so. Rewards came in the form of financial bonuses for full-time, certified staff. Sanctions included state-mandated improvement plans and the assignment of a "distinguished educator" to coach or help manage the school, or, if the school continued to struggle, sanctions could include dismissal of tenured teachers and state takeover of the school (Hopkins, 2008).

While KERA has undeniably reshaped the state's education system, various components have been more well-received than others. The accountability system, in particular, received immediate criticism from practitioners, with educators citing a more stressful climate due to the fear of sanctions and noting that extrinsic rewards are not major motivators within their profession (Kannapel, Coe, Aagaard, & Moore, 1996). Teachers also felt that the time required to put together portfolios detracted from time to teach basic skills, which were not emphasized in the assessments.[lviii] There were also concerns, including among state officials and external evaluators, about the reliability and validity of the assessment, given the non-traditional format of the portfolios and group tasks (Kannapel, Aagaard, Coe, & Reeves, 2000).

In response, the General Assembly passed HB 53 in 1998, replacing KIRIS with the new Commonwealth Accountability Testing System (CATS), which continued to undergo periodic revisions. While still substantially similar to KIRIS, the new accountability system addressed many of the aforementioned concerns. The performance-based tasks and portfolios were de-emphasized, for example, and the new reward structure acknowledges schools that made progress, even if they fell short of their threshold goals.[lix] Outside of the accountability system, in 1996, the state also adopted the nationally normed Comprehensive Test of Basic Skills (CTBS), so Kentucky students' scores could be compared to those in other states, though these scores were not used for accountability purposes.[lx]

Regardless of the criticism, studies consistently showed that a majority of education stakeholders believed that KERA improved the state's education system. A statewide survey for the Kentucky Institute on Education Research (KIER) in 1996 found that the majority of school board members, school administrators, teachers, and parents who have served on school councils agreed that schools have changed for the better as a result of KERA, and fewer than 20% wanted to return to pre-KERA assessment practices (Wilkerson & Associates, Ltd., 1997). In another 1996 study, many principals, teachers, and parents praised the assessment system's strong emphasis on writing, and educators reported that KERA prompted improvement in instructional practice as well as students' writing, creative thinking, and critical reasoning skills (Kannapel, Aagaard, & Coe, 1997).

Within the first five years, KERA's new school finance system also resulted in both higher and more equitable school funding. According to the state's Office of Education Accountability, average per-pupil revenue from state and local sources increased from $3,049 in 1989-1990 to $4,628 in 1994–1995. Furthermore, the difference in average per-pupil revenue between school districts in the lowest wealth quintile compared to the highest quintile decreased from $1,380 in 1989–1990 to $764 in 1993–1994 (Office of Education Accountability, 1996).

KERA and then its successor, CATS, remained in place until 2009, when the General Assembly passed SB 1, implementing its new accountability system, called Unbridled Learning, in the 2011-12 school year. But in the two decades following the passage of KERA, national rankings already reflected tremendous improvement in Kentucky's educational outcomes. In October 2007, the Kentucky Long-Term Policy Research Center found that based on its interpretation of various national rankings, Kentucky's overall national ranking rose from 43rd in 1992 to 34th in 2005 (Watts, 2007). Similarly, *Education Week*'s Quality Counts 2007 Achievement Index ranked Kentucky 34th (Education Week Research Center, 2007) and a 2011 study by the University of Kentucky's Center for Business and Economic Research found that the state's ranking on the Index of Educational Progress moved up to 33rd from 48th in 1990 (Prichard Committee for Academic Excellence, 2016). The index included the percentage of Kentucky residents with high school diplomas or college degrees, ACT scores, high school dropout rates, AP scores, and national scores in reading, math, and science. According to this index, Kentucky's ranking rose more than nearly any other state during these two decades.

Arkansas

While the Rose standards officially came to Arkansas in 2002 with the ruling of *Lake View School District No. 25 v. Huckabee (Lake View III)*, an important precedent was set in 1983 with the Arkansas Supreme Court's ruling of *DuPree v. Alma School District No. 30*. In the *Dupree* case, the Court concluded that the inequality in funding among school districts violated the equal protection clause of the Arkansas Constitution and that the State failed in its constitutional duty to provide a "general, suitable, and efficient education."[lxi] In doing so, the Court indicated a constitutional requirement for both equity and adequacy. At that time, it did not outline a specific definition for what a "suitable" or "adequate" education involved, though it did provide the opportunity for then-Governor Bill Clinton to push a wave of education reforms, including higher taxes, though the Arkansas General Assembly and State Board of Education.[lxii]

The *Lake View* case began in 1992 in trial court and eventually rose to the Arkansas Supreme Court in 2000, arguing that the state's school system was again neither adequate nor equitable. The State contended that the school funding system should not fall under the judicial branch's purview, but the Court disagreed, citing the precedent set by *DuPree* and adding that the Arkansas Constitution specifically charges the entire state government, not just the General Assembly, with maintaining a suitable and efficient school system.[lxiii] The State also argued that "adequacy is impossible to define."[lxiv] The Court responded by noting that the Equitable School Finance System Act of 1995, one of the bills passed in response to *Lake View*'s initial trial court case, had directed the State Board of Education to review minimum standards and "seek public guidance in defining an adequate education," but the Board of Education had failed to do so.[lxv]

The Court then took it upon itself to define an adequate or "efficient" education. The *Lake View* trial courts had cited the *Rose* standards as a definition, and the Arkansas Supreme Court affirmed this definition. The Court noted that these standards were already "adopted by our General Assembly with Act 1108 and Act 1307 in 1997."[lxvi] Act 1108 indeed included an adaptation of the Rose standards, including requirements for language arts, mathematics, science, social studies, practical and vocational skills, physical education and health, and visual and performing arts.[lxvii]

The Court stayed its order until January 1, 2004, pending legislation to resolve the adequacy and equity issues.[lxviii] The General Assembly first passed Act 1467 of 2003, the Quality Education Act or "Omnibus Act," which established accreditation standards and authorized the State to monitor, audit, and sanction districts that failed to maintain its standards. However, this legislation focused primarily on the district level and on implementing the federal requirements of *No Child Left Behind.* To focus specifically on the Lake View concerns, the General Assembly convened a special session starting December 8, 2003 (McKenzie & Ritter, 2005).

The key issues discussed during the Special Session included school consolidation, student assessment and accountability, teacher salaries, the revised school funding formula, and plans to generate the revenue required for the adopted education reforms. A new school funding formula came out of the Special Session, guaranteeing $5,400 in per-pupil base funding from the state for the 2004-05 fiscal year, with additional funding for at-risk students, students with disabilities, and English Language Learners, as well as professional development and various other programs.[lxix]

To address *Lake View*'s adequacy requirements, the General Assembly passed Act 35, Arkansas Student Assessment and Educational Accountability Act. The legislation required the State Board of Education to establish specific academic content standards and include "periodic review and revision" by various public stakeholders including outside content standard experts, higher education and workforce education professionals, community members, and teacher committees.[lxx] The legislation also required the establishment of a five-level school rating system based on student assessment scores, and any school failing to meet acceptable levels of performance would have to participate in a school improvement plan. The improvement plan must specifically examine whether achievement gaps exist between student groups, and if so, how to address them. Additionally, the legislation enacted requirements for student-level accountability, as any student failing to achieve acceptable levels of individual performance would

be required to participate in an academic improvement plan developed by the student's parents and teachers.

Furthermore, while the General Assembly ordered an adequacy study in 2003, the legislature also acknowledged that the requirements for an adequate and equitable education may shift over time.[lxxi] To address this, it passed Act 57 of 2004, the Continuing Education Adequacy Evaluation Act. This act set up a system to evaluate and monitor "the entire spectrum of public education" and provide an annual report assessing whether it offered an adequate and equitable education. This included reviewing and evaluating teacher salaries, adequacy costs, per-pupil expenditures, the effectiveness of individual programs, and "what constitutes an adequate education."[lxxii] Mirroring the Kansas courts' concerns about stagnation in both the *Montoy* and *Gannon IV* cases, the Arkansas General Assembly recognized that demographics, student needs, and requirements to succeed in a twenty-first century workforce are subject to change, and so the education system must adapt accordingly.

Efforts by Kansas to Incorporate the Rose Standards

Following the March 2014 ruling by the Kansas Supreme Court, the Legislature passed HB 2506, adopting the Rose standards into law.[lxxiii] Specifically, the legislation directed the State Board of Education to "design subjects and areas of instruction to achieve the goal established by" each of the Rose standards.

The Kansas State Department of Education (KSDE) and Kansas State Board of Education (KSBE) sought to link this new law to the practical elements that construct the sequence of learning for students by grade and subject. The primary vehicle is the set of Common Core-aligned standards adopted by KSBE, known as the Kansas College and Career Ready Standards (Common Core in Kansas, 2013). According to KSBE, "College and Career Ready means an individual has the academic preparation, cognitive preparation, technical skills, and employability skills to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation." Such a definition mirrors many of the skills referenced in the Rose standards. As the Kansas Association of School Boards noted, the Rose standards "broaden student expectations in the areas of citizenship, the arts, and health" compared with Kansas's previous requirements.

For example, in addition to typical academic standards, the Kansas College and Career Ready Standards include curricular standards in non-assessed areas, including Counseling; Social, Emotional, and Character Development; Health; Physical Education; Library, Media, and Technology; and the Arts. These standards directly address Rose standards 4 (physical and mental health), 1 (communication for a rapidly changing civilization), 5 (academic/vocational training), 6 (academic/vocational skills), and 4 (arts and cultural appreciation).

Some of these curricular areas closely resemble those implemented by Kentucky in its wide-sweeping curricular reform through KERA. For example, Kansas's Social, Emotional, and Character Development standards provide a detailed framework for schools to "learn, practice and model essential personal life habits that contribute to academic, vocational, and personal success," including problem-solving, healthy decision-making, empathy, and interpersonal skills (Kansas State Board of Education, 2012). Similarly,

KSDE developed a detailed framework for Civic Engagement education, coupled with a Civic Advocacy Network. The Civic Advocacy Network was launched after KSDE hosted over 287 focus groups in twenty communities across the states, asking, "What are the characteristics, qualities, abilities and skills of a successful 24-year old Kansans?" Results indicated that among education professionals and non-education professionals alike, soft skills — i.e., interpersonal skills, like teamwork, and intrapersonal skills, like perseverance — were overwhelmingly listed as the top priorities. The Civic Advocacy Network aims to promote civic engagement opportunities for Kansas students in all grades, particularly through sharing exemplary practices from schools across the state (Kansas State Department of Education, 2017).

This curricular emphasis on interpersonal communication, teamwork skills, and applied problem-solving mirrors Kentucky's curricular reform's focus on soft skills and critical reasoning, which had been praised by educators, the public, and the courts alike. Furthermore, Kansas has arguably learned from Kentucky's mistakes, as Kansas has chosen to forgo the controversial, non-traditional assessment methods initially instituted by KERA. For skills that are not already evaluated by standardized assessments, Kansas has included the relevant subjects as graduation requirements, rather instituting additional annual assessments.

Along with requiring the incorporation of the Rose standards into the state's education system goals, HB 2506 issued several other important directives to state and local education agencies. These largely focused on specific efforts to support the implementation of the new and existing academic standards, as well as to support educational equity.

First, the legislation directed that, "every accredited school in the state of Kansas shall teach the subjects and areas of instruction adopted by the state board of education," including these new areas. In practice, the implementation of such curricula requires hiring and placing appropriately credentialed and able teachers in each Kansas classroom. Indeed, research has shown that teacher quality is the most important in-school factor influencing student achievement. In particular, teacher characteristics shown to have a positive effect on student learning include: content knowledge, pedagogical knowledge, verbal ability, at least a few years of teaching experience, and degrees in science or mathematics (when teaching those subjects) (Rice, 2003). Further research has revealed that the effectiveness of a teacher, as defined by his or her previous students' performance, is a strong indicator of the academic outcomes for the teacher's future students (Sanders & Rivers, 1996). Longitudinal evidence also indicates that having either a very high-performing or low-performing teacher for one year can affect a student's performance for several years afterward (Jordan, Mendro, & Weerasinghe, 1997). Thus, effective teachers are undoubtedly a crucial resource for all Kansas classrooms to fulfill this requirement.

Second, the legislation directed that "every accredited high school in the state of Kansas also shall teach the subjects and areas of instruction necessary to meet the graduation requirements adopted by the state board of education." This requirement assumes that each Kansas high school will develop a master schedule that both allows students to complete a course of study that fulfills graduation requirements and also offers the necessary support to students who need additional assistance. Third and finally, the Legislature noted that, "nothing in this section shall be construed as relieving the state or school districts from other duties and requirements imposed by state or federal law including, but not limited to, at-risk programs for pupils needing intervention, programs concerning special education and related services

and bilingual education."[lxxiv] In particular, this ensures that local education agencies should ensure that there is an expressed and clear need to continue to serve students from disadvantaged backgrounds that require additional time, attention, and resources in order to succeed in the Kansas school system.

Responding to these latter two directives, KSDE has fully aligned their Multi-Tier System of Support (MTSS) toward achievement of the Kansas College and Career Ready Standards. The Kansas MTSS provides a framework for how to implement research-based curricula to help Kansas students achieve each of the standards, including for students who require supplementary (Tier 2) or intensive (Tier 3) support. The MTSS recommends this additional support take the form of small group instruction in addition to the core classroom instruction. Interventions are based on individual students' needs, as determined by diagnostic assessment, and are designed to complement and reinforce core classroom instruction (Kansas State Department of Education, Division of Learning Services, 2013). KSDE has outlined required components for a school's Tiered System of Supports, including family engagement; a master schedule providing for assessment, core, intervention, and collaborative team time; and regular evaluation of the system (Kansas State Department of Education, 2016).

Finally, SB 19 was notable for its requirement that the state continue to monitor its education finance system for adequacy and equity throughout years to come. Specifically, the legislation requires the Division of Legislative Post Audit to perform several statewide performance audits from 2019 through 2026. This includes evaluations every three years to determine the current costs required for meeting KSDE's student performance outcomes, with additional cost studies focusing on at-risk education, bilingual education, transportation, and best practices of successful schools.[lxxv] This mirrors Arkansas's passing of the Continuing Education Adequacy Evaluation Act, a significant effort to ensure not only that the state's public education system will meet the needs of today's students, but that it will continue to meet the needs of students in years to come.

Rose Standards Crosswalk to Measures of Student Outcomes

The following is a crosswalk, created by the Kansas State Department of Education, matching the seven Rose standards to the corresponding curricular standards and measures that Kansas has in place to address them. These include the Kansas College and Career Ready Employability Skills (though these have recently been replaced with the very similar Kansas College and Career Ready Standards), as well as the statewide, standardized measures of student outcomes. There have been several other published documents that attempt to convey this alignment in policy, regulation, and implementation of the Kansas public education system with the Rose standards.[lxxvi]

This crosswalk goes further in identifying the applicable measures of standard, statewide measures of student outcomes to each of the Rose standards. Of note, those listed measures are just those that were used in this study. The researchers recognize that other standard, statewide measures of student outcomes are available and aligned to the Rose standards. However, for either methodological or other reasons they were not included in the study. For a further discussion on this please see Chapter 4.

Table 4. Rose Standards Crosswalk to Standard, Statewide Measures of Student Outcomes

Rose Standards	Applicable Kansas College and Career Ready Employability Skills (KCCRES)[lxxvii] and the 21st Century Accreditation (Accreditation)[lxxviii]	Applicable Minimum Standards for Schools to Teach or Graduation Requirements	Applicable Measures of Standard, Statewide Measures of Student Outcomes
Communication and Basic Skills			
Standard 1: Sufficient oral and written communication skills to enable them to function in a complex and rapidly changing civilization.	**KCCRES:** These basic skills encompass reading, listening, speaking, and performing math computations. **Accreditation**: The Relevance Rubric defines the criteria for Technology in a school district. Those criteria include having a vision for 21st Century learning and being able to apply digital learning through the use of technology. Districts much have the infrastructure necessary to support technology needs in the district, provide the professional learning essential to addressing the needs of learners, use technology for systemic improvement, plan strategically for the district's needs and gather data through the use of surveys to all stakeholders about technology and its use.	**Elementary schools must teach:**[lxxix] reading, writing, spelling, English grammar and composition, arithmetic (and) such other subjects as the state board may determine. **Elementary and secondary schools must provide:** language arts; library services; computer literacy; counseling services; mathematics; science; services for students with special learning needs. **For graduation:**[lxxx] English language arts (4 units), including reading, writing, literature, communication, and grammar; Science (3 units), including physical, biological, and earth and space science concepts and at least 1 unit as a lab course; and Math (3 units) including algebraic and geometric concepts.	**State assessments** (as required by the federal Every Student Succeeds Act (ESSA) reauthorizing the Elementary and Secondary Act of 1965) [5][lxxxi] **English Language Arts and Mathematics (and alternate)** Grades: 3-8, 11 **Science (and alternate)** Grades: 4, 7, 11 (to 2015) Grades: 5, 8, 11 (2016 on)
Civic and Social Engagement			

[5] TARGETS: At the state, district, school and subgroup level, 75% of students score in performance levels 3 and 4 combined on the Kansas state assessments in English language arts and math by 2030.

Standard 2: Sufficient knowledge of economic, social and political systems to enable them to make informed choices.	**KCCRES:** Subset of Critical Thinking Skills, Interpersonal Qualities and Career Interest Development. These sets of skills address critical thinking through development of decision-making skills; thinking creatively about ideas and solutions, making decisions and using a problem-solving process; developing interpersonal qualities such as social and self-awareness; and, exploring and planning for career interest. **Accreditation:** The Relevance Rubric defines the criteria for Curriculum and Instruction in a school district. Criteria include implementing the Kansas College and Career Ready Standards, using resources that reflect the culture and community of the district and providing professional learning about curriculum and instruction. Content area knowledge of teachers is evaluated in an ongoing manner in order to provide authentic learning experiences and personalized instruction for all students.	**Elementary schools must teach:**[lxxxii] geography, history of the United States and of the state of Kansas, civil government and the duties of citizenship, and instruction concerning the original intent, meaning, and importance of the declaration of independence and the United States constitution, including the bill of rights. **High schools must teach:** a course of instruction concerning the government and institutions of the United States, and particularly of the constitution of the United States. **For graduation:**[lxxxiii] History and government: 3 units, including world history; U.S. history; U.S. government, including the Constitution of the United States; concepts of economics and geography and, a course of instruction in Kansas history and government.	**State assessments**
Standard 3: Sufficient understanding of governmental processes to enable them to understand the issues that affect their community, state and nation.	**KCCRES:** Subset of Interpersonal Qualities. The Interpersonal Qualities addresses being self-aware through communication with others in a variety of settings, working well with others including those from diverse backgrounds and exercising leadership. Being aware of civics at many levels can promote success in post-secondary choices. **Accreditation:** The Relationships Rubric defines the criteria for students in a school district. Criteria include implementing policies and	**See above.**	**State assessments**

	practices that encourage and empower students as well as demonstrating student involvement with community.		
Physical and Mental Health			
Standard 4: Sufficient self-knowledge and knowledge of their own mental and physical well-ness.	**KCCRES:** Subset of Interpersonal Qualities. Skill specifically addresses students' abilities to self-manage their own thoughts, feelings and behaviors and promotes self-awareness to develop positive self-worth and self-confidence. **Accreditation:** Criteria include the Social, Emotional and Character Development Model Standards. Student survey target self-efficacy for empowerment and involvement and their relationships with peers, teachers, families and community. The Responsive Culture Rubric defines criteria for District Climate. Criteria include surveying stakeholders about the physical and emotional well-being of students, evaluating academic and social engagement and providing a safe and supportive environment for students, families and community.	**Elementary schools must teach:**[lxxxiv] health, hygiene **Elementary and secondary schools must teach:** physical education, shall include instruction in health and human sexuality. **For graduation:**[lxxxv] Physical education: 1 unit, including health and which may include safety, first aid, or physiology. (May be waived for health or religious reasons.)	**High school graduation**[6][lxxxvi]
Arts and Cultural Preparation			

[6] Targets: Long-term goal of 95% in the four-year adjusted cohort will be applied to each subgroup and, as a result, will require interim measures of progress.

Standard 5: Sufficient grounding in the arts to enable them to appreciate their cultural and historical heritage.	**KCCRES:** Subset of Critical Thinking Skills, specifically asking students to engage in creative thinking and being able to generate new ideas and find solutions to problems. Subset of Interpersonal Qualities also expect students will work with others from diverse backgrounds and experiences allowing for appreciation of their own in process. **Accreditation:** Students, Families, and Community include developing positive relationships w/ students and families, fostering systemic family engagement within the district and the school and investing in community partnerships. Relevance Rubric defines the criteria for Content Area Knowledge ensuring that teachers are able to advance student learning, creativity and innovation.	**Elementary and secondary schools must teach:** fine arts. **For graduation:**[lxxxvii]**:** Fine arts: 1 unit, which may include art, music, dance, theatre, forensics, and other similar studies selected by a local board of education.	High school graduation[lxxxviii]
Postsecondary and Career Preparation			
Standard 6: Sufficient training or preparation for advanced training in academic or vocational fields, to enable them to choose and pursue life work intelligently.	**KCCRES:** Subset of Interpersonal Qualities and Career Interest Development. Through access to information and building relationships, students explore and plan for their interests and career preferences in order to be successful in post-secondary settings. **Accreditation:** Criteria include integrating career and technical education with academics throughout the curriculum, forming partnerships with stakeholders for the purpose of career exploration and preparation and an established curriculum focused on careers. In	**Secondary schools must teach:** business; family and consumer science; foreign language; and industrial and technical education **For graduation:**[lxxxix] 1. English: 4 units of approved courses including reading, writing, and literature. 2. Mathematics: 3 units completed[xc] 3. Natural science: 3 units[xci] 4. Social science: 3 units[xcii]	**State assessments** **ACT College Readiness Test** **High school graduation**

	addition, an Individual Plan of Study is advocated for every student.	5. 6 units of elective courses for a total minimum of 21 units of credit.	
Standard 7: Sufficient academic or vocational skills to enable them to compete favorably with their counterparts in surrounding states, in academics or in the job market.	**KCCRES:** College and career ready advocates for academic and cognitive prep, technical and employability skills so that all Kansas students are well rounded and prepared for pathways to post-secondary education or careers. **Accreditation:** CTE and Technology in a school district. Criteria include long-term planning through the collection, analysis and use of data focused on economic and work force trends state-wide and nationally. Addressing students' individual academic and career goals while addressing education priorities with community state and national workforce needs is a priority.	**See above.**	**State assessments** **ACT College Readiness Test** **High school graduation**

Thresholds for Identified Measures Relative to the Rose Standards

One of the important considerations for each of the identified student assessments and graduation requirements aligned to the Rose standards above is the threshold — for both individual students and populations of students — by which a determination of having achieved the skill or knowledge is reached. The following section discusses each of the student outcome measures used in the cost function analysis and sets a determinate adequacy threshold by individual student and in aggregate for the student population. The following measures are discussed below: annual, statewide assessments in English language arts (ELA) and math; and high school graduation rates. Other student performance measures that were identified but not used are discussed in Chapter 4.

In setting thresholds for performance, it was important to consider several factors. First, the measures should capture the experience of existing schools within the system in their current state. To achieve these ends, the study team reviewed recent ELA and math assessment data, along with graduation rates, to identify current performance thresholds for those school districts at the 90th percentile.

Second, it was also important to capture the desired aspirations of the public education system. While it is important to consider the current, observable levels of performance in the system, it is also important to consider the motivation and aspiration of the state and its education system. The study team relies primarily on the state's approved plan under the federal Every Student Succeeds Act (ESSA) by the U.S. Department of Education.[xciii] This plan provides both the identification and commitment of the state to ensure students reach a defined level of performance. It outlines the performance goals for the Kansas Assessment Program (KAP) in ELA and math as well as graduation rates. This serves as the aspiration and a trajectory of growth in performance that the study team can match with the two other factors.

The third and final factor was to consider past performance of the state's education system and conditions under which that performance occurred. Most significantly, there was a period in which the courts had ruled that the state had met their constitutional obligation to adequately fund the education system. Observing the growth in student performance over that time period also contributed to setting the performance thresholds.

Annual, Statewide Assessments in ELA and Math

In assessing a threshold of performance on the annual, statewide assessments in ELA and math, it was important to acknowledge the evolution of the standards and assessments used throughout Kansas and most importantly, the significant shift that occurred starting in the 2010-11 school year with the move to more rigorous standards, followed by the rollout of aligned assessments beginning in the 2014-15 school year. The new assessments, included under the Kansas Assessment Program (KAP) administered the first statewide assessment that was publicly reported in the 2014-15 school year starting with English and math, followed closely by science.[xciv] In order to ensure that the student assessments were equated to the more rigorous academic standards, the assessment changed not only the content of the exam to test the new standards but also establishes scale scores that imply that certain higher levels of achievement

signal that the student is on track to be college ready. The new assessments administered in Kansas are validated not only through the construction of the test[xcv] but also by equating levels of performance to the ACT, a nationally administered standardized exam that is used by many colleges and universities for admission to a post-secondary institution.[xcvi]

When making these changes in the standard, assessment, and accountability system some states have cautioned against the comparison of individual, building, and school district level results as it would be inappropriate to equate scores from one assessment to another because they are fundamentally testing different knowledge and skills for students. However, it is important in this study to translate historically how Kansas has referenced the threshold of student performance as a measure of adequacy discussed in trial proceedings to the current standards and assessment system. As such, the study team considered the similarities and differences between these two standards and assessment systems to identify a threshold of performance under the new standards and assessment system that could be set to estimate the cost to achieve an adequate level of funding.

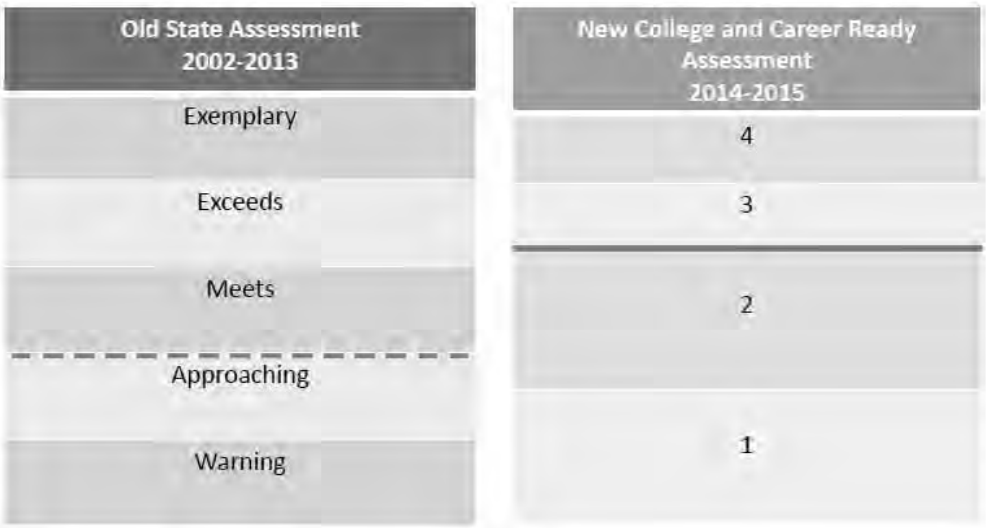
Under the previous standard and assessment system there were five, defined performance levels ranging from academic warning to exemplary. Under the KAP, there are now four performance levels. The table below offers some basic descriptions between these assessment systems.

Table 5. Description of performance levels for the assessment system under NCLB and KAP

State assessment system under No Child Left Behind (NCLB) Law	Kansas Assessment Program (KAP) and new College and Career Ready Assessment
Exemplary: student is performance beyond grade-level expectations. Exceeds Standard: student is performing above grade-level expectations. **Meets Standard: student is performing at grade-level and is considered proficient.** Approaching Standard: student is approaching the standard for grade-level performance. Academic Warning: student is in need of intervention to support getting back to grade level.	Level 4: indicates that the student is performing above expectations for that grade level and is on track to being college ready. **Level 3: indicates that the student is performing at academic expectations for that grade level and is on track to being college ready.** Level 2: indicates that the student is doing grade-level work found in the standards but not at the depth or level of rigor to be considered on-track for college readiness. Level 1: indicates that a student is not performing at grade level standards, and additional supports are needed.

The language used under the respective assessment systems alone point to measurement of a different level of standard for students with designations of college ready in the KAP. Also of noticeable difference is the minimum thresholds set out by the assessment systems. The table below offers a picture of this which was presented by KSDE to the Legislature in 2015 during testimony on assessment changes in Kansas.

Table 6. Identified, minimum level for proficient students for the assessment system under NCLB and KAP



It can be observed that under the old state assessment those students scoring in the meets, exceeds, or exemplary performance level were considered proficient. The new college and career ready assessment considers level 3 and 4 to be proficient or college ready which increases both the rigor of the standards, that is the content and skill demonstration by students. The new college and career ready assessment would reasonably be better aligned to the Rose standards in helping to gauge the progress and performance of students particularly for Rose standards six and seven (the two Rose standards addressing postsecondary and career preparation.) In order to bridge the change in the standards and assessment system as a measure of performance the cost estimates will include a threshold of performance equivalent to the old assessment system as well as the definition of proficiency under the current standards and assessment system.

Method for Threshold Identification

When considering how to set benchmark thresholds, the research team considered the overall threshold of achievable performance as well as the year-over-year anticipated growth. The importance of recognizing absolute performance as well as growth in performance reflects the necessity to hold the education system to a high standard of performance while acknowledging the practicalities of schools and school districts to make the appropriate investments to reach those levels of performance over time. That

is, it is not practical to make a one-time, significant investment in a statewide public education system and expect at the end of that school year to see dramatic movement from current performance to the aspiration targets. Alternatively, making ongoing investments in the system with established targets may be more realistic.

In this regard, the study team used various reference points to establish the overall threshold of performance and annual targets, included: (1) previous court documents discussing the overall threshold of performance, (2) the state's ESSA plan submission to the U.S. Department of Education, (3) previous performance of the Kansas school system during years in which the court regarded the system to have been fully funded (2006-07 to 2008-09), and (4) observed, actual performance of students currently in the system.

Overall Threshold of Performance

The study team looked at several sources in identifying the overall threshold of performance. The Kansas Every Student Succeeds Act (ESSA) approved state plan submission captures the state's commitment to the federal government for how it will hold itself accountable to achieve some set of student outcomes. Specifically, the plan cites the desired outcome for its students in English and math to ensure 75% of all students are proficient by the year 2030 based on the current assessments used in the KAP. Is it important to note that this definition of proficient references the summation of levels 3 and 4 of the English and math assessment.

Another reference point is to consider the discussion that occurred during the trial for *Gannon v. State* in which equivalent to the old assessment the absolute threshold for performance was 87%. This would be equivalent in the new assessment system to performance levels 3, 4, and a large proportion of 2. For the purposes of cost estimates, the thresholds of performance in levels 2, 3, and 4 were used for English and math. When looking at the total percentage of students proficient this would equate to approximately 90% of all students having met either levels 2, 3, or 4 under the new assessment.

Annual Targets of Performance

As was mentioned, achieving those absolute thresholds of performance over a one-year period is not possible and further acknowledged by the state in its ESSA plan as it sets out various targets between its baseline year, 2016-17 and its target year in 2030. As such, the research team used various other reference points to derive average annual growth that would be achieved on an annual basis. Specifically, the research team looked at three sources: (1) the average annual growth identified in the state's approved ESSA plan, (2) previous observable growth during the years in which the court regarded the Kansas education system to be adequately funded, and (3) current, observable performance in Kansas school districts. The research team chose a 5-year time period in which to estimate costs.

The approved ESSA state plan for the KAP assessment in ELA identifies a baseline of 42% of all Kansas students in the 2016-17 school year and in Appendix A identifies its projected measure of interim progress to be 2.53 percentage points growth annually until 2030 in which all students in Kansas would achieve a proficiency rate of 75%.[xcvii] The approved ESSA state plan for the KAP assessment in math identifies a baseline of 33% of all Kansas students in the 2016-17 school year and in Appendix A identifies its projected measure of interim progress to be 3.23 percentage points growth annually until 2030 in which all students

in Kansas would achieve a proficiency rate of 75%.[xcviii] Since the time period in which this cost study is looking out is 5 years, calculating the annual growth from a base of 42% would result in a proficiency rate in ELA of 54.65% and 49.15% for math by 2021-22.

Table 7. Proficiency targets by school year for ELA math; All students identified in ESSA state plan

School Year	Proficiency Target for ELA, All Students (%)	Proficiency Target for Math, All Students (%)
2016–2017 (baseline)	42.00	33.00
2017–2018	44.53	36.23
2018–2019	47.06	39.46
2019–2020	49.56	42.69
2020–2021	52.12	45.92
2021–2022	54.65	49.15

The study team also considered previous growth in the states ELA and math assessments. In particular, the team looked at student academic growth during school years in which the court regarded the system to have been adequately funded. The table below identifies the growth in ELA and math assessments for all students in Kansas. The 2005-06 school year is used as a baseline and the 2006-07 school year was the first of three years in which the Legislature had fundamentally reformed the school funding formula following a ruling by the court in July 2005 that the state had met its obligation under the constitution.[xcix] Table 8 presents the outcome results from the years between 2005-06 and 2008-09.

Table 8. Percent proficient by school year for ELA and math; All students (old state assessment)

School Year	ELA Percent Proficient (%)	Change in ELA Percent Proficient	Math Percent Proficient (%)	Change in Math Percent Proficient
2005–2006	78.0		72.5	

School Year	ELA Percent Proficient (%)	Change in ELA Percent Proficient	Math Percent Proficient (%)	Change in Math Percent Proficient
2006–2007	82.5	+ 4.5	80.1	+ 7.6
2007–2008	84.1	+ 1.6	81.0	+ 0.9
2008–2009	85.7	+ 1.6	82.8	+ 1.8
Total	**+ 8.3**	**+ 2.6 / annually**	**+ 9.4**	**+ 3.4 / annually**

Finally, the study team investigated the actual levels of student performance across school districts in Kansas. Among those higher performing school districts (performing at the 90th percentile) that they were achieving proficiency rates for all students in their system of 58.32% in ELA and 58.05% in math. These proficiency rates use the same scale score cut-offs as established under KAP.[c]

Annual Targets of Performance Under Different Thresholds

The study team decided to look at performance thresholds under a scenario of achieving college ready (levels 3 and 4) as well as under a scenario of levels 2, 3, and 4. Under the scenario of achieve college ready (levels 3 and 4) a target of 60% performance was set to be achieved at the end of the 2021-22 school year which would keep Kansas on track to hit the 75% performance threshold for ELA and math identified in the ESSA state plan. This means that students across all tested grades are achieving the threshold if they are reaching a scale score of at least 300 on the ELA and/or math assessments. This translates into applying a 3.6 percentage point growth trajectory for ELA and a 6.0 percentage point growth trajectory for math over that five-year period. Using the 2016-17 school year are the base year the resulting growth is reflected in the table below.

Table 9. Proficiency targets by school year for ELA, math; All students identified for cost study

School Year	Proficiency Target for ELA, All Students (%)	Proficiency Target for Math, All Students (%)
2016–2017 (baseline)	42.0	33.0
2017–2018	45.2	38.0
2018–2019	48.4	43.0

School Year	Proficiency Target for ELA, All Students (%)	Proficiency Target for Math, All Students (%)
2019–2020	51.6	48.0
2020–2021	54.8	53.0
2021–2022	60.0	60.0

Under the scenario of achieve levels 2, 3, and 4 a target of 90% performance was set to be achieved at the end of the 2021-22 school year. This means that students across tested grades are achieving the threshold if they are at or above a scale score of between 265 and 277 on the ELA assessment and at or above a scale score of between 266 and 276 on the math assessment depending on their grade level. For a list of scale score cut scores by grade see the Cut Scores for KAP Summative Assessments document.[ci] This translates into applying a 3.5 percentage point growth trajectory for ELA and a 6.0 percentage point growth trajectory for math over that five-year period. Using the 2016-17 school year are the base year the resulting growth is reflected in the table below.

Table 10. Proficiency targets by school year for ELA, math; All students identified for cost study

School Year	Proficiency Target for ELA, All Students (%)	Proficiency Target for Math, All Students (%)
2016–2017 (baseline)	72.6	72.4
2017–2018	76.1	75.9
2018–2019	79.6	79.4
2019–2020	83.1	82.9
2020–2021	86.6	86.4
2021–2022	90.0	90.0

High School Graduation

The study team took a similar approach in looking at high school graduation rates — another student outcome measures used in the cost analysis. The approved ESSA state plan for graduation rates identifies a baseline of 86.1% of all Kansas students in the 2016-17 school year and in Appendix A identifies its projected measure of interim progress to be 0.68 percentage points growth annually until 2030 in which all students in Kansas would achieve a high school graduation rate of 95%.[cii] Since the time period in which this cost study is looking out is 5 years, calculating the annual growth from a base of 86.1% would result in a graduation rate of 89.5% by 2021-22.

Table 11. High school graduation targets by school year, All students in Kansas ESSA state plan

School Year	High School Graduation Rate, All Students (%)
2016–2017 (baseline)	86.10
2017–2018	86.78
2018–2019	87.46
2019–2020	88.14
2020–2021	88.82
2021–2022	89.50

Finally, the study team investigated the actual levels of student performance across school districts in Kansas. Higher performing school districts, performing at the 90th percentile, have a graduation rate of 91%.

The study team set a target of 95% performance to be achieved at the end of the 2021-22 school year, which is consistent with the state goal to reach the 95% performance threshold for high school graduation identified in the ESSA state plan. Using the 2016-17 school year are the base year the resulting growth is reflected in the table below. Note that a 95% graduation rate for the state as a whole is a much easier standard to meet than a 95% graduation rate for each district. The research team evaluated the cost of meeting a 95% graduation rate in each district, recognizing that such an achievement would lead to a statewide graduation rate well in excess of 95%.

Chapter 4: Education Cost Function Variables and Methods

This section of the report provides a simple explanation of the education cost function method, the primary statistical technique used by the study team to conduct the costing out study for the state of Kansas. It also summarizes the variables, data and measures used in the education cost function analysis, and a discussion of measures that could not be incorporated into the analysis.

As discussed in prior sections, there are three reasons why spending differs across school districts including outcome, cost, and economies of scale. This study addresses those differences in cost along all three of these dimensions to advance an estimated cost to adequately fund Kansas public schools.

Education Cost Function Method

This analysis follows Taylor et al. (2017) and uses stochastic frontier analysis (SFA) to estimate an educational cost function for Kansas. A cost function specifies the minimum cost necessary to achieve certain outcomes with specified inputs and specified environmental factors. In the SFA, this cost function is regarded as a frontier, a minimum cost of attaining given outputs with given inputs including environmental factors. Spending may then deviate from this cost frontier, exceeding this minimum cost. Thus, the SFA starts with a basic cost function and adds the assumption that spending exceeds the cost frontier due to random errors or inefficiency. This approach accounts for the idea that schools or districts can at best be on the cost frontier, if they are fully efficient, and if they are inefficient this is captured in the model.

The per-pupil SFA is more commonly applied in education than a total cost function (e.g., Andrews, Duncombe and Yinger, 2002; Gronberg, Jansen, Karakaplan, & Taylor, 2015). The cost frontier estimates indicate the cost of achieving certain educational outcomes after controlling for cost and other environmental factors. The educational outcomes include a quantity dimension—the number of students served—and a quality dimension. The quality dimensions considered here are conditional normal curve equivalent scores (a measure of growth) and graduation rates.

An important feature of the decision-making environment facing school officials is the competitiveness of the district's relevant education market. Indeed, the literature finds that competition is one factor that can influence a school district's cost inefficiency.[7] The argument is that competition serves to discipline the tendency of districts to engage in excessive spending. This implies a negative relationship between the competitiveness of a district's education market and the magnitude of that district's cost inefficiency.

[7] For example, see Belfield & Levin (2002); Dee (1998); Gronberg et al. (2015); Grosskopf, Hayes, Taylor & Weber (2001); Kang & Greene (2002); or Millimet & Collier (2008).

The literature also suggests that voter monitoring can lead to increased school district efficiency (Grosskopf et al. 2001). Factors that influence the motivation or ability of citizens to monitor their local school district—such as the educational attainment of the population, the share of homeowners or the fraction of the population that is elderly—have also been linked to school district efficiency (Duncombe & Yinger 2005). The stochastic cost frontier framework can accommodate models of how these factors impact spending inefficiency.

For a more detailed description of the SFA used in this study see Appendix A.

Variables, Measures, and Data Sources

The data for this analysis come from administrative files and public records of the Kansas State Department of Education (KSDE), the National Center for Education Statistics (NCES), the U.S. Bureau of Labor Statistics (BLS), the U.S. Department of Housing and Urban Development (HUD) and the U.S Census Bureau. The analysis covers the two-year period from 2015–16 through 2016–17.

The study team requested data sets from Kansas that were important to include in the analysis in constructing cost variables and estimates. What follows is an explanation of the data that was incorporated into the analysis. These include the several components to the educational cost function analysis; the unit of analysis, expenditures, student outcomes, input prices, and environmental factors. These key components are summarized in Table 11 and described in the following sections. See Appendix A for a technical description of the cost function analysis.

Table 12. Key components of the educational cost function

Component	Measured by
Units of Analysis	All standard buildings in traditional public school districts in the State of Kansas Two most recent school years (2015–2016 through 2016–2017)
Expenditures	School-level operating expenditures excluding food, transportation, capital outlay for construction, community service, debt service, fund transfers and adult education.
Outcomes	Average conditional NCE score on state assessments (ELA and mathematics) School- and district-level graduation rates
Input Prices	Teacher Salary Index Rural Indicator

Component	Measured by
Environmental Factors	Number of students enrolled at the district level Building Percentage of Economically Disadvantaged Students Building Percentage of English Language Learner Students Building Percentage of Special Education Students Building Type Population Density
Controls for Inefficiency	Stochastic Frontier Analysis Methodology Efficiency factors: Educational competition Percent college educated Percent owner occupied housing Percent elderly households

The decision to use only the most recent data was made primarily due to the change in state assessments implemented after the 2013-14 school year. Representatives from the KSDE and other state governing bodies expressed strong reservations about the quality of the test data prior to this change, suggesting that the results of the analysis would be viewed as less accurate and reliable if these data were used. Given these concerns, the study team chose to use only test scores data after the 2013-14 school year.

The unit of analysis is the traditional public school building. Alternative schools, charter schools, virtual schools and special schools have been excluded because they may have different cost structures than other buildings. Buildings that lack reliable data on student performance (such as elementary schools that serve no students in tested grades, or very small schools) have also been excluded. A complete list of the included districts is provided in Appendix D.

Table 14 provides means and standard deviations for the variables use in this analysis. Enrollment, the teacher salary index, and population density enter the stochastic frontier regression in logs, while variables already in percentages and the indicator variables are not logged before entering the stochastic frontier regression.

Table 13. Descriptive statistics for buildings in Kansas, 2015-16 and 2016-17

	Mean	Std. Dev.	Minimum	Maximum
Per-pupil operating expenditure	$9,696	$1,961	$5,137	$20,844
Average Conditional NCE	0.50	0.05	0.30	0.76

	Mean	Std. Dev.	Minimum	Maximum
Graduation rate	0.89	0.07	0.60	1.00
Teacher salary index	1.41	0.11	1.00	1.59
Rural county indicator	0.27	0.45	0.00	1.00
District enrollment	7.70	1.58	4.26	9.90
% Economically disadvantaged	0.41	0.21	0.00	0.96
% English Language Learners	0.10	0.16	0.00	0.82
% Special education	0.15	0.06	0.00	0.63
Elementary grade indicator	0.75	0.44	0.00	1.00
High school grade indicator	0.26	0.44	0.00	1.00
Herfindahl Index	0.38	0.25	0.13	1.00
Share of spending unallocated	0.34	0.09	0.00	0.91
Potential employers in building zip code	327	388	0.00	1,646
County unemployment rate	4.26	0.97	2.00	7.50

Note: Virtual schools, alternative schools, charter schools, and special schools have been excluded, as have all buildings with fewer than 10 students for whom conditional normal curve equivalent (NCE) scores could not be calculated.

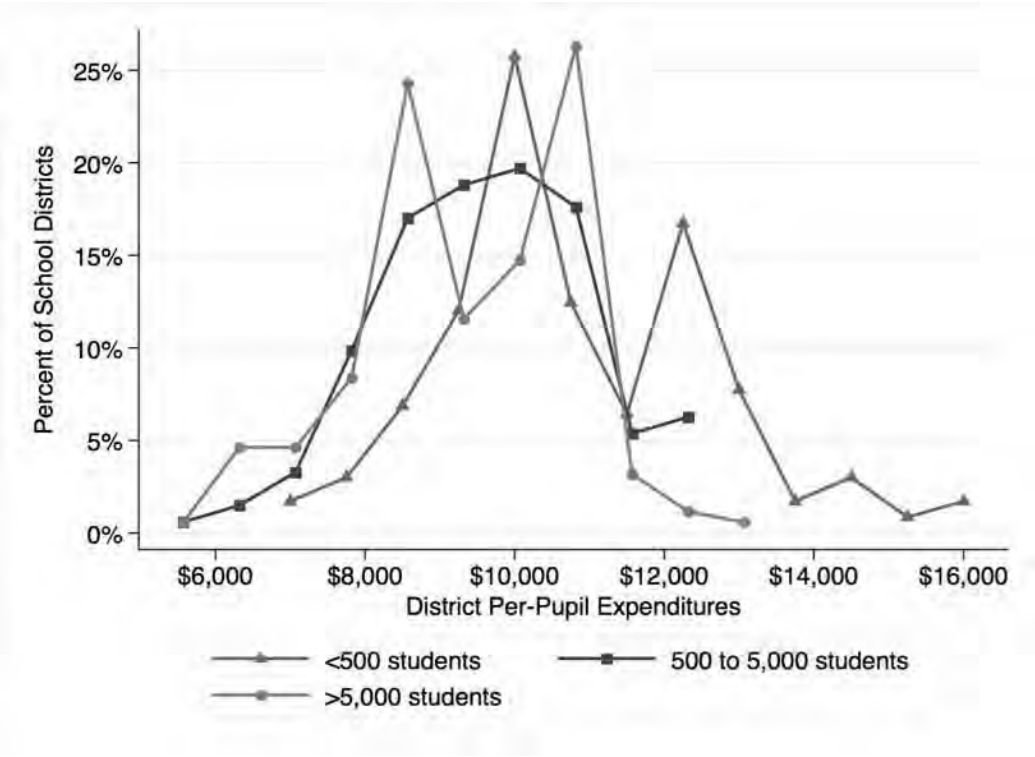
The Dependent Variable (Per-pupil expenditures)

For each district, the researchers identified total operating expenditures for food, student transportation and all other operating functions. As described in Appendix C, operating expenditures include the day-to-day expenses of school districts, such as salaries, benefits, purchased services, and supplies and materials. Debt service, construction expenditures and fund transfers are not considered operating expenditures. In turn, the category of all other operating functions includes the normal functions of school districts: instruction, student support services, administration, and the operation and maintenance of the district's facilities.

A complicating factor is that Kansas school districts regularly rely on special education co-operatives or inter-local agreements to provide special education services. With a special education co-operative, one district collects contributions from the other members of the co-operative, and hires teachers or purchases supplies on their collective behalf. To account for those expenditures, the researchers used the Kansas Education Directory to identify the members of each co-operative, and shared out the spending of each cooperative (i.e. the spending from fund 78) to the member districts according to each district's share of the special education students served by the co-operative. Payments to the inter-local (from funds 564 and 565) were the best available measure of spending by the members of an interlocal. However, we note that special education cooperatives and inter-locals can also receive revenues from other sources (such as the federal government); such revenues are accounted for in the expenditures of districts that do not participate in an inter-local agreement or special education cooperatives, and in the expenditures from fund 78 by special education cooperatives, but cannot be accounted for with the available data for the districts participating in inter-local agreements.

Figure 3 displays the distribution of 2016-17 average per-pupil district-level expenditures from the estimation sample. As can be seen below average per-pupil spending ranged from $5,935 to $17,083 in 2016-17.

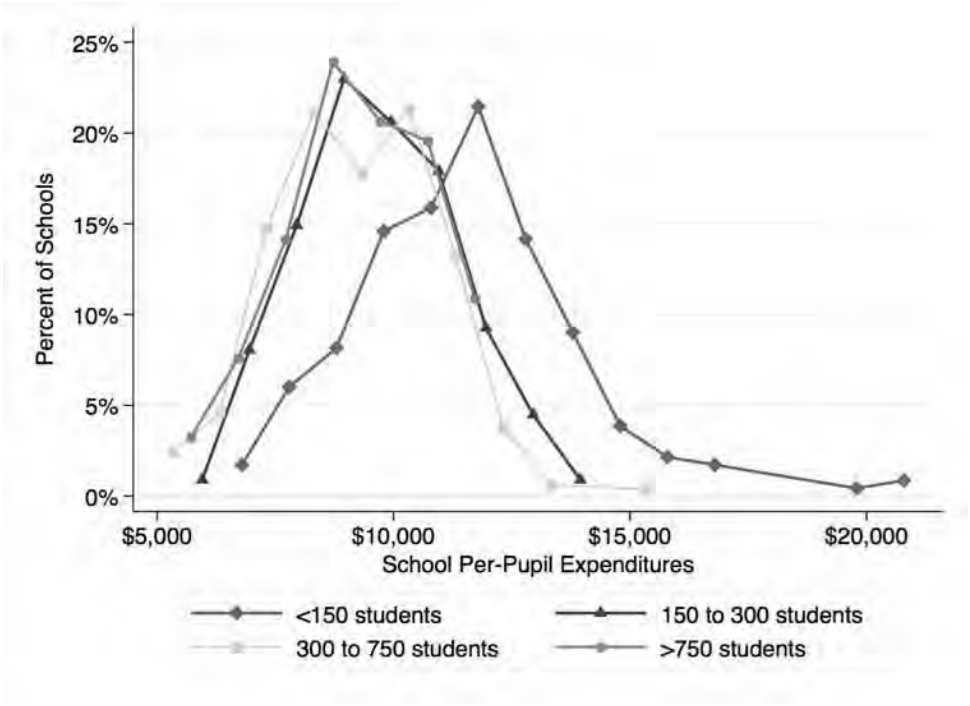
Figure 2. Distribution of per pupil spending in Kansas by district size, 2016-17



The study team then followed five steps to distribute the district-level current operating expenditures to the building level:

1. Using data on certified personnel assignments and earnings, calculate total assigned salaries for each building each year.
2. Calculate total payroll (salaries and benefits) for each building by adjusting the building-level salaries by the district-specific benefits ratio.
3. Assign the remaining payroll expenditures for the district to the buildings on a per-pupil basis.
4. Assign all non-payroll expenditures–excepting special education funds—for the district to the building on a per-pupil basis.
5. Assign all non-payroll special education expenditures for the districts to the building on a per-special education-student basis.

Figure 3. Distribution of per pupil spending in Kansas by school size, 2016-17

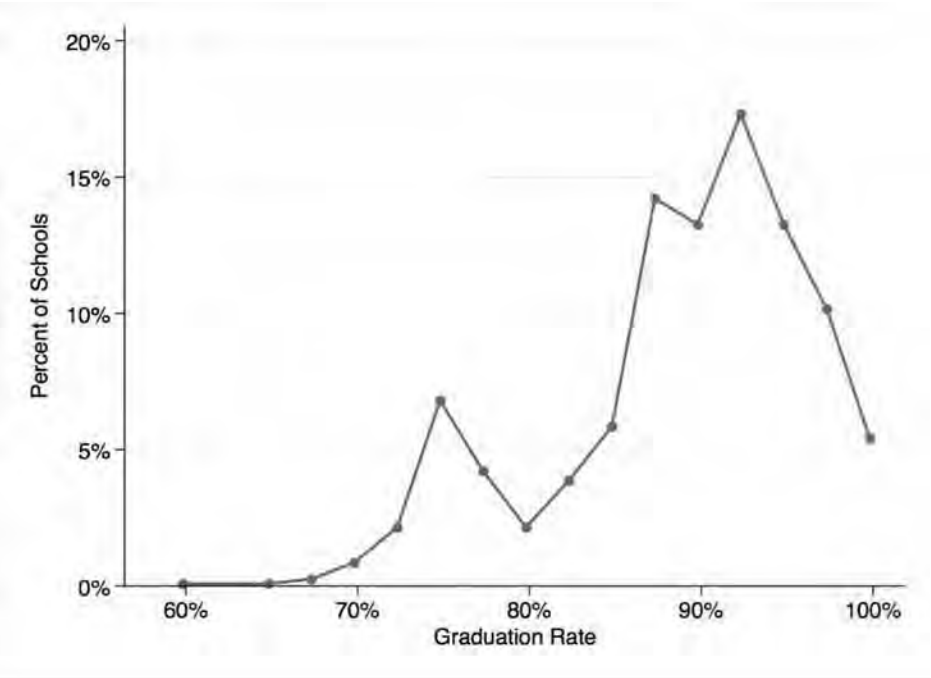


Outputs (Student Outcomes)

As noted above, the analysis uses two measures of quality—levels and growth. The levels measure is the ultimate, summative evaluation of high school achievement—graduation rates. We were provided with school-level graduation rates which represent the percentage of each longitudinal cohort that graduated within four years. We also received the variables used to calculate these rates including total number of graduates and the total number of students in the four-year cohort.

To calculate district-level graduation rates, we divided the sum of total graduates in a given year and district by the sum of students in the corresponding cohort. In some cases, the graduation rate data were suppressed due to concerns about student privacy. For buildings in which all or some of their graduation data was suppressed, we imputed values using school averages across years of available data or imputed district rates at the school-level. For a detailed description of our imputation method see Appendix A. As can be seen in Figure 4 below, in 2016-17 the average graduation rate in the estimation sample was 0.89, ranging from 0.59 to 1.00.

Figure 4. Distribution of school graduation rates in the estimation sample, 2016-17



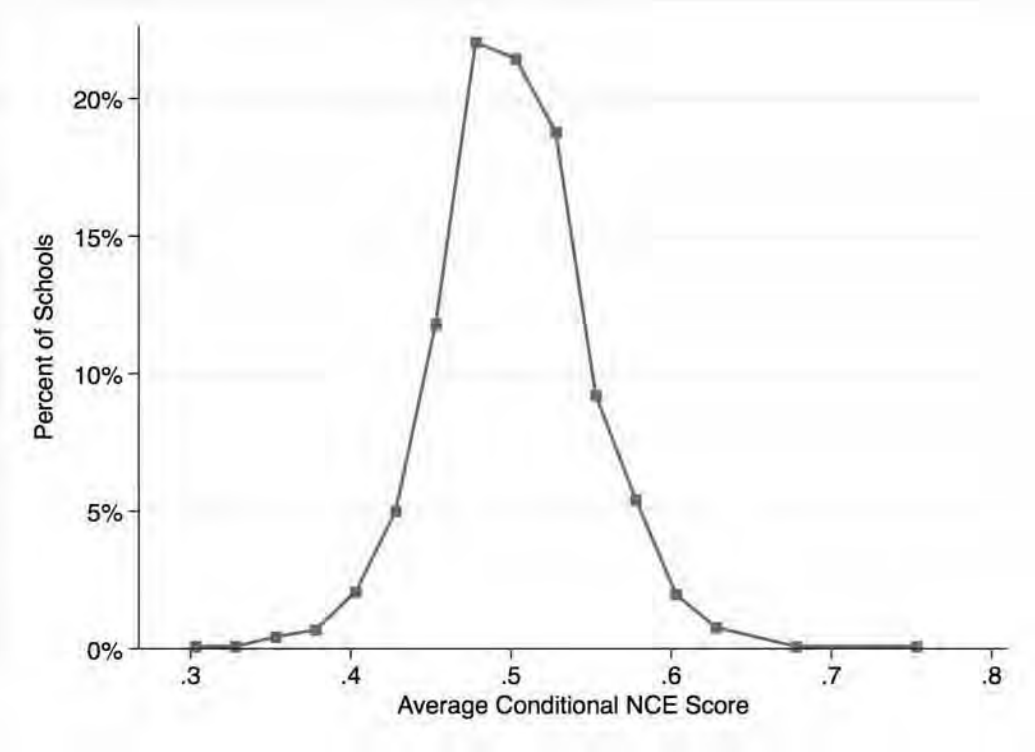
The growth measure is a normalized gain score indicator of student performance on the Kansas Assessment Program (KAP) summative evaluations in reading and mathematics in grades 3–8. Although schools clearly produce unmeasured outcomes that may be uncorrelated with mathematics and reading test scores, and standardized tests may not measure the acquisition of all important higher-order skills, these are performance measures for which districts are held accountable by the state, and the most common measures of school district output in the literature (e.g., Duncombe and Yinger, 2005; Gronberg, Jansen & Taylor, 2011a, 2011b, 2017 or Imazeki & Reschovsky, 2006). Therefore, they are reasonable output measures for cost analysis.

KAP scores can be difficult to compare across years, grade levels and test subjects. Therefore, this analysis relies on normalized (or equivalently, standardized) test scores. The normalization follows Reback (2008) and measures the extent to which individual students perform better (or worse) than would have been expected given their prior test scores. For ease of exposition and estimation, the normalized score were further transformed into Conditional Normal Curve Equivalent (NCE) scores (which are defined as 50+21.06*z-score). A student who performs exactly as expected — i.e., exhibits normal growth from one year to the next — would have a Conditional NCE score of 0.50; a student who performs one standard deviation above expectations would have a Conditional NCE score of 0.7106; and a student who performs one standard deviation below expectations would have a Conditional NCE score of 0.2894. The Conditional NCE scores can also be interpreted as percentile ranks, with an NCE of 0.50 representing the 50th percentile.

Conditional NCE scores are calculated at the student level in ELA and math. (Similar growth scores cannot be calculated for science because the test is not administered in consecutive grades, so annual growth in science cannot be calculated.) Averaging those Conditional NCE scores at the building or district level

yields the measures of performance used in this analysis. Figure 5 displays the distribution of average Conditional NCE scores for ELA and mathematics in 2016-17. The average Conditional NCE score had a mean of 0.50 with a minimum of 0.30 and a maximum of 0.76. As seen in the figure, the distribution for both subjects is bell-curved with most schools seeing average scores of between 0.40 and 0.60.

Figure 5. Distribution of Conditional NCE scores, 2016-17



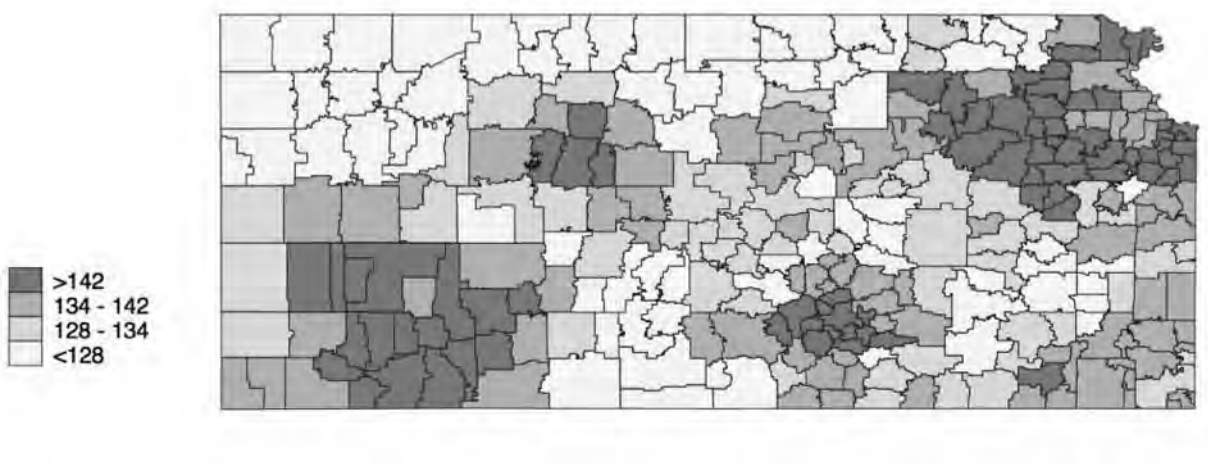
Input Prices

The most important education inputs are teachers, and the cost function model includes the required teacher wage variable. Public schools take differing approaches to hiring teachers. If there were a teacher type hired by all unified school districts — for example, a teacher with a bachelor's degree from a selective university and two years of experience — then arguably the model should use the wages paid to those teachers as the labor price measures. However, it is not possible to identify a teacher type that is hired by all the school districts under analysis, and any observed average wage — such as the average salary for beginning teachers — reflects school and district choices about the mix of teachers to hire and the salaries offered to teachers in the hiring process.

This issue can be dealt with using a wage index that is independent of school and district choices. Such an index is constructed here by estimating a hedonic wage model for teacher salaries and using that model to predict the wages each school would have to pay to hire a teacher with constant characteristics (see

Appendix B). The resulting teacher price index, which reflects the systematic variation in teacher salary that is related to cost factors outside of school district control, ranges from 1.00 to 1.59 and indicates that the cost of hiring teachers is more than 50% higher in some of parts of Kansas than it is in others.

Figure 6. Map of Kansas Teacher Salary Index, 2016-17



In an ideal situation, the estimated cost function would include direct measures of local prices for instructional equipment and classroom materials. Such data are, unfortunately, not available to researchers. However, prices for pencils, paper, computers, and other instructional materials are largely set in a competitive market (and therefore unlikely to vary across schools), and prices for nonprofessional labor or building rents are largely a function of school location. Therefore, the cost analysis includes an indicator for whether or not the district is located in a rural county. A rural county is one that is not part of either a metropolitan area or a micropolitan area as designated by the U.S. Office of Management and Budget.[8]

Other Environmental Factors

The cost model includes indicators for a variety of environmental factors that influence district cost but which are not purchased inputs. A major environmental factor in this study is district enrollment. In general, there are typically three ways to measure student enrollment. The first of these is simply a count of students enrolled on a particular day during the school year. The second is average daily membership (ADM), which is typically measured over the course of the school year. The third measure is average daily

[8] Miles to the center of the metropolitan area for each building was calculated as-the-crow-flies using latitude and longitude information. The latitude and longitude of metro centers come from the U.S. Census Bureau. Where available, latitude and longitude information for buildinges are taken from the NCES' Common Core Database. The remaining buildinges are assigned latitudes and longitudes according to the zip codes at their street address.

attendance (ADA) which is based on actual attendance rates, rather than number enrolled. These measures could also be used as head counts or represent a measure of full-time equivalence (i.e. half-time students would be counted as .5). For this study, we used state head count student enrollment taken on a single day at the start of the school year. This measure was used primarily because the assessment data required the use of head counts, and thus it was only measure consistently available. These data were provided by the Kansas State Department of Education. In the estimation sample district enrollment averaged 1,851 students, with a minimum of 110 and a maximum of 50,566.

Another key environmental factor is population density, measured as the population per square mile. School buildings are likely to be smaller (all else equal) in districts with larger geographic footprints, where the time costs of transporting students to scale-efficient buildings could be prohibitive.

To capture variations in costs that derive from variations in student needs, the cost function includes the percentages of students in each district who were identified as English Language Learners, special education, and economically disadvantaged. The English Language Learner and economically disadvantaged data were suppressed requiring imputation and a detailed description of the imputation methods used can be found in Appendix A.

To allow for the possibility that the education technology differs according to the grade level of the school, the cost model includes indicators for whether or not the school serves elementary grades (i.e., grades PK-6), and whether or not the school serves high school grades (i.e. grades 9-12).

Finally, fixed effects for year control for inflation and other time trends in Kansas education.

Efficiency Factors

Stochastic frontier analyses allow for the possibility that some schools spend their available resources more efficiently than others. School spending is therefore thought to depend on more than educational costs, but also on a number of factors that theory suggests may explain differences in school efficiency. Prior research has demonstrated that competition can reduce inefficiency in public education (e.g., Belfield & Levin, 2002; Millimet & Collier, 2008; Gronberg et al. 2015), and so can ease of voter monitoring (Grosskopf et al. 2001). Therefore, analysis includes a combination of five factors that might influence spending efficiency—the degree of educational competition in the metropolitan area or county; an indicator for whether or not the district is located in a metropolitan area that spans state lines (because the level of competition is imperfectly measured in those education markets using only Kansas data); the percentage of household that are owner-occupants, the percentage of the population with at least a bachelor's degree and the percentage of households wherein no residents are over 60 years of age. We note that the latter three variable were also treated as efficiency factors in Duncombe and Yinger (2005).[9] As is common in the literature, the degree of educational competition is measured with a Herfindahl index

[9] By assumption, the one-sided error term has a half-normal distribution. Jenson (2005) finds that specifying a half-normal distribution for the inefficiency term generates more reliable estimates of technical efficiency than other assumptions about the distribution of inefficiency.

of enrollment concentration. A detailed description of this measure, and how it was used in this analysis can be found in Appendix A.

Data Observed but Not Included

ACT College Readiness Assessment

Scores on the ACT college readiness assessment were considered as a possible student outcome measure. These scores are a reasonable proxy for college readiness, and thus may have served as an appropriate measure of student performance.

However, there was a concern among the study team, and evidence in the literature, that access to the ACT itself is not universal (citation). That in fact, scores may reflect the extent to which a student has access to the test rather than their performance due to this variation in access.

Advanced Placement Exam Results

Another measure of student performance considered were advanced placement (AP) exam results. However, it is even more likely that these results reflect access more than actual performance. Simply put, not all students even have access to the curriculum which would prepare them to take the test, let alone the ability to take the test through their school. For this reason, the study team decided not to include this measure.

Participation and Successful Completion of Post-secondary Degree and/or Certification

Postsecondary data was also made available at the district level including success rates and effective rates and their component parts. These data are aligned to the sixth and seventh Rose capacity and were thus considered as student outcome measures. However, ultimately these data could not be included for two reasons. First, during the initial years of data collection, data reported did not include students attending community colleges and thus under-reports those students that Kansas school districts successfully sent on to post-secondary pursuits. Second, the most current year of these data available, 2014-15, lags two school years behind 2016-17, the most current year available in other key data sources such as the enrollment data and assessment data. In order to conduct the analysis there needs to be parallel datasets (i.e., assessment scores and post-secondary rates in the same year). Moreover, the study team does not have a statistically reliable method to forecast these data two years forward (i.e. 2015-16 and 2016-17) that would have made it possible to include such data in the analysis.

Attendance Rate

Finally, the study team considered including attendance rates, as this is included in the state accountability system, and thus a relevant as a measure of school performance. However, as noted in Duncombe and Yinger (2005), attendance rate data have very little variation making it difficult to detect a relationship between these rates and school spending. Therefore, attendance rates were not included in the analysis.

Chapter 5: Education Cost Function Variables and Methods

This chapter reviews the results of the cost function analysis for Kansas that includes the coefficient estimates that inform the pupil weights and estimated, additional costs for Kansas to adequately fund its public education system.

Cost Function Estimates

Table 17 presents coefficient estimates and standard errors from the cost function analysis. As the table illustrates, the analysis finds a strong, positive relationship between educational outcomes and educational costs, once differences in scale, need and price are taken into account. Consider first the Conditional NCE scores. The estimation indicates that a one percentage point increase in academic performance is associated with a 5 percent increase in cost. Similarly, a one percentage point increase in the graduation rate is associated with an 1.2 percent increase in cost at lower grades and a 1.9 percent increase in cost at the high school level.

Table 14. Cost Model Coefficient Estimates

LABELS	Baseline
Normal Curve Equivalent	5.295***
	(-0.607)
Graduation Rate	1.244***
	(-0.262)
Graduation Rate * High School	0.696***
	(-0.0995)
District Enrollment	-1.444***
	(-0.0568)
District Enrollment squared	0.0991***
	(-0.00378)
Salary index (log)	1.373***
	(-0.279)
Rural indicator	0.0505***
	(-0.0112)
% Economically Disadvantaged	0.886***
	(-0.078)
% English Language Learner	0.226***
	(-0.0667)
% Special Education	2.157***
	(-0.226)
Population Density	0.166***

LABELS	Baseline
	(-0.018)
Elementary grades served	-0.129***
	(-0.016)
High school grades served	-0.508***
	(-0.0909)
% English Language Learner, sq	-0.623***
	(-0.109)
% Special Education, sq	-6.135***
	(-0.674)
Population density* Salary Index	-0.510***
	(-0.0414)
AYP Schoolyear = 2016	-0.0364***
	(-0.00591)
First stage Residuals, NCE	-5.102***
	(-0.609)
First stage residuals, Graduation	-1.454***
	(-0.271)
Herfindahl Index, log	0.797***
	(-0.249)
Border metro	2.320***
	(-0.372)
% Owner occupied	7.293***
	(-1.321)
% Over 60	-2.316
	(-1.496)
% College	-12.06***
	(-1.542)
Constant	9.644***
	(-0.357)
Usigma	-7.214***
	(-0.958)
Vsigma	-4.095***
	(-0.0418)
Observations	2,310

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

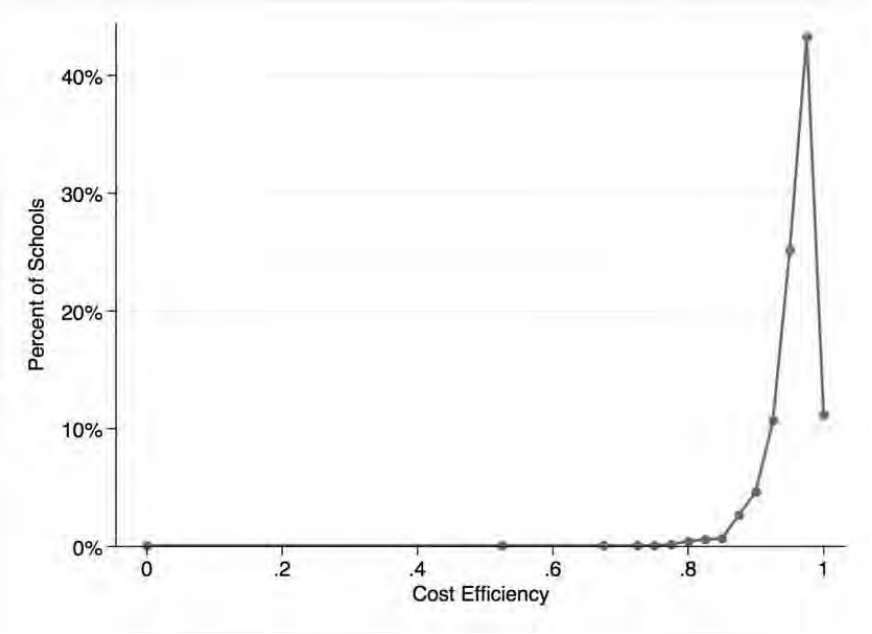
The remaining coeffiicents in the cost model align with reasonable expectations about the relationships among inputs, outcomes and environmental factors in education. Costs fall with district size, but only up to a point. Costs rise with district size for school districts with more than xx students. Costs rise as population density rises and as teacher salaries increase, but the interaction between wage levels and population density is negative, suggesting that the higher costs associated with sparsity trump the lower wage costs in sparsely populated areas. Rural schools have higher costs than otherwise equivalent

nonrural scools. Costs rise with student need, but the effects are generally non-linear, suggesting for example, that the additional cost associated with increasing the share of ELL students becomes smaller as the student population reaches a critical mass.[10]

Finding #1: Efficiency Results

An important part of this study was the estimation of cost efficiency, or inefficiency. Figure A8 graphs the distribution of cost efficiency for the baseline model.[11] In Model 1, the average cost efficiency score was 0.956, indicating that buildings were producing nearly 96% of their potential output, on average.

Figure 7. Distribution, cost efficiency for the cost model



Given that inefficiency in this context means unexplained expenditures, not necessarily waste, and that many buildings may have been producing outcomes that were not reflected in test scores, the average efficiency level was quite high. However, the minimum efficiency scores were below 50%, suggesting that some buildings spend much more than could be explained by measured outcomes, input prices or student need. The analysis demonstrates that enhancing school efficiency also enhance factors that enhance the ability of voters to monitor school and school district behavior. Inefficiency rises as the Herfindahl Index increases as the percent over 60+ college grads increase efficiency. The amount of unexplained spending

[10] Researchers examined a model in which the relationship between the percentage of free lunch students and cost was quadratic, but such a specification was rejected at any reasonable level of statistical significance. See Technical Appendix A.

[11] Cost efficiency was estimated following Battese and Coelli (1995).

rises as the percent owner occupied suggests that unexplained cost may represent unobservable outcomes.

Finding #2: Estimating the Base and Compensatory Cost Per Pupil

Using the coefficient estimates the study team can now predict the level of necessary spending for individual school district and the state overall will need to achieve the performance thresholds identified in Chapter 3 of this study. As a brief review, the table below recalls the performance thresholds across the ELA and math assessments as well as graduation rates for school districts under the "approaching on track for college readiness" and "on track for college readiness."

Table 15. Percentage of students meeting performance thresholds under two different scenarios

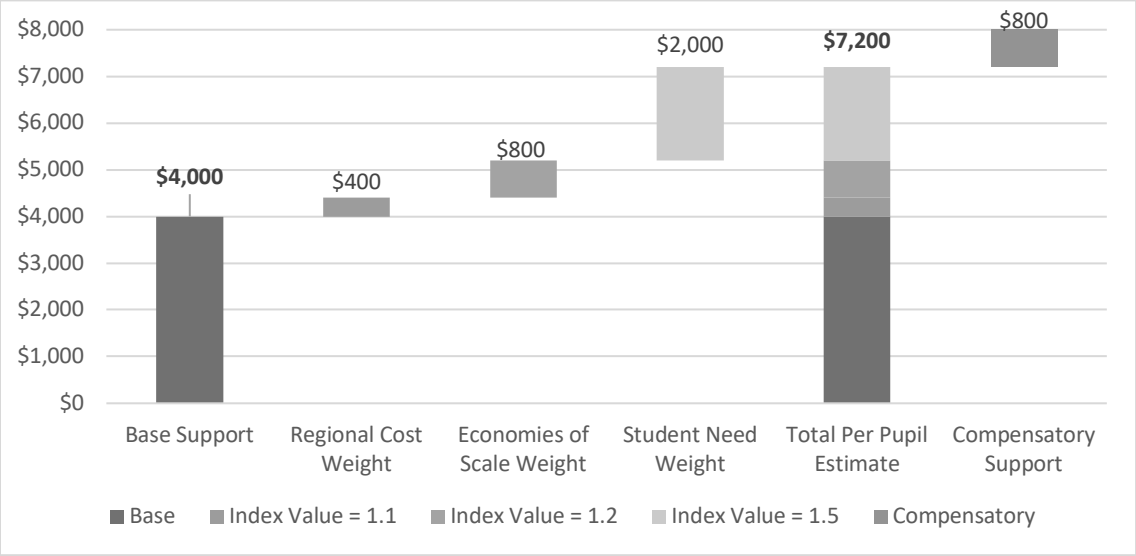
	ELA Assessment (Level 2+)	Math Assessment (Level 2+)	ELA Assessment (Level 3+)	Math Assessment (Level 3+)	Graduation Rate
Scenario A: Approaching on track	90%	90%			95%
Scenario B: On track			60%	60%	95%

Scenario A is approximately equivalent to the threshold of performance used in the former assessment under the No Child Left Behind (NCLB) law. Scenario B has re-benchmarked student readiness to identify those on-track for college and career readiness. This scenario reflects the updated Kansas standards and a more difficult performance threshold for students to achieve, hence the overall lower total percentage of students achieving that level or better. For further discussion of this rationale, see Chapter 3.

Estimated Cost to Reach Performance Thresholds

For each district in Kansas, the research team generated an estimate of the base costs associated with meeting the designated performance goals, plus appropriate adjustments for student demographics, regional differences in cost and economies of scale. The graphic below illustrates simply the cumulative nature of these calculations. For the purposes of this graph, the values listed below are for an example school district in Kansas.

Figure 8. Illustrative example to calculate cost estimates for maintenance funding



Attaining these thresholds of performance requires three initial calculations. The first calculation is generating a cost estimate for a Conditional NCE score of 0.50 (I.e. normal academic progress) and a graduation rate of 95% growth, assuming that the school had the least costly combination of regional cost, student demographics and scale. Consider this "base support" to ensure school districts and the students they serve continue to make progress year after year. This base support differs according to the grade configuration of the school, with the lowest base cost ($3,395) associated with elementary schools and the highest base cost ($4,500) associated with high schools. The estimated base cost for any given district is a pupil-weighted average of the base costs for the district's existing mix of school buildings.

The second calculation estimates the adjustments for demographics, regional costs and economies of scale. Each of these calculations yields an index describing the increasing cost associated with each of these cost factors.

The final calculation estimates the amount of necessary, additional resources for school districts and the state overall to close the gap between current and desired performance. Notably, this requires that school districts currently achieving at lower levels than others accelerate student growth at a faster pace (consider this "compensatory support"). Districts that are currently outperforming the thresholds and those growing faster than necessary to reach the targets within five years are held harmless in this calculation, so that the compensatory support estimate includes the funds required to at least maintain current levels of annual progress in all districts.

Finding #3: Student Need Weights

One of the advantages of the cost function method for costing out studies, as discussed earlier, is the ability to estimate the marginal costs (i.e., additional spending associated with factors such as student characteristics or school characteristics) for the school system. This can be particularly useful in the

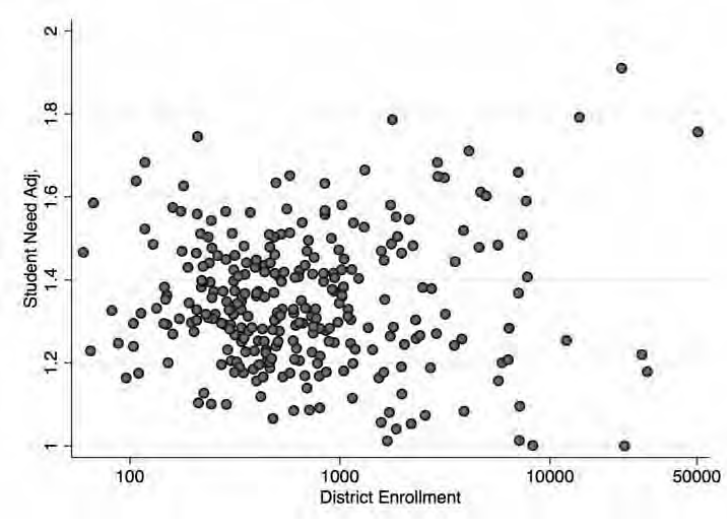
context of state funding formulas. Kansas, like many other states, assign funding that goes above and beyond the based spending to certain student groups either implicitly (e.g., double counting for more needy student populations or explicitly, creation of a categorical program which assigns a certain amount of funding directed to support a specific student population). In either case, Kansas has created a 'weight' or an additional amount of money that is directed to certain student populations. A simple illustration of this is, if the base allocation per pupil is $1,000 and the weight for a low-income student is 0.80 this would apply an additional 80% in allocation, or $1,800 for this student.

The utility to this study is that Kansas can compare its current allocation of resources to these other student populations in comparison to the estimated weights generated through the cost function. The cost function generates as one of its outputs coefficients. Coefficients are particularly useful in isolating variables and determining their impact on the dependent variable (spending) while holding all other factors constant. That is, the coefficients generated for student groups such as low-income, English learners, and students with disabilities are effectively the weights necessary to support those student groups to achieve the defined performance threshold. Kansas most recently modified their weights for several of these student need categories, including low-income students and English learner students.[ciii]

The student need weights are calculated using several steps. First, an estimated base cost for the general education student is selected as described in the table above. This estimated base cost is then multiplied by the aggregate weight for student need characteristics incorporating students that are low-income, English learners or special education. The weighting values range from 1.0 to 1.91 in which lower values represent an overall lower student need in that school district versus those with higher values reflect higher overall student need in the school district.

For each school district, the average student need weights vary dependent on the concentration of the student population served. The figure below illustrates this point where we see a much larger variation in the low-income weight as compared to the English learner or special education weight.

Figure 9. Distribution of student need weights by district enrollment



These student need weights are used in helping to generate the final cost estimates for Kansas by individually applying these weights to the base cost for each district multiplied by the number of students in each of those need categories.

The first of three student need weights are the most straight forward. The poverty weight is 0.89 which is a substantial increase from the current weight of 0.48. It is not quadradic in any way and increases with concentrations of poverty.

The second of three weights are for English learners. We can observe a substantial weight at the outset at 0.2 but will drop as the concentration of these students increases. This is logical because for those schools or school district with a small number of English learner students the associated cost is related as much to the cost as it is for economies of scale. The study team also identified that the weight for English learners is highly collinear with poverty. It is also worth noting that Duncombe & Yinger (2005) produced essentially a weighting of 0.00 for English learner students.

The third of three weights are for special education. In this case we see a negative weight. That is a decrease in cost associated with an increase in the proportion of the population at the school district. The study team believes the reason for this may be an interaction with interlocal special education co-operatives. That is, the model incorporates spending of special education but is unable to incorporate a substantial amount of resources made available to the interlocal thereby creating a potential effect of when school districts have larger proportions of special education students they access more interlocal services and those spending on behalf of those students were not captured in the analysis.

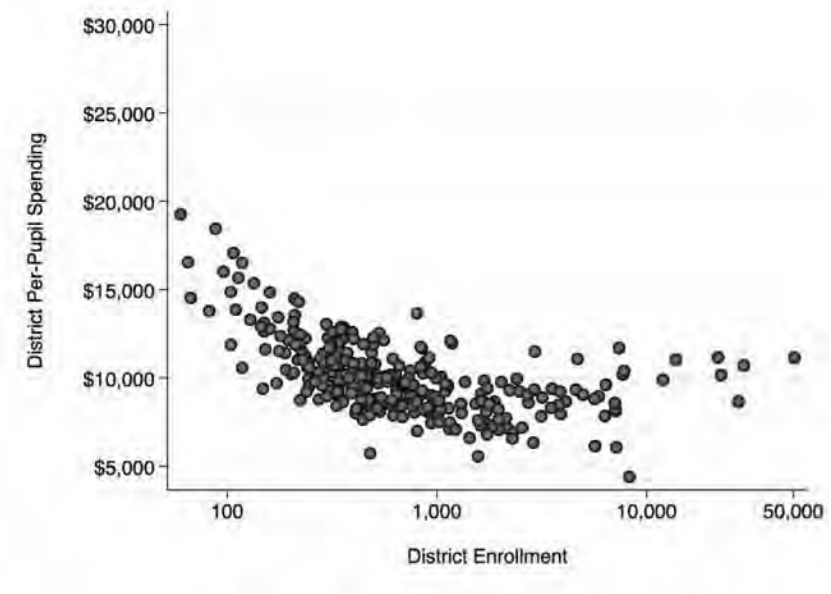
Finding #4: Regional Cost Index

Analysis from the study also showed the wide variation in prices associated with the cost of education. The factors that primarily drive this index include measures of sparsity such as population density and the rural indicator as well as the teacher cost index. As described in chapter 4 there are substantial differences in regional cost, some of which are quite significant over even a smaller geographic area. The regional cost index is composed of three variables which include the teacher salary index, and measures of sparsity including population density and the rural indicator. The index value, ranging from 1.05 to 1.94 identifies the amount that the base per pupil amount needs to be adjusted in order to account for the differences in prices and the costs associated with sparsity across communities in Kansas.

Finding #5: Economies of Scale Index

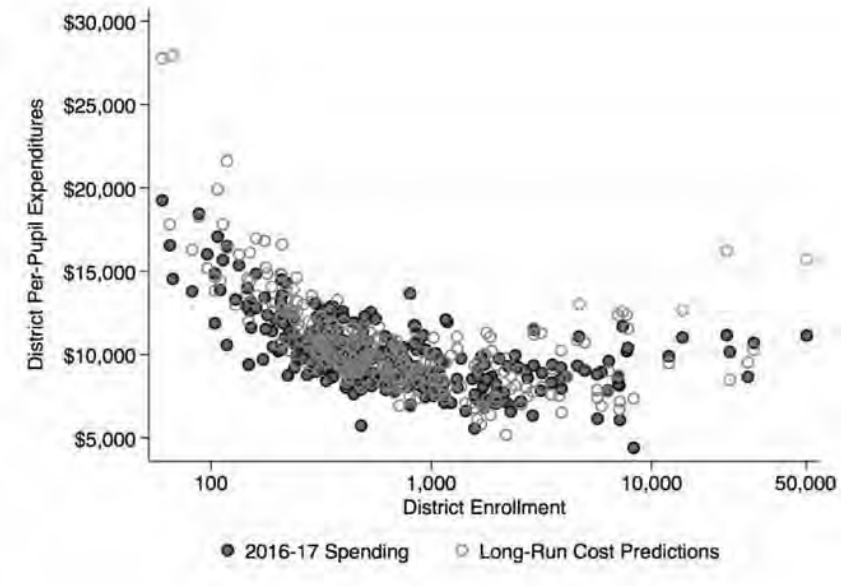
The impact of economies of scale is quite large on Kansas in large part due to the sparsity of its population across a larger geographic area compared to other states in the country. This implies that a larger amount of money is necessary for some schools and school districts at the tails of the distribution of enrollment. The figure below offers an example of this in which we can observe a U-shaped curve across the distribution implying much higher costs per pupil for smaller districts and a gradual increase as school district get significantly larger (i.e., larger than 10,000 students).

Figure 10. 2016-17 school district per pupil spending by enrollment



When comparing the actual 2016-17 spending per pupil as compared to the generated cost estimates we see a U-shape for the cost estimates the mimics a shape in which the tails of the U have a steeper slope than that of the actual 2016-17 spending. This can be observed in the figure below. This implies that the actual 2016-17 spending per pupil does not account as well for economies of scale as the generated cost estimates from this study.

Figure 11. 2016-17 school district per pupil spend by enrollment compared to cost estimates



The economies of scale index functions similarly to the previous index in how it is applied to adjust the base per pupil amount. Specifically, this index ranges from 1.0 to 2.75 and the index values recognize the higher or lower associated costs with the total overall enrollment of the school district.

The result is the total per pupil estimate to ensure maintenance of continuing to attain the thresholds of performance mentioned earlier in this section. In addition to these associated costs, the researchers also calculated the amount necessary to close the gaps on the ELA and math assessments in addition to maintaining one year's approximately growth, referred to as compensatory cost estimates. This amount is expressed as a per pupil allocation that would be added to the total per pupil estimate.

Based on data provided for this study, Kansas spent approximately $4.652 billion on its education system in the 2016-17 fiscal year serving 489,795 students (based upon headcount enrollment) or $9,313 in actual expenditures per student. The total spending figure was calculated according to the inclusion and exclusion criteria detailed in Appendix D. Of those students, the table below offers some descriptive statistics on the proportion of those students in various need categories.

Table 16. Kansas overall student and student need enrollment and percentages, 2016-17

	Enrollment Counts	Percentage of Total Enrollment
Total Enrollment	***489.795***	***n/a***
Low-income*	**190.158**	**38.8%**
English Learners	**56.759**	**11.5%**
Special Education	**69.013**	**14.1%**

* This count is reflective of the number of students eligible for free lunch under the National School Lunch Program.

Table 17. Overall investment for base and compensatory support under two scenarios

	Cost Estimate ($)	Percent Increase Over Current	Per Pupil Cost Estimate ($)
Current K-12 Spending	**$4.652 billion**	**n/a**	**$9,313**
No compensatory support	**$5.103 billion**	**9.7%**	**$10,419**
Compensatory support for Scenario A	**$6.438 billion**	**38.4%**	**$13.144**
Compensatory support for Scenario B	**$6.719 billion**	**44.4%**	**$13,717**

The cost estimates in the second column above are the investments each year, in total, for the K-12 education system for the next five years that would close the gap between current performance and the established thresholds of performance.

Finding #6: Phase-in funding increases over time with targets

The cost estimates noted above are also important to put in the context of how the education system is able to appropriately use those investments over time. That is, it is not practical to make a one-time, significant investment in a statewide public education system and expect at the end of that school year to see dramatic movement from current performance to the aspiration targets. Alternatively, making ongoing and incrementally larger investments in the system over time with established targets may be more practical for practitioners to plan and determine the appropriate ways to invest the funding.

One consideration is to consider these investments over a 5-year period of time.

Finding #7: Consider "how well" alongside "how much"

It is important to keep in mind that while adequate funding is necessary for achieving desired student outcomes, funding alone is not sufficient; the funds must also be put to effective use. After all, schools with similar student populations, receiving similar funding, can have vastly different student outcomes due to differences in local policies and practices (Williams, Kirst, Haertel, et al., 2005). Thus, if one fails to consider *how well* resources are used, then increasing *how much* resources are provided may have a limited effect on student outcomes.

As noted earlier in Chapter 2 there are various avenues in which a state education system and associated school district organizations can design, build and implement structures that encourage such investigations at the individual, team and even organization level. Yet, we must recognize that the complexity and scale increase exponentially moving along a continuum from an individual to an organization wide attempt to markedly improve 'how well' resources are being used to improve student outcomes.

This consideration is done in a manner that considers holistically the findings identified in this study that would bring together the additional, necessary resources along with the transformative structural changes in the school system that would allow for the most effective use of those additional dollars invested in public education.

Finding #8: Increase the transparency and availability of data

Kansas, among all states in the country, is recognized as a leading state in its data systems and availability as recognized by the Data Quality Campaign. And, the state can continue to improve and learn from how other states have continued to evolve educational data available to professionals and the general public at large. In particular, the availability of data can help to facilitate the investigation and improvement of the system on a wide variety of topics from increasing the efficiency of transportation routes to improving instruction in the classroom with a diverse group of learners.

The state hosts most of its publicly available data through a web portal named Data Central (http://datacentral.ksde.org). The portal offers a wide variety of reports and data including building report card information, school finance reports, educational directory reports, special education reports, and child nutrition information. Some of the data posted on the public portal is available in static formats such as Microsoft Word or PDF. Other datasets through the Kansas K-12 Reports offer more flexible datasets in formats such as Microsoft Excel that also draw from the entire school and school district population. And, some of the reports lack context necessary for education professionals or the general public to understand the context of the information or the source of information.

Data is a critical component to any improvement effort and provided with the right data to, at the least, ignite a conversation for change can be powerful. One example that Kansas may look to is Texas. The Texas Smart Schools project (http://txsmartschools.org) provides school and school district leaders the ability to benchmark themselves against similar matched peers that provide initial insight into how others are doing. Such a data system facilitates easier access to information that removes a significant barrier for practitioners to access information.

Finding #9: Pair support strategies with accountability measures

As discussed in Chapter 2, the state framework for increasing effective resource use relies on numerous tenants that are in tension with one another, e.g., accountability and support for example. To encourage districts to use resources efficiently – that is, cost-effectively – federal and state agencies have implemented a number of accountability systems over the decades. The concept of an accountability system still holds tremendous value, particularly in advancing educational equity. Both through rewards and sanctions and through the public reporting of school progress, accountability systems can be a powerful tool in focusing resource allocation toward improving outcomes for disadvantaged students. Furthermore, after years of practitioners' vocal dissatisfaction with previous accountability measures, the landscape of federal and many states' policy has been shifting toward more flexible accountability systems. For example, many states have reformed their accountability systems to measure success indicators beyond standardized test scores, such as graduation rates and other college and career

indicators, and to offer comprehensive support systems to low-performing schools, rather than merely rewards and sanctions (Center for American Progress and the Council of Chief State School Officers, 2014).

It is the consideration of these current shifts in the national landscape that afford a tremendous opportunity for Kansas to re-evaluate its orientation and function in relation to school districts. One potential point of leverage is the efficiency reviews authorized by the Legislature. The reports, comprehensive in their approach, develop a rich set of information that is valuable not only to the school district going through the review but also potential to other school districts based on what insights are surfaced. This value can be identified in a few key ways:

- The analytical and comparative techniques used by staff in the Legislative Post Audit have applicability in other environments and forums;
- The insights reached – although mostly oriented towards compliance with the law – surface matters of process, culture and performance important for any organization to consider; and
- The school district's response represents one way in which to engage in an exchange with an independent outside observer that may offer perspective valuable to the organization.

Further, that state may create an opportunity for support to the school district to either work with the state or their peers to identify pathways to implementing the recommendations outlined in the review. This is discussed in Chapter 2 with the development and implementation of networks. The orientation of the networks can shift around the topic, but their rigor and attentiveness to the learning of the professionals is paramount and can contribute to the school system experiencing even greater degree of effectiveness in the future.

Finding #10: Consider streamlining various funding programs

Kansas, like many other states, has developed school finance formulas over time in which elements have been added but not necessarily considered as a whole. Even as the school finance formula has been reformed throughout the school finance litigation history in Kansas, there remain numerous and complicated calculations to generate the funding amount for school districts. Two observations underlie this point. First, in calculating the amount of state aid, there exist at least fifteen enrollment and weighting categories. Second, there exist over thirty different funds – each with their own governing rules and regulations for how to spend those dollars. While the intention in developing any one of these programs was positive, seeking to best serve the purpose or students it aimed to impact, the cumulative effect for the school systems that have to manage these various funding streams is difficult.

Further, the ability to engage in effective and productive decision-making is limited by the boundaries that outline these various programs. This may prevent more thoughtful consideration of how resources can be used in combination and coordination with one another to target and positively impact the most vulnerable and underserved student populations. As was discussed in Chapter 2, effective decision-making is a skill that can be developed, and which strongly benefits from utilizing proven strategies. While

several of these strategies were discussed in earlier findings, the non-linear nature of the Kansas school finance formula can create a barrier for education professionals and the general public to understand the motivation and intent of the state and where it places its priorities for the public education system.

Technical Appendix A: Cost Model Methodology

This analysis follows Taylor et al. (2017) and uses stochastic frontier analysis (SFA) to estimate an educational cost function for Kansas. A cost function — a cost frontier — specifies the minimum cost necessary to achieve certain outcomes with specified inputs and specified environmental factors. A standard empirical cost function can be written as:

$$C = C(Z \mid \beta) \cdot e\exp(\varepsilon) \quad (1)$$

where C is cost, $C(Z \mid \beta)$ is the cost function or cost frontier, $Z = \{w_1, \dots, w_k;\ z_1, \dots, z_m; y\}$ is a vector of variables affecting the frontier level of cost, where, w_l are input prices, z_j are quasi-fixed inputs including environmental factors, y is a vector of outcomes, β is the cost parameter vector to be estimated, and ε is a random noise component representing exogenous random shocks (e.g., a rainy testing day). The error term, ε, indicates random deviations from the cost frontier due to measurement error and unforeseen random changes in cost due to factors not modeled in the cost function, $C(Z \mid \beta)$.

In the stochastic frontier approach, the cost function in (1) is regarded as a frontier, a minimum cost of attaining given outputs with given inputs including environmental factors. Spending may then deviate from this cost frontier, exceeding the minimum cost specified in the cost frontier. Thus the stochastic frontier approach starts with (1) and adds the assumption that spending exceeds the cost frontier due to random errors or inefficiency. The stochastic frontier approach basically takes equation (1) and assumes that the random error, ε, consists of two parts, a standard two-sided random error that can be positive or negative and on average is zero, and a one-sided error that is always positive (or at least not negative). The one-sided error captures the idea that schools or districts can at best be on the cost frontier, if they are fully efficient, and if they are inefficient this is captured or modelled by the one-sided error. The larger the one-sided error, the further a school/district is from the frontier, and hence the more inefficient it is.

To model this, equation (1) is altered to specify the error term, ε, as consisting of two components, *v* plus *u*. The two-sided error is *v*, and the one-sided error is *u*. Because inefficiency increases cost above the frontier (i.e., above the minimum possible cost), $u_i \geq 0$, where i is the specific decision-making unit.

The stochastic frontier cost function is given as:

$$E = C(Z \mid \beta) \cdot \exp(v + u), \quad (2)$$

where E is actual or observed spending and $C(Z \mid \beta)$ is the cost frontier as described above. Here v is a random noise component representing an exogenous random shock (e.g., a rainy testing day) and u is a one-sided error term that captures cost inefficiency. Cost efficiency defined as $CE_i = \exp(-u_i) \leq 1$.

The per-pupil stochastic frontier model is more commonly estimated in education than a total cost function (e.g., Andrews, Duncombe and Yinger, 2002 or Gronberg, Jansen, Karakaplan and Taylor 2015). It can be expressed as:

$$E^* \equiv \frac{E}{N} = \frac{C(\, w_1, \ldots, w_k;\; z_1, \ldots, z_m;\; S, N \mid \beta) \cdot \exp(v + u)}{N} \tag{3}$$

Taking natural logarithms of equation (3) gives

$$\ln E^* = \ln C(\cdot) - \ln N + v + u \tag{4}$$

The cost frontier estimates indicate the cost of achieving certain educational outcomes after controlling for cost and other environmental factors. The educational outcomes include a quantity dimension—the number of students served—and a quality dimension. The quality dimensions considered here are conditional normal curve equivalent scores (a measure of growth) and graduation rates.

An important feature of the decision-making environment facing school officials is the competitiveness of the district's relevant education market. Indeed, the literature finds that competition is one factor that can influence a school district's cost inefficiency.[12] The argument is that competition serves to discipline the tendency of districts to engage in excessive spending. This implies a negative relationship between the competitiveness of a district's education market and the magnitude of that district's cost inefficiency.

The literature also suggests that voter monitoring can lead to increased school district efficiency (Grosskopf et al. 2001). Factors that influence the motivation or ability of citizens to monitor their local school district—such as the educational attainment of the population, the share of homeowners or the fraction of the population that is elderly—have also been linked to school district efficiency (Duncombe and Yinger 2005).

The stochastic cost frontier framework can accommodate models of how factors impact the one-sided error term (u). In particular, suppose that

$$u = u(x, \delta), with\, u \geq 0 \tag{5}$$

where x includes factors impacting inefficiency, such as a measure of competition, and δ is a parameter vector. Substituting (5) into the per pupil expenditure equation (4) yields

$$\ln E^* = \ln C(\cdot) - \ln N + v + u(x, \delta) \tag{6}$$

Endogeneity Concerns

Because school quality is frequently thought of as a choice variable for school district administrators, the possible endogeneity, or correlation between explanatory variables and errors terms, of school quality

[12] For example, see Belfield & Levin (2002); Dee (1998); Gronberg et al. (2015); Gronberg, Jansen, Taylor & Karakaplan (2010); Grosskopf, Hayes, Taylor & Weber (2001); Kang & Greene (2002); or Millimet & Collier (2008).

indicators is a common concern for researchers estimating educational cost functions. (For example, see the discussion in Duncombe & Yinger (2005, 2011); Imazeki & Reschovsky (2004); or Gronberg et al. (2011a).) This analysis follows Gronberg et al. (2015) and Gronberg, Jansen and Taylor (2017) by adopting a control function approach to the potential endogeneity of the outcome measures.

Data

The data for this analysis come from administrative files and public records of the Kansas State Department of Education (KSDE), the National Center for Education Statistics (NCES), the U.S. Bureau of Labor Statistics (BLS), the U.S. Department of Housing and Urban Development (HUD) and the U.S Census Bureau. The analysis covers the two-year period from 2015–16 through 2016–17.

The unit of analysis is the traditional public school building. Alternative schools, charter schools, virtual schools and special schools have been excluded because they may have different cost structures than other buildings. Buildings that lack reliable data on student performance (such as elementary schools that serve no students in tested grades, or very small schools) have also been excluded.

Table 19 provides means and standard deviations for the variables use in this analysis. Enrollment, the teacher salary index, and population density enter the stochastic frontier regression in logs, while variables already in percentages and the indicator variables are not logged before entering the stochastic frontier regression.

Table 18. Descriptive statistics for buildings in Kansas, 2015-16 and 2016-17

	Mean	Std. Dev.	Minimum	Maximum
Per-pupil operating expenditure	$9,696	$1,961	$5,137	$20,844
Average Conditional NCE	0.50	0.05	0.30	0.76
Graduation rate	0.89	0.07	0.60	1.00
Teacher salary index	1.41	0.11	1.00	1.59
Rural county indicator	0.27	0.45	0.00	1.00
District enrollment	7.70	1.58	4.26	9.90
% Economically disadvantaged	0.41	0.21	0.00	0.96
% English Language Learners	0.10	0.16	0.00	0.82
% Special education	0.15	0.06	0.00	0.63
Elementary grade indicator	0.75	0.44	0.00	1.00
High school grade indicator	0.26	0.44	0.00	1.00
Herfindahl Index	0.38	0.25	0.13	1.00
Share of spending unallocated	0.34	0.09	0.00	0.91
Potential employers in building zip code	327	388	0.00	1,646
County unemployment rate	4.26	0.97	2.00	7.50

Note: Virtual schools, alternative schools, charter schools, and special schools have been excluded, as have all buildings with fewer than 10 students for whom conditional normal curve equivalent (NCE) scores could not be calculated.

The Dependent Variable

For each district, the researchers identified total operating expenditures for food, student transportation and all other operating functions. As described in Appendix C, operating expenditures include the day-to-day expenses of school districts, such as salaries, benefits, purchased services and supplies and materials. Debt service, construction expenditures and fund transfers are not considered operating expenditures. In turn, the category of all other operating functions includes the normal functions of school districts: instruction, student support services, administration, and the operation and maintenance of the district's facilities.

A complicating factor is that Kansas school districts regularly rely on special education co-operatives or inter-local agreements to provide special education services. With a special education co-operative, one district collects contributions from the other members of the co-operative, and hires teachers or purchases supplies on their collective behalf. To account for those expenditures, the researchers used the Kansas Education Directory to identify the members of each co-operative, and shared out the spending of each cooperative (i.e. the spending from fund 78) to the member districts according to each district's share of the special education students served by the co-operative. Payments to the inter-local (from funds 564 and 565) were the best available measure of spending by the members of an interlocal. However, we note that interlocals can also receive revenues from other sources (such as the federal government) that cannot be accounted for with the available data.

The following algorithm was used to calculate building-level expenditures for any given academic year:[13]

- Calculate total district expenditures using the certified personnel files, identify the buildings to which each educator was assigned, and attribute that educator's salary to that building. If educators were assigned to multiple buildings, share their salaries out across their assignments according to the shares of total FTE. Thus, if an educator worked 80% of an FTE in building A and 20% of an FTE in building B, then 80% of their salary would be assigned to building A and 20% of their salary would be assigned to building B.
- Cumulate the salaries for each building.
- Calculate total payroll (salaries and benefits) for each building by adjusting the building-level salaries by the district-specific benefits ratio. In other words, if the benefits paid by district A were 25% of salary, then adjust upward by 25% the building-level salaries in for all buildings in district A.
- Assign the remaining payroll expenditures for the district to the building on a per-pupil basis.
- Assign all non-payroll expenditures –excepting special education funds—for the district to the building on a per-pupil basis.
- Assigning all non-payroll special education expenditures for the districts to the building on a per-special education-student basis.

[13] Gronberg, Jansen & Taylor (2012) and Grosskopf, Hayes, Taylor & Weber (2013) used a similar approach.

Outputs

As noted above, the analysis uses two measures of quality — levels and growth. The levels measure is the ultimate, summative evaluation of high school achievement — graduation rates. We were provided with school-level graduation rates which represent the percentage of each longitudinal cohort that graduated within four years. We also received the variables used to calculate these rates including total number of graduates and the total number of students in the four-year cohort. To calculate district-level graduation rates, we divided the sum of total graduates in a given year and district by the sum of students in the corresponding cohort. As described in Chapter 4, schools with suppressed counts of graduates (i.e. less than 10) were filled in with imputed values. Our approach to imputing values for these suppressed schools was conducted in three steps.

- First, for those districts with suppressed data for some schools and not others, a weighted average district graduation rate weighted on the number of students in the graduation cohort was imputed as that district's graduation rate.
- Second, for a separate subset of districts, some schools had partial graduation data. Specifically, the total number of students in the graduation cohort was available but the number of graduates was not. In these cases, a weighted average school graduation rate across available years was calculated (weighted on the cohort total) and this average was used to estimate the number of graduates in schools missing this information and fill in the school-level graduation rate. The district graduation rate was then re-calculated for districts with these schools using the imputed data.
- Finally, district graduation rates were imputed as school graduation rates for those schools still missing this information.

The growth measure is a normalized gain score indicator of student performance on the Kansas Assessment Program (KAP) summative evaluations in reading and mathematics in grades 3–8. Although schools clearly produce unmeasured outcomes that may be uncorrelated with mathematics and reading test scores, and standardized tests may not measure the acquisition of all important higher-order skills, these are performance measures for which districts are held accountable by the state, and the most common measures of school district output in the literature (e.g., Gronberg, Jansen & Taylor, 2011a, 2011b, 2017 or Imazeki & Reschovsky, 2006). Therefore, they are reasonable output measures for cost analysis.

KAP scores can be difficult to compare across years, grade levels and test subjects. Therefore, this analysis relies on normalized (or equivalently, standardized) test scores. The normalization follows Reback (2008) and yields gain score measures of student performance that are not biased by typical patterns of reversion to the mean.[14]

[14] All students in the state, not just those in CBSAs were included in the calculation of standardized scores.

The calculation of normalized gain scores proceeds in three steps. First, transform the scores of individual students into conditional z-scores. Denote the test scores for student (i), grade (g), and time or year (t), as S_{igt}, and measure each student's performance relative to others with same prior score in the subject as:

$$Y_{igt} = \frac{S_{igt} - E(S_{igt}|S_{i,g-1,t-1})}{[E(S_{igt}^2|S_{i,g-1,t-1}) - E((S_{igt}|S_{i,g-1,t-1})^2]^{.5}} \quad (10)$$

For example, consider all Grade 6 students who had a score of 300 on the prior year's Grade 5 KAP in Mathematics. For this subgroup of students with a Grade 5 score of 300, calculate the mean and standard deviations of the Grade 6 scores for KAP Mathematics. The mean is the expected score in Grade 6 ($E(S_{igt}|S_{i,g-1,t-1})$) for someone with a Grade 5 score of 300; the standard deviation is the denominator in equation (10). Thus, the variable Y_{ijgt} measures individual deviations from the expected score, adjusted for the variance in those expected scores. This is a type of z-score. Transforming individual KAP scores into z-scores in this way allows researchers to aggregate across different grade levels and test subjects despite the differences in the content or scaling of the various tests.

Second, calculate the average conditional z-score (i.e., the average Yigt) across all required mathematics and reading tests for all of the students attending each school.[15] An average conditional z-score of 1 indicates that, on average, the students at Little Elementary scored one standard deviation above the expected score for students with their prior test performance. An average conditional z-score of -1 indicates that, on average, the students scored one standard deviation below expectations.

Finally, for ease of interpretation, transform the z-scores into conditional normal curve equivalent (NCE) scores. NCE scores (defined as 50+21.06*z) are a monotonic transformation of z-scores that are commonly used in the education literature and can be interpreted as percentile ranks.[16] A Conditional NCE score of 50 indicates that (on average) the students performed exactly as expected given their prior test performance; and a Conditional NCE score of 90 indicates that (on average) they performed as well or better than 90% of their peers.

For estimation purposes, the Conditional NCE scores are expressed as percentages. As Table 1 documents, the building-level average Conditional NCE score had a mean of 0.50 with a minimum of 0.30 and a maximum of 0.76.

Input Prices

The most important education inputs are teachers, and the cost function model includes the required teacher wage variable. Public schools take differing approaches to hiring teachers. If there were a teacher

[15] Only students in the accountability subset (i.e., students who attended the same building in the fall of the academic year as they did in the spring) are included in the building average.

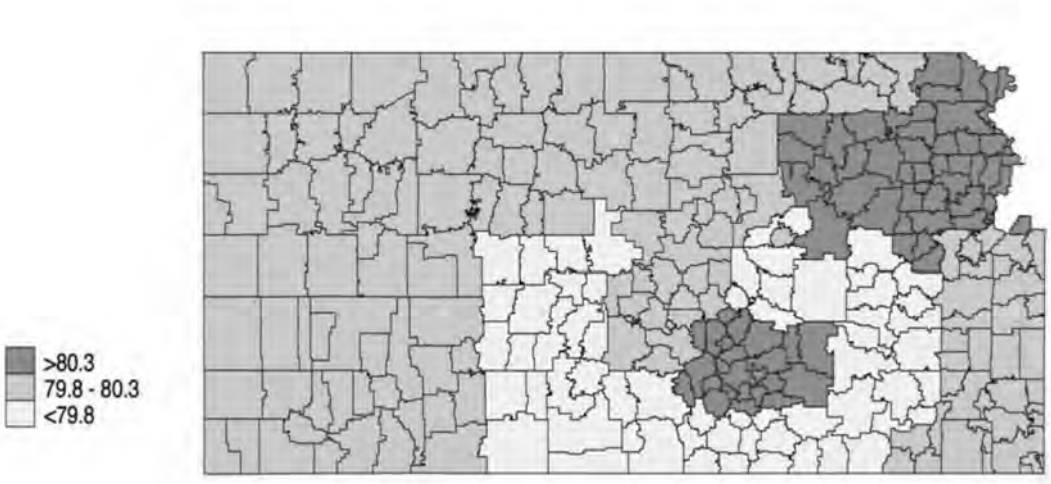
[16] Technically, this interpretation only holds if the scores are normally distributed. Given the large number of students tested each year in Kansas, normality is a reasonable assumption.

type hired by all unified school districts — for example, a teacher with a bachelor's degree from a selective university and two years of experience — then arguably the model should use the wages paid to those teachers as the labor price measures. However, it is not possible to identify a teacher type that is hired by all the school districts under analysis, and any observed average wage — such as the average salary for beginning teachers — reflects school and district choices about the mix of teachers to hire and the salaries offered to teachers in the hiring process.

This issue can be dealt with using a wage index that is independent of school and district choices. Such an index is constructed here by estimating a hedonic wage model for teacher salaries and using that model to predict the wages each school would have to pay to hire a teacher with constant characteristics (see Appendix B). The resulting teacher price index, which reflects the systematic variation in teacher salary that is related to cost factors outside of school district control, ranges from 1.00 to 1.59 and indicates that the cost of hiring teachers is more than 50% higher in some of parts of Kansas than it is in others.

The study team considered using a comparable wage index (CWI) to measure regional variation in labor cost. This approach uses comparable non-teacher salaries under the assumption that if these salaries are higher in a given region the salaries of teachers must also be higher. The main advantage of using this approach over a hedonic model is that it does not rely on the researcher to identify controllable and uncontrollable factors in the price to hire teachers. Simply put, districts cannot control the locally prevailing wage for college graduates. This approach is also used in the education finance context, and examples of it in practice may be found in Florida, Massachusetts, Missouri, New Jersey, New York, and Virginia (Taylor 2011a). Unfortunately, the best available data on non-educator wages and salaries — the American Community Survey — lacks the level of geographic detail needed. However, one of the most well-known comparable wage indices is the Comparable Wage Index (CWI) created by the National Center for Education Statistics (NCES).

Figure 12. Map of Kansas CWI from 2016

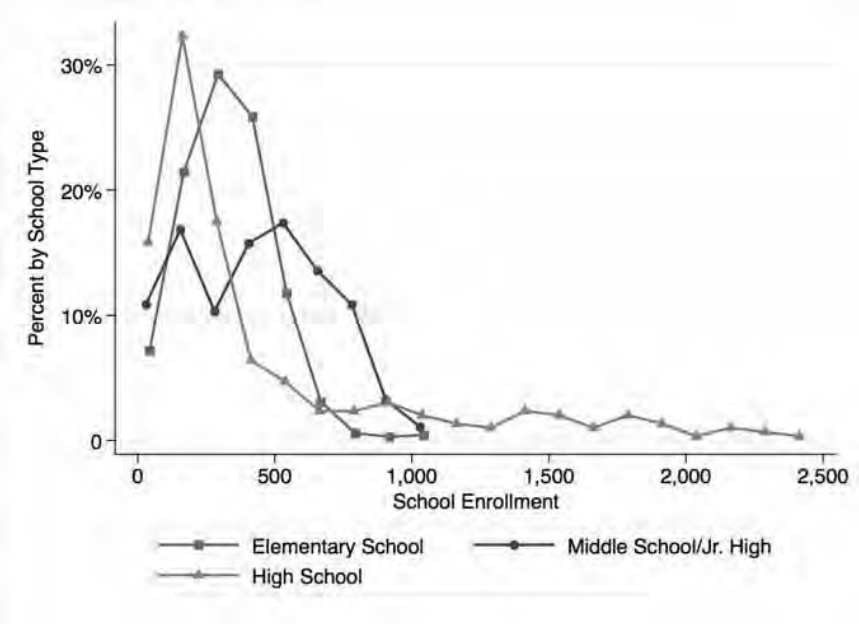


Other Environmental Factors

The model includes indicators for a variety of environmental factors that influence district cost but which are not purchased inputs. A major environmental factor in this study is district enrollment. In the estimation sample district enrollment averaged 8,697 students, with a minimum of 60 and a maximum of 50,988.

The figure below displays the distribution of school enrollment in 2016-17 by school type. As illustrated school enrollment in 2016-17 ranged from 30 students to 2,487, with an average of 308 and a standard deviation of 319.6. This reflects the fact that the distribution is asymmetrical, with the majority of schools clustered around the mean at the low end of the range. Only a few very large schools were one standard deviation above the mean or more. School size varied slightly by school type, with elementary schools smallest on average, followed by middle schools, and then high schools. For example, the largest four schools are all high schools and well above the average size including Andover eCademy at 3,005, Olathe North Sr. High School at 2,487, East High School in Wichita at 2,263, and Olathe Northwest High School at 2,258.

Figure 13. School enrollment for standard buildings in traditional school districts, 2016-17



Another key environmental factor is population density (which we measure as the population per square mile). School buildings are likely to be smaller (all else equal) in districts with larger geographic footprints, where the time costs of transporting students to scale-efficient buildings could be prohibitive. Therefore, the geographic size of the district is a credible instrument for building size.

To capture variations in costs that derive from variations in student needs, the cost function includes the percentages of students in each district who were identified as English Language Learners, special education, and economically disadvantaged.

The measure used to identify economically disadvantaged students was the percentage of students eligible for free or reduced-price lunch. This is based on eligibility for the National School Lunch Program administered by the U.S. Department of Agriculture which provides students from poor families free or reduced price school lunches. Eligibility for free lunches is determined by a student's family income and size, though students may be "categorically eligible" if enrolled in other federal assistance programs.[17] This alternative was considered primarily because there is a stronger reliance in the literature on free and reduced-price lunch eligibility. However, percent eligible for free lunch alone was ultimately determined to be a more relevant measure in Kansas (National Center for Education Statistics, 2018). This is because it is used to allocate funding for at-risk students in the general aid formula (Kansas State Department of Education, 2017).

In Kansas, English language learners are identified in Kansas through a three-step process. First, the student's Home Language Survey must indicate a language other than English. Any student for whom this is the case must then be assessed on a state-approved English-language proficiency assessment. If a student is found to be limited in any domain of English proficiency will receive English for Speakers of Other Languages (ESOL) services and is identified as an English Language Learner.[18]

Data on special education students include students who have been identified as "exceptional children" through a two-pronged eligibility determination. Specifically, in Kansas a student must meet the definition of one of the categories of exceptionality, and in need of special education and related services as a result of that exceptionality.[19]

As with the graduation data, the available demographic data were suppressed for counts of fewer than 10 students resulting in an incomplete data set. To address this issue we imputed the median value within the range of possible values for each of the suppressed observations (i.e. 5). Other approaches were considered, including the approach taken to impute graduation rates. However, since student demographics are less stable over time than graduation rates, the research team decided against using an approach that assumes an average over time is an effective estimate for any particular year. Ultimately, there are no perfect options, but the chosen method has the benefit of balancing the potential measurement error at +/-4 students, as well as being more simple to understand, and thus more transparent.

[17] More information on this program and eligibility requirements can be accessed here: https://fns-prod.azureedge.net/sites/default/files/cn/NSLPFactSheet.pdf.

[18] More information on the identification of English Language Learners can be found at http://www.ksde.org/Portals/0/Title/ESOL/ESOLProgramGuidance.pdf.

[19] More information on this eligibility determination can be found at http://www.ksde.org/Portals/0/SES/misc/iep/EligibilityIndicators.pdf.

Finally, to allow for the possibility that the education technology differs according to the grade level of the school, the cost model includes indicators for whether or not the school serves elementary grades (i.e., grades PK-6), and whether or not the school serves high school grades (i.e. grades 9-12). Fixed effects for year control for inflation and other time trends in Kansas education.

Efficiency Factors

The error terms for all frontier specifications depend on a number of factors that theory suggests may explain differences in school efficiency. Prior research has demonstrated that competition can reduce inefficiency in public education (e.g., Belfield & Levin, 2002; Millimet & Collier, 2008; Gronberg et al. 2015), and so can ease of voter monitoring (Grosskopf et al. 2001). Therefore, the one-sided variance function is modeled as a linear combination of five variables—the degree of educational competition in the metropolitan area or county; an indicator for whether or not the district is located in a metropolitan area that spans state lines (because the level of competition is imperfectly measured in those education markets using only Kansas data); the percentage of household that are owner-occupants, the percentage of the population with at least a bachelor's degree and the percentage of households wherein no residents are over 60 years of age. We note that the latter three variable were also treated as efficiency factors in Duncombe and Yinger (2005).[20]

As is common in the literature, the degree of educational competition is measured with a Herfindahl index of enrollment concentration. A Herfindahl index (which is defined as the sum of the squared enrollment shares) increases as the level of enrollment concentration increases. A Herfindahl index of 1.00 indicates a metropolitan or micropolitan area with a single local education agency (LEA); a Herfindahl index of 0.10 indicates a metropolitan or micropolitan area with 10 LEAs of equal size. Table A1 reports the mean value for the Herfindahl index in the sample is .38, with a minimum value of .13 and a maximum of 1, indicating that some counties in Kansas are served by a single unified school district.

Heteroskedasticity in the two-sided error may also arise. To capture such a possibility, the two-sided variance is modeled as a function of the share of building expenditures that was not specifically allocated to the building by the expenditures file. This variable has been included because measurement error in the dependent variable (a common source of heteroskedasticity) is likely to be a function of the extent to which the dependent variable was imputed.

Instrumental Variables

The key to implementing the control function corrections is the identification of viable instruments for school quality. Human capital theory suggests that local labor market conditions can influence the

[20] By assumption, the one-sided error term has a half-normal distribution. Jenson (2005) finds that specifying a half-normal distribution for the inefficiency term generates more reliable estimates of technical efficiency than other assumptions about the distribution of inefficiency.

demand for educational quality and the opportunity cost of staying in school so, as in Gronberg, Jansen and Taylor (2015) and Taylor, Gronberg and Jansen (2017), this analysis uses labor market conditions in the vicinity of the building as instruments for the Conditional NCE scores and graduation rates. The indicators of labor market conditions—the number of employers in the building zip code, the unemployment rate in the county-- and the number of those employers that are restaurants—reflect industrialization and the availability of the types of jobs most commonly held by teenagers and comes from the ZIP Business Patterns produced by the Census Bureau. The set of instrumental variables also includes a measure of the likely demand for educational services in the community—the ratio of students to working age adults.

Results

Table 17 describes the first-stage independent variable coefficient estimates along with their standard errors. Results for both of the student outcome measures – growth scores and graduation rates – suggest robust results. More specifically, changes in NCE showed to be associated with changes in district enrollment, the percentage of the population that is low-income, and for elementary grades served. For graduation rates we can observe that changes in the rate are associated with changes in district enrollment as well but also the salary index, rural indicator, student demographic characteristics and various other explanatory variables. Crucially, the instrumental variables are well correlated with the outcome measures. The first stage F-statistics are 12.25 and 38.55 for the Conditional NCE and graduation rate, respectively.

Table 19. First-Stage IV Coefficient Estimates

LABELS	NCE	Graduation Rate
District Enrollment	0.0380**	0.0649***
	(-0.016)	(-0.023)
District Enrollment squared	-0.0023**	-0.0054***
	(-0.001)	(-0.002)
Salary index (log)	-0.0275	0.137
	(-0.087)	(-0.101)
Rural indicator	-0.0053	0.0109***
	(-0.003)	(-0.004)
% Economically Disadvantaged	-0.0888***	-0.1874***
	(-0.019)	(-0.026)
% English Learners	-0.0006	-0.1101***
	(-0.023)	(-0.026)
% Special Ed.	-0.1039	-0.2162**
	(-0.072)	(-0.093)
Population density	-0.005	-0.0105
	(-0.005)	(-0.007)
Elementary grades served	0.0155***	-0.0051

	(-0.004)	(-0.007)
High school grades served	-0.004 (-0.004)	-0.0133* (-0.007)
% Economically Disadvantaged, squared	0.0111 (-0.021)	0.0386 (-0.026)
% English Learners, squared	-0.002 (-0.034)	0.2132*** (-0.036)
% Special Ed., squared	0.3860** (-0.191)	0.6742*** (-0.253)
Population density* Salary Index	0.0158 (-0.013)	0.0457*** (-0.015)
AYP Schoolyear = 2017	-0.0005 (-0.002)	-0.0035 (-0.002)
Enrollment per estimated adult	-0.0784*** (-0.016)	0.1111*** (-0.02)
Zip Total Establishments	-0.0031** (-0.001)	-0.0093*** (-0.002)
County annual avg. unemployment rate	0.4207*** (-0.059)	0.8054*** (-0.082)
Constant	-0.0784*** (-0.016)	0.1111*** (-0.02)
Observations	2,310	2,310
Adjusted R-squared	0.18	0.466

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 14 presents two versions of the cost function coefficients. The first model is the preferred specification; the second is presented to demonstrate that certain modeling decisions are not driving the results. As the second column illustrates, top-coding district enrollment and excluding the quadratic term for percent economically disadvantaged are both clearly appropriate.

Table 20. Cost Model Coefficient Estimates

LABELS	Baseline	Alternative Model
Normal Curve Equivalent	5.295*** (-0.607)	5.287*** (-0.629)
Graduation Rate	1.244*** (-0.262)	1.271*** (-0.26)
Graduation Rate * High School	0.696*** (-0.0995)	0.682*** (-0.0999)

LABELS	Baseline	Alternative Model
District Enrollment	-1.444*** (-0.0568)	-1.454*** (-0.0588)
District Enrollment squared	0.0991*** (-0.00378)	0.0998*** (-0.00396)
Salary index (log)	1.373*** (-0.279)	1.369*** (-0.276)
Rural indicator	0.0505*** (-0.0112)	0.0507*** (-0.0112)
% Economically Disadvantaged	0.886*** (-0.078)	0.901*** (-0.105)
% English Language Learner	0.226*** (-0.0667)	0.225*** (-0.0656)
% Special Education	2.157*** (-0.226)	2.146*** (-0.229)
Population Density	0.166*** (-0.018)	0.167*** (-0.0181)
Elementary grades served	-0.129*** (-0.016)	-0.129*** (-0.0161)
High school grades served	-0.508*** (-0.0909)	-0.496*** (-0.0914)
% Economically Disadvantaged, sq		-0.0131 (-0.0627)
% English Language Learner, sq	-0.623*** (-0.109)	-0.619*** (-0.108)
% Special Education, sq	-6.135*** (-0.674)	-6.136*** (-0.684)
Population density* Salary Index	-0.510*** (-0.0414)	-0.515*** (-0.0416)
District Enrollment* Big District Indicator		-0.000512 (-0.0016)
AYP Schoolyear = 2016	-0.0364*** (-0.00591)	-0.0366*** (-0.00591)
First stage Residuals, NCE	-5.102*** (-0.609)	-5.099*** (-0.63)
First stage residuals, Graduation	-1.454*** (-0.271)	-1.477*** (-0.268)
Herfindahl Index, log	0.797*** (-0.249)	0.748*** (-0.249)
Border metro	2.320*** (-0.372)	2.281*** (-0.368)
% Owner occupied	7.293*** (-1.321)	7.556*** (-1.323)

LABELS	Baseline	Alternative Model
% Over 60	-2.316 (-1.496)	-1.963 (-1.473)
% College	-12.06*** (-1.542)	-11.65*** (-1.531)
Constant	9.644*** (-0.357)	9.654*** (-0.398)
Usigma	-7.214*** (-0.958)	-7.667*** (-0.991)
Vsigma	-4.095*** (-0.0418)	-4.105*** (-0.0437)
Observations	2,310	2,310

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Adequacy calculations

One calculates the costs associated with various performance standards by using the coefficient estimates in the above table to predict the excpenditures associated with the designated performance metrics and the observed characteritics of districts. Such calculations are very straightforward with respect to the Conditional NCE and the graduation rate. To calculate the expected cost of increasing the graduation rate to 95%, one replaces the observed graduation rate with 95% and generates the model predictions.

It is a bit trickier to go from Conditional NCE scores—a measure of growth – to performance levels consistent with the Rose Standards. As discussed above, one could interpret the Rose Standards as requiring 90% of the students to score at level 2 or above on the KAP, or one could interpret the Rose Standards as requiring 60% of the students to score at level 3 or above. In neither case can one simply forecast the cost associated with a common Conditional NCE score. After all, if everyone grows at the same rate, existing performance gaps will never close.

If a student is lagging her peers in reading, she needs to grow faster than they do to close the gaps. Therefore, the research team calculated the number of standard deviations of growth required for each student to achieve the cut scores for level 2 and level 3 on the KAP. Then, assuming that all of the students in a district would experience the same number of standard deviations of growth, they calculated the district growth rate that would lead 90% of the students to meet the cut scores for level 2 and the district growth rate that would lead 60% of the students to meet the cut scores for level 3. The cost projections for closing the gaps are based on these estimates. In other words, the researchers estimated the cost associated with each district posting the amount of growth necessary to have a reasonable expectation that the designated percentage of students will make enough progress to meet the appropriate cut scores.

Technical Appendix B: Estimating the Teacher Salary Index

For more than 30 years, economists have used hedonic wage models and regression analysis to explain why labor costs differ from one school district to another. Those analyses suggest that differences in average teacher salaries can be explained by differences in teacher characteristics (such as their educational attainment and years of experience), job characteristics (such as the characteristics of the students being served), and locational characteristics (such as the local cost of living).[21]

The hedonic wage model used in this analysis, which updates the hedonic wage model used in Taylor et al (2014), describes wages as a function of labor market characteristics, job characteristics, observable teacher characteristics, and unobservable teacher characteristics. Formally, the model can be expressed as:

$$ln\,(W_{idjt}) = D_{dt}\beta + T_{it}\delta + M_{jt} + \varepsilon_{idjt} \quad (1)$$

where the subscripts i,d,j and t stand for individuals, districts, labor markets and time, respectively, W_{idjt} is the teacher's full-time-equivalent monthly salary, D_{dt} is a vector of job characteristics that could give rise to compensating differentials, T_{it} is a vector of individual teacher characteristics that vary over time, and M_{jt} is a vector of labor market characteristics. The ε_{idjt} are random effects for individuals, which are presumed to follow the autoregressive pattern found in the data.[22] (An autoregressive pattern to teacher salaries means that if a teacher earns more than the model predicts in one year, he or she will probably earn more than the model predicts the next year too.)

The data on teacher salaries and individual teacher characteristics come from the Kansas Department of Education. The hedonic wage analysis covers the nine-year period from 2008-09 through 2016–17). As in the cost function analysis, data from open-enrollment charter campuses, virtual campuses and all alternative education campuses have been excluded. All teachers with complete data who worked at least half time for a traditional public district have been included in the analysis.

The measure of teacher salaries that is used in this analysis is the total, full-time equivalent (FTE) annual salary. It is calculated as the observed total salary divided by the percent FTE. Full-time equivalent salaries less than 50% of the state's statutory minimum were deemed implausible and treated as missing. In addition, the

[21] For more on the use of hedonic wage models in education, see Chambers (1998); Chambers & Fowler (1995); Goldhaber (1999); Stoddard (2005); or Taylor (2008a, 2008b, 2010, 2011).

[22] See Drukker (2003) and Wooldridge (2002).

Table 20 presents the coefficient estimates and standard errors for the hedonic wage model. As the table illustrates, the hedonic model includes controls for teacher experience (the log of years of experience, the square of log experience and an indicator for first-year teachers) and indicators for the teacher's educational attainment (no degree, bachelor's degree, specialist degree, master's degree, or doctorate).

Job characteristics in the analysis include indicators for teaching assignment (general elementary, language arts, mathematics, science, social studies, health and physical education, foreign languages, fine arts, computers, vocational/technical subjects, special education, standardized-tested subjects, early childhood, English for speakers of other languages, and other instructional duties). Any given teacher could have multiple teaching assignments (such as an individual teaching both mathematics and science) or serve multiple student populations (such as kindergarten and pre-kindergarten).

Other job characteristics in the analysis include an indicator for whether or not the individual was assigned to multiple buildings and indicators for whether or not the teacher had additional duties as a department head, administrator, team sports, support staff, tutor, study skills, gifted, and other non-teaching duties.

Finally, the hedonic wage model also includes eight variables that describe various aspects of local labor market conditions. The ACS Comparable Wage reflects the prevailing wage for college graduates, the U.S. Department of Housing and Urban Development's estimate of Fair Market Rents for a two-bedroom apartment (in logs) reflects deviations in the cost of living, while the U.S. Bureau of Labor Statistic's measure of the metropolitan area unemployment rate reflects job prospects outside of teaching, U.S. Census indicator for whether or not the school district is located in a major metropolitan area (with 50,000 or more population) and another indicator for a metropolitan area with more than 10,000 but less than 50,000 population), miles to the nearest metro or micro area, and miles to a micro area reflect urbanicity. Distance to the nearest school in another state reflects access to employment opportunities outside of Kansas.

The Teacher Salary Index (TSI) for each building is based on the predicted wage for a teacher with 10 years of experience and a Master's degree, holding all other teacher characteristics and job characteristics constant at the statewide mean, but leaving the building and labor market characteristics unchanged.

Table 21. Hedonic wage model coefficient estimates

	Coefficients	Standard Errors
Years of experience (log)	-0.0222***	(0.00259)
Years of experience (log), sq.	0.0296***	(0.000659)
Teacher Educational Attainment		
No degree	-0.0972	(0.0756)
Bachelor's degree	-0.0531**	(0.0265)
Specialist/Management Specialists	0.121***	(0.00772)

	Coefficients	Standard Errors
Master's degree	0.0874***	(0.00165)
Doctoral degree	0.000	
Teacher Assignment		
Assigned multiple buildings	-0.0179***	(0.00200)
First year teacher	-0.0608***	(0.00210)
Special education	-0.0202***	(0.00292)
Language arts teacher	-0.0202***	(0.00161)
Mathematics teacher	-0.0129***	(0.00182)
Computer science	-0.00207	(0.00290)
Science	-0.0120***	(0.00188)
Social science	-0.0112***	(0.00187)
Fine arts	0.00372**	(0.00271)
Foreign language	0.00284	(0.00512)
Health and physical education	-0.0161***	(0.00283)
General elementary teacher	0.0103***	(0.00163)
Early childhood	-0.0646***	(0.00560)
English for speakers of other languages	-0.00321	(0.00727)
Vocational/technical	0.00486**	(0.00245)
Other instructional duties	-0.0699***	(0.00507)
Administrator	0.300***	(0.00352)
Support staff	0.00389***	(0.00134)
Department head	0.0249***	(0.00494)
At risk	-0.0115***	(0.00355)
Study skills	-0.000232	(0.00216)
Gifted	0.00313	(0.00750)
Tutoring	-0.00198	(0.00349)
Team sports	0.00994	(0.0101)
Other non-teaching duties	0.000219	(0.00129)
School Location Characteristics		
Miles to the nearest metro or micro area	0.000957***	(2.86e-05)
Miles to the nearest metro area	-0.00478***	(8.84e-05)
Fair market rent (log)	-0.109***	(0.00848)
Unemployment rate	-0.00164***	(0.000505)

	Coefficients	Standard Errors
Metro indicator	0.0735***	(0.00360)
Micro indicator	-0.0399***	(0.00331)
ACS-CWI	0.712***	(0.0257)
Distance to a neighboring school in another state	-0.000437***	(3.77e-05)
School year		
School year 2008-09	-0.140***	(0.00241)
School year 2009-10	-0.121***	(0.00253)
School year 2010-11	-0.105***	(0.00241)
School year 2011-12	-0.0730***	(0.00219)
School year 2012-13	-0.0760***	(0.00218)
School year 2013-14	-0.0550***	(0.00175)
School year 2014-15	-0.0356***	(0.00140)
School year 2015-16	-0.0290***	(0.00120)
School year 2016-17	0.0000	
Observations	326,154	
Number of teachers	59,133	

Note: Asterisks indicate a coefficient that is statistically significant at the 1%*** 5%** or 10%* levels.

Estimating the Comparable Wage Index

The ACS-CWI for this analysis is based on an analysis of public use micro-data from the 2014, 2015 and 2016 American Community Surveys (ACS)[23]. The ACS, which is conducted annually by the U.S. Census Bureau, has replaced the decennial census as the primary source of demographic information about the U.S. population. It provides information about the earnings, age, occupation, industry, and other demographic characteristics for millions of U.S. workers. The ACS-CWI measures earnings differences for college graduates and has been modeled after the baseline analysis used to construct the National Center for Education Statistics' (NCES) CWI (Taylor and Fowler, 2006).

Like the NCES CWI, the ACS-CWI comes from regression analyses of individual earnings data. Workers with incomplete data and workers without at least a bachelor's degree were excluded from the estimation sample, as was anyone who had a teaching or educational administration occupation or who was employed in the elementary and secondary education industry. Self-employed workers were excluded because their reported earnings may not represent the market value of their time. Individuals who

[23] The analysis is based on annual files for each survey administration, and not on the combined three-year file.

reported working less than half time or for more than 90 hours a week were also excluded, as were workers under the age of 18 and over the age of 80. Finally, individuals employed outside the United States were excluded because their earnings may represent compensation for foreign travel or other working conditions not faced by domestic workers.

The ACS-CWI was estimated from nationwide data because the national sample is much larger and yields much more precise estimates of wages by industry and occupation than could be generated using only the ACS data for the state of Kansas. For similar reasons, the analyses combines data from the three most recent administrations of the ACS.

Table 23 presents the results from the regression analysis. The dependent variable is the log of annual wage and salary earnings. Key independent variables include the age, sex, race, educational attainment, language ability, and amount of time worked for each individual in the national sample. The model includes the interaction between sex and age, to allow for the possibility that men and women have different career paths, and therefore different age-earnings profiles. In addition, the estimation includes indicator variables for occupation and industry for each year. This specification allows wages to rise (or fall) more slowly in some occupations or industries than it does in others. Such flexibility is particularly important because the analysis period includes the period immediately after the "Great Recession" and some industries and occupations recovered more slowly than others. Finally, each regression includes indicator variables for each labor market area.

The labor markets are based on "place-of-work areas" as defined by the Census Bureau. Census place-of-work areas are geographic regions designed to contain at least 100,000 persons. The place-of-work areas do not cross state boundaries and generally follow the boundaries of county groups, single counties, or census-defined places (Ruggles et al. 2012). Counties in sparsely-populated parts of a state are clustered together into a single Census place-of-work area. All local communities in the United States are part of a place-of-work area. Individuals can live in one labor market, and work in another. Their wage and salary earnings are attributed to their place of work, not their place of residence. The labor markets used in these analyses are either single places of work, or a cluster of the places-of-work that comprise a metropolitan area.[24]

As Table 24 illustrates, the estimated model is consistent with reasonable expectations about labor markets. Wage and salary earnings increase with the amount of time worked per week and the number of weeks worked per year. Earnings also rise as workers get older, but the increase is more rapid for men than for women (perhaps because age is not as good an indicator of work experience for women as it is for men). Workers with advanced degrees earn systematically more than workers with a bachelor's degree. Whites earn systematically more than apparently comparable individuals from other racial groups. Workers who do not speak English well earn substantially less than other workers, all other things being equal.

[24] Place of work areas were matched to counties and aggregated into core based statistical areas using data from the Missouri Census Data Center's MABLE/Geocorr12: Geographic Correspondence Engine.

The predicted wage level in each labor market area captures systematic variations in labor earnings while controlling for demographics, industrial and occupational mix, and amount of time worked [25]. Dividing each local wage prediction by the corresponding national average yields the ACS-CWI.

Table 22. Estimating the ACS-CWI

Explanatory Variables	ACS-CWI Model	
	Estimate	Std. Error
USUAL HRS. WORKED PER WEEK	0.944	0.003
WORKED 27-39 WEEKS	-0.553	0.004
WORKED 40-47 WEEKS	-0.251	0.003
WORKED 48-49 WEEKS	-0.103	0.004
FEMALE	0.308	0.013
AGE	0.086	0.000
AGE, SQUARED	-0.001	0.000
FEMALE*AGE	-0.016	0.001
FEMALE*AGE, SQUARED	0.000	0.000
NOT AN ENGLISH SPEAKER	-0.482	0.021
BACHELOR'S DEGREE	-0.217	0.003
MASTER'S DEGREE	-0.099	0.003
PROFESSIONAL DEGREE	0.000	
DOCTORAL DEGREE	0.059	0.004
HISPANIC	-0.100	0.002
AMERICAN INDIAN OR ALASKA NATIVE	-0.060	0.010
BLACK	-0.127	0.002
CHINESE	-0.081	0.003
JAPANESE	-0.084	0.008

[25] Formally, the predicted wage level in each market is the least-squares mean for the market fixed effect. The least-squares mean (or population marginal mean) is defined as the expected value of the mean for each effect (in this context, each market) that you would expect from a balanced design holding all covariates at their mean values and all classification variables (such as occupation or sex) at their population frequencies.

Explanatory Variables	ACS-CWI Model	
	Estimate	Std. Error
OTHER ASIAN/PACIFIC ISLANDER	-0.078	0.002
OTHER RACE, N.E.C.	-0.065	0.005
MIXED RACE	-0.061	0.004
WHITE	0.000	
INDUSTRY*YEAR INDICATORS?	Yes	
OCCUPATION*YEAR INDICATORS?	Yes	
LABOR MARKET INDICATORS?	Yes	
NUMBER OF OBSERVATIONS	**853,143**	

Source: Ruggles et al. (2015) and author's calculations.

Technical Appendix C: Expenditure Definition

In Chapter 4 of this report a summary of the expenditure definition was discussed including the allocation of costs from the school district to the school. This technical appendix provides additional detail on the items that were included and excluded from the fiscal analysis for this cost study for fiscal years 2017, 2016, and 2015. This technical appendix draws on the most recent Accounting Manual published by the Kansas State Department of Education (KSDE).[civ] The accounting manual is the handbook used by each Kansas school district that guides the classification and assignment of its funds, either revenue, expenditures, transfers or other activity. The tables below identify those expenditures that were included and excluded from the cost function analysis according to the classification of either fund (table 25, function (table 26) or object (table 27). Note that the corresponding fund, function or object number is included in parentheses next to the category title.

Table 23. Included and Excluded Funds from Cost Function Analysis[cv]

Funds	Categories That Have Been Included or Excluded from the Cost Function Analysis
Included	***General Fund (06), Supplemental General Fund (08)*** ***Special Revenue Funds*** • Special Liability Expense (42) • Bilingual Education (14) • Virtual Education (15) • Driver Training (18) • Professional Development (26) • Parent Education Program (28) • Summer School (29) • Special Education (30) • Vocational Education (34) • Area Vocational School (36) • Textbook & Materials Revolving (55) • Risk Management (50) • Capital Outlay (16) • Worker's Compensation (52) • Educational Excellence Program (20) • Extraordinary School Program (22) • Extraordinary Growth Facility (45) • Coop Special Education (78) • Federal Funds (07) • At Risk (4-year-old) (11) • At Risk (K-12) (13) • Declining Enrollment (19) • Tuition Reimbursement (57) • KPERS Special Retire Contribute (51) • Cost of Living (33) ***Trust Agency Funds*** • School Retirement (44) • Special Reserve Fund (47) • Recreation Commission (84) • Recreation Comm Employee Benefit (86) • Library Board (82) • Contingency Reserve Fund (53) • Gifts and Grants (35) ***Internal Service Funds***

Funds	Categories That Have Been Included or Excluded from the Cost Function Analysis
	• Activity (56)
Excluded	***Special Revenue Funds*** • Adult Education (10) • Adult Education Supplemental (12) • Food Service (24) ***Capital Project Funds*** ***Debt Service Funds*** • Bond & Interest (62, 63) • Special Assessment (67) • No-Fund Warrants, Temp Notes (66)

Table 24. Included and Excluded Functions from Cost Function Analysis[cvi]

Function	Categories That Have Been Included or Excluded from the Cost Function Analysis
Included	***Instruction (1000)*** ***Support Services*** • Students (2100) • Instruction (2200) • General Administration (2300) • School Administration (2400) • Central Services (2500) • Other Central Services (2600) • Other Support Services (2900) ***Operation of Non-Instructional Services*** • Enterprise Operations (3200)
Excluded	***Support Services*** • Student Transportation (2700) ***Operation of Non-Instructional Services*** • Food Service (3100) • Community Service (3300) ***Facilities Acquisition and Construction*** • Land Acquisition (4100) • Land Improvement (4200) • Architecture and Engineering (4300) • Educational Specs Development (4400) • New Building Acquisition (4500) • Site Improvement (4600) • Building Improvements (4700) • Other Facilities Acquisition Cons. (4900)

Function	Categories That Have Been Included or Excluded from the Cost Function Analysis
	Debt Service • Debt Service (5100) • Fund Transfers (5200)

Table 25. Included and Excluded Objects from Cost Function Analysis[cvii]

Objects	Categories That Have Been Included or Excluded from the Cost Function Analysis
Included	***Personal Services – Salaries*** • Regular Certified Salaries (110) • Regular Non-Certified Salaries (120) • Additional Compensation (150) ***Employee Benefits*** • Group Insurance (210) • Social Security Contribution (220) • On-Behalf Payments (240) • Tuition Reimbursement (250) • Unemployment Compensation (260) • Worker's Compensation (270) • Health Benefits (280) • Other Employee Benefits (290) ***Purchased Professional and Technical Services*** • Official/Admin Services (310) • Professional-Education Services (320) • Professional Employee Training (330) • Other Professional Services (340) • Technical Services (350) ***Purchased Property Services*** • Utility Services (410) • Cleaning Services (420) • Repairs and Maintenance Services (430) • Rentals (440) • Construction Services (450) • Repair of Buildings (460) • Other Purchased Property Srvcs (490) ***Other Purchased Services*** • Insurance Services (520) • Communication (530) • Advertising (540) • Printing & Binding (550) • Tuitions (560) • Staff Travel (580) • Interagency Purchased Services (590) ***Supplies and Materials*** • Gen'l Supplies and Materials (610) • Energy (620) • Food and Milk (630) • Books and Periodicals (640) • Supplies-Tech Related (650) • Merchandise Purchased for Resale (660) • Testing Supplies and Materials (670) • Miscellaneous Supplies (680)

Objects	Categories That Have Been Included or Excluded from the Cost Function Analysis
Excluded	***Other Purchased Services*** • Student Transportation (510) • Food Service Management (570) ***Property*** • Land and Improvement (710) • Building (Existing Buildings) (720) • Equipment (730) • Infrastructure (740) • Depreciation (790) ***Debt Service*** • Dues and Fees (810) • Judgments Against the LEA (820) • Debt-Related Expenditures (830) ***Other Items*** • Fund Transfers (930-980)

Technical Appendix D: School District Characteristics

Drawing from the findings discussed in Chapter 5 of this report, below is a list of each school district in Kansas that had sufficient data to generate an estimated General Fund revenue allocation for the current and subsequent four years. The numbers presented in columns 4-6 are expressed as decimals and when multiplied by 100 equal the percentages of the student population for those need categories.

Table 26. List of school district characteristics and index values by each Kansas school district

District ID	District Name	Total Enroll (#)	Percentage Poverty (%)	Percentage ELL (%)	Percentage Special Ed (%)	Teacher Cost Index
D0435	Abilene	1,635	0.36	0.01	0.17	1.30
D0387	Altoona-Midway	177	0.46	0.00	0.19	1.30
D0385	Andover	8,281	0.08	0.03	0.08	1.45
D0359	Argonia Public Schools	191	0.40	0.00	0.26	1.33
D0470	Arkansas City	2,912	0.60	0.17	0.22	1.30
D0220	Ashland	196	0.31	0.14	0.13	1.36
D0377	Atchison Co Comm Schools	527	0.40	0.01	0.19	1.39
D0409	Atchison Public Schools	1,743	0.55	0.01	0.22	1.35
D0511	Attica	172	0.34	0.00	0.23	1.16
D0437	Auburn Washburn	6,323	0.25	0.03	0.12	1.52

D0402	Augusta	2,295	0.33	0.01	0.14	1.41
D0348	Baldwin City	1,431	0.26	0.00	0.18	1.51
D0254	Barber County North	485	0.38	0.01	0.20	1.15
D0223	Barnes	445	0.24	0.11	0.15	1.27
D0458	Basehor-Linwood	2,549	0.12	0.01	0.13	1.36
D0508	Baxter Springs	1,022	0.53	0.04	0.17	1.37
D0357	Belle Plaine	641	0.32	0.00	0.18	1.40
D0273	Beloit	801	0.30	0.03	0.18	1.26
D0229	Blue Valley	22,640	0.05	0.03	0.10	1.56
D0384	Blue Valley	225	0.16	0.00	0.20	1.45
D0205	Bluestem	490	0.44	0.01	0.24	1.37
D0204	Bonner Springs	2,733	0.39	0.07	0.12	1.49
D0314	Brewster	148	0.37	0.00	0.18	1.06
D0459	Bucklin	239	0.43	0.02	0.18	1.40
D0313	Buhler	2,306	0.29	0.02	0.13	1.27
D0454	Burlingame Public School	299	0.34	0.02	0.25	1.44
D0244	Burlington	858	0.30	0.01	0.19	1.25

D0369	Burrton	246	0.46	0.02	0.17	1.41
D0360	Caldwell	241	0.41	0.00	0.14	1.36
D0436	Caney Valley	766	0.40	0.02	0.09	1.34
D0419	Canton-Galva	349	0.30	0.00	0.22	1.33
D0285	Cedar Vale	189	0.58	0.00	0.32	1.33
D0462	Central	316	0.48	0.02	0.24	1.34
D0288	Central Heights	559	0.53	0.01	0.18	1.33
D0112	Central Plains	531	0.34	0.00	0.18	1.34
D0397	Centre	480	0.14	0.00	0.10	1.21
D0413	Chanute Public Schools	1,851	0.52	0.03	0.15	1.28
D0361	Chaparral Schools	848	0.51	0.09	0.21	1.17
D0473	Chapman	1,093	0.34	0.00	0.13	1.34
D0284	Chase County	347	0.24	0.00	0.11	1.29
D0401	Chase-Raymond	160	0.58	0.03	0.26	1.31
D0286	Chautauqua Co Community	374	0.53	0.00	0.19	1.31
D0268	Cheney	797	0.22	0.00	0.12	1.43
D0247	Cherokee	489	0.45	0.00	0.17	1.34

D0447	Cherryvale	911	0.50	0.00	0.12	1.37
D0505	Chetopa-St. Paul	438	0.42	0.00	0.15	1.35
D0103	Cheylin	129	0.48	0.29	0.12	1.00
D0102	Cimarron-Ensign	655	0.35	0.21	0.14	1.44
D0375	Circle	1,971	0.19	0.01	0.11	1.41
D0379	Clay Center	1,363	0.31	0.00	0.20	1.24
D0264	Clearwater	1,154	0.23	0.00	0.18	1.49
D0224	Clifton-Clyde	316	0.29	0.00	0.17	1.19
D0445	Coffeyville	1,777	0.68	0.11	0.12	1.38
D0315	Colby Public Schools	886	0.27	0.06	0.15	1.07
D0493	Columbus	987	0.46	0.00	0.17	1.32
D0300	Comanche County	323	0.31	0.02	0.28	1.26
D0333	Concordia	1,094	0.34	0.03	0.16	1.23
D0356	Conway Springs	535	0.21	0.00	0.13	1.38
D0476	Copeland	96	0.31	0.41	0.05	1.46
D0479	Crest	223	0.43	0.02	0.16	1.27
D0332	Cunningham	160	0.29	0.03	0.16	1.37

D0232	De Soto	7,137	0.09	0.04	0.08	1.51
D0216	Deerfield	210	0.68	0.40	0.12	1.54
D0260	Derby	7,073	0.37	0.10	0.14	1.49
D0471	Dexter	145	0.32	0.00	0.19	1.35
D0482	Dighton	230	0.33	0.02	0.19	1.34
D0443	Dodge City	7,054	0.70	0.57	0.12	1.47
D0111	Doniphan West Schools	339	0.37	0.00	0.11	1.44
D0396	Douglass Public Schools	736	0.26	0.01	0.21	1.43
D0410	Durham-Hillsboro-Lehigh	599	0.27	0.03	0.17	1.26
D0449	Easton	609	0.24	0.00	0.16	1.42
D0490	El Dorado	1,968	0.45	0.01	0.20	1.35
D0283	Elk Valley	118	0.69	0.00	0.28	1.34
D0218	Elkhart	1,147	0.17	0.10	0.10	1.39
D0307	Ell-Saline	464	0.21	0.05	0.15	1.34
D0355	Ellinwood Public Schools	503	0.35	0.00	0.14	1.31
D0388	Ellis	473	0.24	0.00	0.17	1.44
D0327	Ellsworth	641	0.25	0.01	0.13	1.28

D0253	Emporia	4,598	0.48	0.34	0.13	1.34
D0101	Erie-Galesburg	525	0.49	0.01	0.18	1.35
D0491	Eudora	1,736	0.29	0.01	0.16	1.51
D0389	Eureka	661	0.52	0.01	0.14	1.18
D0310	Fairfield	286	0.52	0.06	0.18	1.31
D0492	Flinthills	273	0.32	0.00	0.20	1.31
D0234	Fort Scott	1,881	0.50	0.01	0.13	1.34
D0225	Fowler	150	0.37	0.03	0.19	1.44
D0484	Fredonia	682	0.44	0.00	0.14	1.34
D0249	Frontenac Public Schools	940	0.31	0.01	0.10	1.34
D0495	Ft Larned	943	0.42	0.02	0.23	1.31
D0207	Ft Leavenworth	1,681	0.04	0.04	0.13	1.38
D0499	Galena	849	0.53	0.01	0.17	1.35
D0457	Garden City	7,701	0.60	0.47	0.12	1.54
D0231	Gardner Edgerton	5,914	0.23	0.02	0.16	1.52
D0365	Garnett	992	0.36	0.00	0.17	1.35
D0475	Geary County Schools	7,802	0.40	0.09	0.15	1.35

D0248	Girard	1,024	0.39	0.02	0.12	1.41
D0265	Goddard	5,679	0.18	0.04	0.15	1.49
D0411	Goessel	273	0.22	0.02	0.16	1.29
D0316	Golden Plains	180	0.57	0.18	0.23	1.12
D0352	Goodland	939	0.38	0.12	0.13	1.03
D0281	Graham County	365	0.34	0.00	0.21	1.32
D0428	Great Bend	2,928	0.58	0.26	0.14	1.36
D0200	Greeley County Schools	251	0.37	0.29	0.16	1.28
D0291	Grinnell Public Schools	82	0.35	0.00	0.13	1.18
D0440	Halstead	771	0.33	0.03	0.15	1.39
D0390	Hamilton	60	0.47	0.00	0.22	1.25
D0312	Haven Public Schools	892	0.31	0.06	0.13	1.27
D0474	Haviland	104	0.32	0.00	0.19	1.23
D0489	Hays	3,177	0.32	0.07	0.17	1.50
D0261	Haysville	5,648	0.46	0.04	0.16	1.52
D0468	Healy Public Schools	67	0.54	0.21	0.22	1.34
D0487	Herington	487	0.49	0.00	0.21	1.29

D0460	Hesston	802	0.17	0.04	0.09	1.42
D0415	Hiawatha	933	0.41	0.01	0.17	1.37
D0227	Hodgeman County Schools	292	0.25	0.06	0.16	1.39
D0431	Hoisington	753	0.44	0.01	0.17	1.40
D0363	Holcomb	1,018	0.45	0.17	0.09	1.58
D0336	Holton	1,128	0.34	0.03	0.12	1.44
D0412	Hoxie Community Schools	392	0.26	0.00	0.19	1.19
D0210	Hugoton Public Schools	1,047	0.50	0.37	0.08	1.41
D0258	Humboldt	805	0.28	0.00	0.11	1.26
D0308	Hutchinson Public Schools	4,677	0.55	0.06	0.19	1.30
D0446	Independence	2,137	0.51	0.03	0.19	1.44
D0477	Ingalls	212	0.27	0.13	0.02	1.42
D0448	Inman	431	0.20	0.00	0.15	1.29
D0257	Iola	1,305	0.50	0.00	0.19	1.23
D0346	Jayhawk	577	0.49	0.02	0.15	1.31
D0339	Jefferson County North	464	0.23	0.00	0.19	1.50

D0340	Jefferson West	861	0.21	0.00	0.16	1.42
D0500	Kansas City	21,937	0.78	0.40	0.13	1.54
D0321	Kaw Valley	1,182	0.27	0.00	0.21	1.45
D0331	Kingman - Norwich	979	0.32	0.01	0.21	1.38
D0347	Kinsley-Offerle	349	0.45	0.18	0.21	1.35
D0422	Kiowa County	420	0.16	0.00	0.14	1.30
D0483	Kismet-Plains	708	0.65	0.67	0.11	1.50
D0395	LaCrosse	289	0.36	0.00	0.17	1.33
D0506	Labette County	1,574	0.46	0.00	0.15	1.41
D0215	Lakin	636	0.43	0.26	0.10	1.48
D0469	Lansing	2,698	0.21	0.02	0.17	1.34
D0497	Lawrence	11,969	0.28	0.09	0.13	1.54
D0245	LeRoy-Gridley	208	0.32	0.00	0.18	1.23
D0453	Leavenworth	3,873	0.49	0.02	0.16	1.37
D0243	Lebo-Waverly	428	0.30	0.01	0.17	1.30
D0467	Leoti	400	0.44	0.35	0.16	1.39
D0502	Lewis	118	0.48	0.22	0.14	1.26

D0480	Liberal	4,971	0.71	0.64	0.11	1.48
D0298	Lincoln	353	0.41	0.01	0.16	1.34
D0444	Little River	315	0.21	0.02	0.19	1.31
D0326	Logan	150	0.31	0.03	0.16	1.23
D0416	Louisburg	1,720	0.15	0.02	0.09	1.36
D0421	Lyndon	436	0.28	0.00	0.15	1.44
D0405	Lyons	847	0.59	0.23	0.25	1.28
D0351	Macksville	236	0.48	0.36	0.17	1.24
D0386	Madison-Virgil	219	0.40	0.00	0.21	1.30
D0266	Maize	7,173	0.14	0.02	0.12	1.48
D0383	Manhattan-Ogden	6,388	0.29	0.07	0.17	1.44
D0456	Marais Des Cygnes Valley	220	0.49	0.00	0.29	1.48
D0408	Marion-Florence	521	0.33	0.00	0.19	1.20
D0256	Marmaton Valley	287	0.44	0.00	0.16	1.29
D0364	Marysville	747	0.31	0.01	0.20	1.29
D0342	McLouth	488	0.32	0.00	0.19	1.40
D0418	McPherson	2,404	0.29	0.02	0.19	1.37

D0226	Meade	408	0.27	0.05	0.18	1.43
D0219	Minneola	244	0.51	0.02	0.18	1.48
D0330	Mission Valley	497	0.28	0.00	0.21	1.46
D0371	Montezuma	236	0.37	0.12	0.08	1.43
D0417	Morris County	733	0.34	0.03	0.13	1.29
D0209	Moscow Public Schools	175	0.61	0.35	0.07	1.46
D0423	Moundridge	401	0.19	0.00	0.15	1.28
D0263	Mulvane	1,797	0.31	0.01	0.15	1.47
D0115	Nemaha Central	603	0.14	0.02	0.11	1.22
D0461	Neodesha	697	0.48	0.01	0.12	1.38
D0303	Ness City	312	0.38	0.14	0.20	1.27
D0373	Newton	3,539	0.43	0.06	0.16	1.37
D0309	Nickerson	1,139	0.43	0.03	0.14	1.31
D0335	North Jackson	367	0.31	0.00	0.22	1.46
D0251	North Lyon County	395	0.44	0.00	0.14	1.29
D0239	North Ottawa County	616	0.32	0.00	0.20	1.35
D0246	Northeast	496	0.58	0.01	0.20	1.36

D0212	Northern Valley	146	0.39	0.00	0.16	1.19
D0211	Norton Community Schools	665	0.31	0.01	0.17	1.18
D0274	Oakley	409	0.38	0.00	0.17	1.16
D0294	Oberlin	340	0.32	0.00	0.13	1.15
D0233	Olathe	29,029	0.21	0.11	0.13	1.53
D0322	Onaga-Havensville-Wheaton	302	0.33	0.00	0.23	1.39
D0420	Osage City	685	0.35	0.01	0.20	1.43
D0367	Osawatomie	1,161	0.53	0.00	0.23	1.41
D0392	Osborne County	278	0.38	0.00	0.18	1.24
D0341	Oskaloosa Public Schools	612	0.41	0.00	0.21	1.40
D0504	Oswego	461	0.49	0.00	0.18	1.35
D0403	Otis-Bison	246	0.40	0.00	0.11	1.38
D0290	Ottawa	2,479	0.42	0.01	0.11	1.34
D0358	Oxford	444	0.25	0.01	0.15	1.41
D0269	Palco	88	0.27	0.00	0.18	1.39
D0368	Paola	2,029	0.27	0.01	0.14	1.38

D0399	Paradise	113	0.37	0.04	0.26	1.41
D0503	Parsons	1,314	0.60	0.01	0.17	1.37
D0496	Pawnee Heights	152	0.25	0.03	0.11	1.25
D0398	Peabody-Burns	262	0.47	0.00	0.22	1.20
D0343	Perry Public Schools	745	0.29	0.01	0.19	1.46
D0325	Phillipsburg	621	0.26	0.00	0.17	1.20
D0426	Pike Valley	223	0.40	0.02	0.20	1.17
D0203	Piper-Kansas City	2,186	0.13	0.04	0.09	1.48
D0250	Pittsburg	3,143	0.57	0.10	0.18	1.33
D0270	Plainville	340	0.28	0.00	0.18	1.44
D0344	Pleasanton	359	0.46	0.00	0.23	1.29
D0113	Prairie Hills	1,125	0.27	0.00	0.16	1.27
D0362	Prairie View	919	0.38	0.01	0.18	1.36
D0382	Pratt	1,229	0.40	0.08	0.14	1.21
D0311	Pretty Prairie	244	0.25	0.00	0.05	1.30
D0293	Quinter Public Schools	304	0.24	0.05	0.22	1.29
D0105	Rawlins County	335	0.33	0.10	0.18	1.08

D0206	Remington-Whitewater	515	0.29	0.07	0.14	1.37
D0267	Renwick	1,856	0.10	0.00	0.11	1.45
D0109	Republic County	515	0.41	0.00	0.20	1.15
D0378	Riley County	681	0.20	0.01	0.17	1.41
D0114	Riverside	642	0.45	0.00	0.24	1.49
D0404	Riverton	741	0.42	0.01	0.14	1.34
D0323	Rock Creek	1,043	0.22	0.01	0.14	1.46
D0107	Rock Hills	312	0.42	0.00	0.17	1.20
D0217	Rolla	134	0.34	0.28	0.13	1.41
D0394	Rose Hill Public Schools	1,616	0.22	0.02	0.13	1.46
D0337	Royal Valley	837	0.40	0.00	0.17	1.47
D0481	Rural Vista	297	0.35	0.02	0.22	1.30
D0407	Russell County	836	0.42	0.01	0.21	1.37
D0305	Salina	7,386	0.47	0.12	0.14	1.34
D0434	Santa Fe Trail	1,040	0.40	0.00	0.22	1.46
D0507	Satanta	307	0.59	0.50	0.09	1.47
D0466	Scott County	1,023	0.37	0.25	0.12	1.41

D0345	Seaman	3,807	0.28	0.01	0.16	1.50
D0439	Sedgwick Public Schools	479	0.31	0.00	0.14	1.42
D0450	Shawnee Heights	3,504	0.27	0.03	0.13	1.49
D0512	Shawnee Mission Pub Sch	27,333	0.28	0.12	0.09	1.56
D0372	Silver Lake	716	0.14	0.01	0.12	1.53
D0438	Skyline Schools	412	0.23	0.05	0.12	1.20
D0237	Smith Center	400	0.37	0.00	0.19	1.21
D0400	Smoky Valley	1,572	0.13	0.00	0.09	1.32
D0393	Solomon	316	0.38	0.00	0.19	1.35
D0255	South Barber	255	0.36	0.02	0.24	1.12
D0430	South Brown County	577	0.58	0.05	0.19	1.44
D0509	South Haven	208	0.36	0.00	0.23	1.42
D0306	Southeast Of Saline	697	0.18	0.00	0.14	1.28
D0334	Southern Cloud	207	0.46	0.00	0.20	1.30
D0252	Southern Lyon County	498	0.34	0.00	0.14	1.29
D0381	Spearville	356	0.27	0.05	0.12	1.42
D0230	Spring Hill	3,896	0.11	0.01	0.16	1.47

D0297	St Francis Comm Sch	283	0.30	0.09	0.14	1.05
D0350	St John-Hudson	328	0.39	0.16	0.20	1.25
D0349	Stafford	209	0.52	0.10	0.22	1.27
D0452	Stanton County	438	0.41	0.36	0.10	1.28
D0376	Sterling	508	0.28	0.01	0.14	1.33
D0271	Stockton	342	0.40	0.01	0.25	1.33
D0374	Sublette	466	0.49	0.33	0.08	1.47
D0299	Sylvan Grove	248	0.34	0.00	0.13	1.26
D0494	Syracuse	542	0.49	0.43	0.09	1.33
D0110	Thunder Ridge Schools	217	0.50	0.02	0.22	1.18
D0464	Tonganoxie	1,963	0.22	0.01	0.14	1.39
D0501	Topeka Public Schools	13,794	0.66	0.13	0.19	1.53
D0275	Triplains	65	0.28	0.00	0.23	1.18
D0429	Troy Public Schools	333	0.22	0.00	0.18	1.44
D0202	Turner-Kansas City	4,110	0.63	0.24	0.11	1.54
D0240	Twin Valley	603	0.34	0.00	0.15	1.37
D0463	Udall	311	0.33	0.00	0.18	1.24

D0214	Ulysses	1,758	0.50	0.39	0.11	1.38
D0235	Uniontown	442	0.45	0.00	0.12	1.34
D0262	Valley Center Pub Sch	2,879	0.30	0.02	0.14	1.45
D0338	Valley Falls	381	0.31	0.00	0.19	1.45
D0498	Valley Heights	401	0.37	0.01	0.17	1.29
D0380	Vermillion	578	0.22	0.00	0.12	1.27
D0432	Victoria	288	0.13	0.00	0.16	1.44
D0329	Wabaunsee	446	0.23	0.00	0.16	1.42
D0272	Waconda	325	0.36	0.00	0.17	1.20
D0208	Wakeeney	387	0.27	0.00	0.27	1.39
D0241	Wallace County Schools	202	0.29	0.02	0.17	1.16
D0320	Wamego	1,533	0.20	0.01	0.14	1.42
D0108	Washington Co. Schools	340	0.37	0.01	0.22	1.25
D0353	Wellington	1,622	0.46	0.01	0.23	1.36
D0289	Wellsville	782	0.23	0.00	0.17	1.27
D0242	Weskan	104	0.26	0.05	0.20	1.12
D0282	West Elk	353	0.46	0.00	0.28	1.25

D0287	West Franklin	601	0.42	0.00	0.28	1.29
D0106	Western Plains	107	0.56	0.25	0.18	1.31
D0292	Wheatland	110	0.25	0.00	0.10	1.22
D0259	Wichita	50,566	0.65	0.22	0.14	1.50
D0465	Winfield	2,227	0.46	0.04	0.18	1.33
D0366	Woodson	464	0.47	0.00	0.21	1.18

Technical Appendix E: School District Cost Estimates and Weights

Drawing from the findings discussed in chapter 5 of this report, below is a list of each school district in Kansas and the associated estimated base cost per pupil, gap closure per pupil cost, and associated index values for regional cost variation, overall size, and student demographic composition. These tables would apply for the latest year of financial data available which was the 2016-17 school year. The numbers presented in columns 4-6 are expressed as decimals and when multiplied by 100 equal the percentages of the student population for those need categories.

Table 27. School district base and gap closure cost estimates and index values

			Maintenance					Compensate	
District ID	District Name	Total Enroll	Base (95%)	Base (90%)	Regional Index	Economies of Scale Index	Student Need Index	Scenario A	Scenario B
D0435	Abilene	1,635	$3,757.95	$3,483.82	1.88	1.00	1.35	1.29	1.40
D0387	Altoona-Midway	177	$3,724.81	$3,425.46	1.79	1.56	1.47	1.28	1.42
D0385	Andover	8,281	$3,739.55	$3,468.94	1.46	1.35	1.00	1.35	1.35
D0359	Argonia Public Schools	191	$3,668.30	$3,385.17	1.69	1.51	1.34	1.37	1.49
D0470	Arkansas City	2,912	$3,691.10	$3,429.75	1.78	1.05	1.68	1.09	1.14
D0220	Ashland	196	$3,821.00	$3,542.61	1.77	1.49	1.30	1.09	1.21

D0377	Atchison Co Comm Schools	527	$3,929.73	$3,622.75	1.70	1.11	1.40	1.43	1.46
D0409	Atchison Public Schools	1,743	$3,694.44	$3,431.28	1.71	1.00	1.58	1.12	1.15
D0511	Attica	172	$3,639.13	$3,387.73	1.71	1.57	1.31	1.10	1.03
D0437	Auburn Washburn	6,323	$3,799.58	$3,527.01	1.37	1.24	1.21	1.22	1.27
D0402	Augusta	2,295	$3,718.73	$3,452.10	1.61	1.02	1.30	1.18	1.23
D0348	Baldwin City	1,431	$3,722.02	$3,454.77	1.54	1.00	1.23	1.18	1.20
D0254	Barber County North	485	$3,823.36	$3,536.73	1.65	1.13	1.37	1.33	1.33
D0223	Barnes	445	$3,757.56	$3,483.51	1.76	1.15	1.23	1.19	1.24
D0458	Basehor-Linwood	2,549	$3,764.68	$3,489.27	1.68	1.03	1.07	1.25	1.35
D0508	Baxter Springs	1,022	$3,915.11	$3,610.93	1.76	1.01	1.58	1.40	1.46
D0357	Belle Plaine	641	$3,720.23	$3,453.32	1.68	1.07	1.30	1.58	1.74

D0273	Beloit	801	$3,875.12	$3,578.59	1.77	1.04	1.28	1.45	1.43
D0384	Blue Valley	225	$3,720.60	$3,453.61	1.72	1.42	1.13	1.26	1.37
D0229	Blue Valley	22,640	$3,761.13	$3,486.39	1.15	1.97	1.00	1.31	1.31
D0205	Bluestem	490	$3,866.36	$3,571.50	1.71	1.13	1.42	1.15	1.13
D0204	Bonner Springs	2,733	$3,722.69	$3,455.30	1.41	1.04	1.38	1.16	1.27
D0314	Brewster	148	$3,835.54	$3,546.58	1.37	1.68	1.35	1.29	1.25
D0459	Bucklin	239	$3,524.15	$3,282.37	1.72	1.38	1.44	1.48	1.49
D0313	Buhler	2,306	$3,704.92	$3,440.93	1.83	1.02	1.26	1.29	1.29
D0454	Burlingame Public School	299	$3,667.20	$3,384.38	1.67	1.28	1.28	1.31	1.36
D0244	Burlington	858	$3,756.92	$3,482.99	1.86	1.03	1.28	1.37	1.32
D0369	Burrton	246	$3,682.50	$3,395.29	1.69	1.37	1.48	1.12	1.21

D0360	Caldwell	241	$3,690.79	$3,401.21	1.71	1.38	1.39	2.09	2.26
D0436	Caney Valley	766	$3,952.68	$3,641.32	1.72	1.04	1.33	0.95	0.91
D0419	Canton-Galva	349	$3,898.47	$3,597.47	1.72	1.23	1.26	1.26	1.44
D0285	Cedar Vale	189	$3,681.62	$3,394.67	1.77	1.51	1.43	0.77	0.86
D0462	Central	316	$3,902.09	$3,600.40	1.70	1.26	1.46	1.06	1.17
D0288	Central Heights	559	$3,689.73	$3,400.45	1.72	1.10	1.57	1.41	1.49
D0112	Central Plains	531	$3,775.15	$3,497.73	1.77	1.11	1.33	0.98	0.96
D0397	Centre	480	$3,956.33	$3,590.57	1.68	1.13	1.07	1.07	1.10
D0413	Chanute Public Schools	1,851	$3,723.43	$3,455.91	1.91	1.01	1.55	1.01	1.04
D0361	Chaparral Schools	848	$3,858.93	$3,565.50	1.74	1.03	1.56	1.08	1.05
D0473	Chapman	1,093	$3,764.03	$3,488.74	1.79	1.01	1.31	1.14	1.21

D0284	Chase County	347	$3,923.67	$3,617.85	1.74	1.23	1.18	1.08	1.20
D0401	Chase-Raymond	160	$3,761.06	$3,486.33	1.76	1.62	1.57	0.99	1.11
D0286	Chautauqua Co Community	374	$3,980.06	$3,663.46	1.78	1.20	1.56	1.04	1.14
D0268	Cheney	797	$3,722.22	$3,454.93	1.66	1.04	1.17	1.00	1.02
D0247	Cherokee	489	$3,813.08	$3,528.41	1.74	1.13	1.46	1.21	1.34
D0447	Cherryvale	911	$3,877.80	$3,580.75	1.71	1.02	1.50	1.10	1.24
D0505	Chetopa-St. Paul	438	$3,748.02	$3,461.57	1.76	1.16	1.42	1.46	1.61
D0103	Cheylin	129	$3,917.57	$3,612.92	1.24	1.79	1.49	1.36	1.40
D0102	Cimarron-Ensign	655	$3,892.72	$3,592.82	1.82	1.07	1.35	1.05	1.06
D0375	Circle	1,971	$3,812.65	$3,537.11	1.66	1.01	1.13	1.30	1.33
D0379	Clay Center	1,363	$3,474.29	$3,254.40	1.81	1.00	1.28	1.06	1.13

D0264	Clearwater	1,154	$3,846.49	$3,564.64	1.59	1.01	1.20	1.31	1.35
D0224	Clifton-Clyde	316	$3,800.66	$3,518.37	1.75	1.26	1.27	0.90	0.98
D0445	Coffeyville	1,777	$3,789.23	$3,517.99	1.66	1.00	1.79	1.24	1.32
D0315	Colby Public Schools	886	$3,394.97	$3,190.25	1.79	1.03	1.25	1.76	1.90
D0493	Columbus	987	$3,723.05	$3,455.59	1.82	1.02	1.47	1.08	1.20
D0300	Comanche County	323	$3,716.60	$3,450.38	1.68	1.25	1.20	1.31	1.28
D0333	Concordia	1,094	$3,394.97	$3,190.25	1.85	1.01	1.33	1.34	1.49
D0356	Conway Springs	535	$3,785.39	$3,506.02	1.70	1.11	1.17	1.30	1.40
D0476	Copeland	96	$3,394.97	$3,190.25	1.84	2.09	1.16	1.20	1.28
D0479	Crest	223	$3,692.32	$3,430.75	1.77	1.42	1.43	1.21	1.29
D0332	Cunningham	160	$3,850.85	$3,558.96	1.70	1.62	1.27	1.07	1.20

D0232	De Soto	7,137	$3,739.73	$3,469.09	1.38	1.28	1.01	1.21	1.26
D0216	Deerfield	210	$3,715.99	$3,449.89	1.76	1.45	1.75	0.61	0.76
D0260	Derby	7,073	$3,693.81	$3,431.94	1.35	1.28	1.37	1.13	1.18
D0471	Dexter	145	$3,665.97	$3,383.51	1.70	1.70	1.29	2.81	2.96
D0482	Dighton	230	$3,899.50	$3,598.31	1.76	1.40	1.32	1.15	1.18
D0443	Dodge City	7,054	$3,705.07	$3,441.05	1.57	1.28	1.66	1.18	1.26
D0111	Doniphan West Schools	339	$3,831.82	$3,543.57	1.71	1.24	1.33	1.33	1.38
D0396	Douglass Public Schools	736	$3,816.91	$3,531.51	1.66	1.05	1.23	1.25	1.33
D0410	Durham-Hillsboro-Lehigh	599	$3,685.13	$3,397.17	1.83	1.08	1.25	1.21	1.22
D0449	Easton	609	$3,794.21	$3,513.15	1.65	1.08	1.21	1.37	1.42
D0490	El Dorado	1,968	$3,711.46	$3,446.22	1.71	1.01	1.46	1.17	1.23

D0283	Elk Valley	118	$3,844.53	$3,553.85	1.78	1.87	1.68	1.34	1.54
D0218	Elkhart	1,147	$3,750.74	$3,477.99	1.80	1.01	1.11	1.14	1.28
D0307	Ell-Saline	464	$3,918.97	$3,614.05	1.70	1.14	1.19	1.22	1.38
D0355	Ellinwood Public Schools	503	$3,765.93	$3,499.25	1.73	1.12	1.32	1.20	1.18
D0388	Ellis	473	$3,927.69	$3,621.11	1.70	1.13	1.21	0.84	0.93
D0327	Ellsworth	641	$3,877.51	$3,580.52	1.80	1.07	1.21	1.25	1.28
D0253	Emporia	4,598	$3,747.89	$3,475.69	1.72	1.14	1.48	1.32	1.38
D0101	Erie-Galesburg	525	$3,765.46	$3,489.90	1.79	1.11	1.51	1.13	1.18
D0491	Eudora	1,736	$3,702.03	$3,438.60	1.47	1.00	1.26	1.38	1.44
D0389	Eureka	661	$3,846.40	$3,555.36	1.73	1.06	1.54	1.36	1.50
D0310	Fairfield	286	$3,956.33	$3,590.57	1.68	1.30	1.57	1.31	1.51

D0492	Flinthills	273	$3,876.71	$3,589.95	1.67	1.32	1.30	1.12	1.19
D0234	Fort Scott	1,881	$3,735.16	$3,465.39	1.81	1.01	1.50	1.17	1.23
D0225	Fowler	150	$3,837.04	$3,547.79	1.84	1.67	1.36	1.33	1.31
D0484	Fredonia	682	$3,883.98	$3,585.76	1.80	1.06	1.44	0.77	0.82
D0249	Frontenac Public Schools	940	$3,712.59	$3,447.13	1.72	1.02	1.25	0.97	1.03
D0495	Ft Larned	943	$3,730.15	$3,461.34	1.80	1.02	1.41	1.29	1.39
D0207	Ft Leavenworth	1,681	$3,583.00	$3,342.32	1.60	1.00	1.01	1.60	1.60
D0499	Galena	849	$3,736.02	$3,466.09	1.79	1.03	1.57	1.03	1.09
D0457	Garden City	7,701	$3,773.73	$3,504.71	1.57	1.31	1.59	1.36	1.53
D0231	Gardner Edgerton	5,914	$3,394.97	$3,190.25	1.40	1.21	1.20	1.18	1.19
D0365	Garnett	992	$3,881.82	$3,584.01	1.80	1.02	1.34	1.36	1.43

D0475	Geary County Schools	7,802	$3,633.77	$3,383.38	1.71	1.32	1.41	1.23	1.30
D0248	Girard	1,024	$3,394.97	$3,190.25	1.68	1.01	1.36	1.07	1.19
D0265	Goddard	5,679	$3,806.19	$3,532.27	1.40	1.20	1.16	1.43	1.53
D0411	Goessel	273	$3,711.63	$3,416.07	1.82	1.32	1.20	1.32	1.37
D0316	Golden Plains	180	$3,755.08	$3,481.50	1.58	1.55	1.63	1.10	1.13
D0352	Goodland	939	$3,883.16	$3,585.09	1.61	1.02	1.37	1.01	1.00
D0281	Graham County	365	$3,888.51	$3,589.42	1.76	1.21	1.31	1.17	1.28
D0428	Great Bend	2,928	$3,819.30	$3,543.33	1.70	1.05	1.65	1.51	1.61
D0200	Greeley County Schools	251	$3,654.40	$3,375.26	1.68	1.36	1.37	1.13	1.18
D0291	Grinnell Public Schools	82	$3,394.97	$3,190.25	1.59	2.28	1.33	1.24	1.31
D0440	Halstead	771	$3,741.86	$3,470.81	1.68	1.04	1.31	1.13	1.13

D0390	Hamilton	60	$4,113.33	$3,771.25	1.68	2.75	1.47	1.06	1.25
D0312	Haven Public Schools	892	$3,856.54	$3,566.41	1.75	1.02	1.28	1.30	1.32
D0474	Haviland	104	$3,394.97	$3,190.25	1.67	2.00	1.30	1.20	1.13
D0489	Hays	3,177	$3,708.94	$3,444.19	1.55	1.06	1.32	1.22	1.26
D0261	Haysville	5,648	$3,394.97	$3,190.25	1.31	1.20	1.48	1.17	1.24
D0468	Healy Public Schools	67	$3,906.32	$3,603.82	1.76	2.57	1.59	0.23	0.25
D0487	Herington	487	$3,714.95	$3,449.04	1.84	1.13	1.50	1.05	1.12
D0460	Hesston	802	$3,753.25	$3,480.02	1.62	1.04	1.09	1.22	1.21
D0415	Hiawatha	933	$3,697.14	$3,434.64	1.79	1.02	1.42	1.26	1.36
D0227	Hodgeman County Schools	292	$3,887.00	$3,588.19	1.81	1.29	1.23	1.20	1.29
D0431	Hoisington	753	$3,720.28	$3,453.36	1.70	1.04	1.45	1.28	1.25

D0363	Holcomb	1,018	$3,743.45	$3,472.10	1.67	1.01	1.42	0.83	0.92
D0336	Holton	1,128	$3,704.70	$3,440.76	1.63	1.01	1.30	1.44	1.46
D0412	Hoxie Community Schools	392	$3,834.20	$3,545.50	1.65	1.19	1.23	1.24	1.29
D0210	Hugoton Public Schools	1,047	$3,752.84	$3,488.33	1.80	1.01	1.45	1.12	1.22
D0258	Humboldt	805	$3,730.27	$3,461.43	1.84	1.04	1.22	1.15	1.26
D0308	Hutchinson Public Schools	4,677	$3,863.10	$3,573.61	1.83	1.14	1.61	1.31	1.37
D0446	Independence	2,137	$3,548.90	$3,300.02	1.61	1.01	1.55	1.12	1.13
D0477	Ingalls	212	$3,686.24	$3,397.96	1.83	1.45	1.10	0.92	0.94
D0448	Inman	431	$3,953.96	$3,642.36	1.73	1.16	1.17	1.44	1.57
D0257	Iola	1,305	$3,726.94	$3,458.74	1.94	1.00	1.53	1.04	1.12
D0346	Jayhawk	577	$3,856.57	$3,563.59	1.71	1.09	1.51	0.99	0.99

D0339	Jefferson County North	464	$3,721.28	$3,454.16	1.63	1.14	1.20	1.16	1.20
D0340	Jefferson West	861	$3,748.15	$3,475.90	1.62	1.03	1.18	1.15	1.12
D0500	Kansas City	21,937	$3,679.89	$3,420.69	1.17	1.97	1.91	1.33	1.39
D0321	Kaw Valley	1,182	$3,923.24	$3,617.51	1.66	1.00	1.23	1.09	1.16
D0331	Kingman - Norwich	979	$3,788.83	$3,508.80	1.70	1.02	1.30	1.18	1.21
D0347	Kinsley-Offerle	349	$3,874.51	$3,578.10	1.79	1.23	1.48	0.99	1.10
D0422	Kiowa County	420	$3,805.13	$3,499.86	1.74	1.17	1.12	0.97	1.03
D0483	Kismet-Plains	708	$3,677.24	$3,391.54	1.77	1.05	1.50	1.20	1.23
D0395	LaCrosse	289	$3,815.03	$3,539.92	1.77	1.30	1.35	1.12	1.18
D0506	Labette County	1,574	$3,757.27	$3,483.28	1.69	1.00	1.47	1.39	1.39
D0215	Lakin	636	$3,685.16	$3,424.95	1.76	1.07	1.41	1.03	1.08

D0469	Lansing	2,698	$3,775.74	$3,498.22	1.72	1.04	1.19	1.32	1.39
D0497	Lawrence	11,969	$3,742.54	$3,471.36	1.30	1.55	1.25	1.18	1.20
D0245	LeRoy-Gridley	208	$3,798.78	$3,516.85	1.77	1.46	1.30	1.35	1.37
D0453	Leavenworth	3,873	$3,789.90	$3,509.66	1.62	1.10	1.52	1.06	1.04
D0243	Lebo-Waverly	428	$3,708.44	$3,413.79	1.80	1.16	1.28	1.13	1.13
D0467	Leoti	400	$3,878.48	$3,581.31	1.81	1.18	1.45	1.20	1.19
D0502	Lewis	118	$3,394.97	$3,190.25	1.69	1.87	1.52	1.46	1.71
D0480	Liberal	4,971	$3,720.29	$3,457.82	1.55	1.16	1.60	1.11	1.23
D0298	Lincoln	353	$3,842.67	$3,552.34	1.78	1.22	1.41	0.91	0.97
D0444	Little River	315	$3,848.11	$3,573.81	1.74	1.26	1.18	1.44	1.45
D0326	Logan	150	$3,984.39	$3,666.97	1.68	1.67	1.29	1.16	1.26

D0416	Louisburg	1,720	$3,759.93	$3,485.43	1.70	1.00	1.08	1.23	1.32
D0421	Lyndon	436	$3,736.20	$3,466.23	1.66	1.16	1.25	1.35	1.45
D0405	Lyons	847	$3,684.38	$3,424.32	1.85	1.03	1.63	1.37	1.37
D0351	Macksville	236	$3,928.82	$3,622.02	1.69	1.39	1.50	1.06	1.14
D0386	Madison-Virgil	219	$3,990.45	$3,671.86	1.77	1.43	1.38	1.16	1.14
D0266	Maize	7,173	$3,742.63	$3,471.43	1.37	1.28	1.10	1.17	1.21
D0383	Manhattan-Ogden	6,388	$3,730.71	$3,466.03	1.52	1.24	1.28	1.32	1.34
D0456	Marais Des Cygnes Valley	220	$3,726.52	$3,458.40	1.68	1.43	1.40	1.13	1.08
D0408	Marion-Florence	521	$3,778.91	$3,500.78	1.82	1.11	1.31	1.20	1.18
D0256	Marmaton Valley	287	$3,922.52	$3,616.93	1.78	1.30	1.45	1.69	1.83
D0364	Marysville	747	$3,951.25	$3,640.16	1.82	1.05	1.29	1.08	1.11

D0342	McLouth	488	$3,734.67	$3,465.00	1.67	1.13	1.30	1.44	1.66
D0418	McPherson	2,404	$3,750.79	$3,478.03	1.68	1.02	1.27	1.11	1.10
D0226	Meade	408	$3,394.97	$3,190.25	1.82	1.18	1.25	1.57	1.66
D0219	Minneola	244	$3,721.08	$3,454.01	1.85	1.37	1.54	1.39	1.48
D0330	Mission Valley	497	$3,970.90	$3,656.06	1.71	1.12	1.24	1.17	1.36
D0371	Montezuma	236	$3,839.91	$3,550.11	1.80	1.39	1.31	1.33	1.26
D0417	Morris County	733	$3,874.43	$3,578.03	1.78	1.05	1.31	1.36	1.37
D0209	Moscow Public Schools	175	$3,690.08	$3,400.70	1.86	1.56	1.57	1.23	1.22
D0423	Moundridge	401	$3,730.57	$3,461.68	1.74	1.18	1.16	1.10	1.12
D0263	Mulvane	1,797	$3,736.69	$3,466.63	1.52	1.00	1.29	1.36	1.44
D0115	Nemaha Central	603	$3,819.75	$3,533.81	1.84	1.08	1.08	1.67	1.61

D0461	Neodesha	697	$3,915.05	$3,610.88	1.78	1.06	1.47	1.06	1.05
D0303	Ness City	312	$3,993.60	$3,674.42	1.73	1.27	1.40	0.85	0.89
D0373	Newton	3,539	$3,503.07	$3,291.83	1.67	1.08	1.44	1.19	1.28
D0309	Nickerson	1,139	$3,795.45	$3,523.64	1.75	1.01	1.42	1.13	1.23
D0335	North Jackson	367	$3,932.46	$3,624.96	1.71	1.21	1.28	1.24	1.34
D0251	North Lyon County	395	$3,759.59	$3,485.15	1.69	1.19	1.43	1.30	1.36
D0239	North Ottawa County	616	$3,911.67	$3,608.15	1.70	1.08	1.29	1.01	1.03
D0246	Northeast	496	$3,767.07	$3,491.20	1.70	1.12	1.63	1.27	1.36
D0212	Northern Valley	146	$3,735.60	$3,465.75	1.66	1.69	1.38	1.30	1.34
D0211	Norton Community Schools	665	$3,798.11	$3,524.48	1.74	1.06	1.30	1.14	1.18
D0274	Oakley	409	$3,775.97	$3,498.40	1.64	1.17	1.37	0.84	0.89

D0294	Oberlin	340	$3,895.54	$3,595.11	1.60	1.24	1.28	1.16	1.22
D0233	Olathe	29,029	$3,731.06	$3,462.08	1.19	1.97	1.18	1.20	1.23
D0322	Onaga-Havensville-Wheaton	302	$3,720.66	$3,453.67	1.71	1.28	1.29	1.60	1.68
D0420	Osage City	685	$3,724.10	$3,456.44	1.65	1.06	1.33	1.67	1.62
D0367	Osawatomie	1,161	$3,750.98	$3,478.19	1.64	1.01	1.54	1.15	1.16
D0392	Osborne County	278	$3,879.97	$3,582.51	1.72	1.31	1.37	1.37	1.32
D0341	Oskaloosa Public Schools	612	$3,881.53	$3,583.77	1.67	1.08	1.41	1.53	1.59
D0504	Oswego	461	$3,892.13	$3,592.34	1.71	1.14	1.51	1.02	1.13
D0403	Otis-Bison	246	$3,941.27	$3,632.09	1.80	1.37	1.36	1.18	1.22
D0290	Ottawa	2,479	$3,727.24	$3,458.98	1.72	1.03	1.38	0.99	1.01
D0358	Oxford	444	$4,074.50	$3,739.84	1.69	1.15	1.22	0.74	0.82

D0269	Palco	88	$3,696.38	$3,434.02	1.81	2.19	1.25	1.76	1.80
D0368	Paola	2,029	$3,739.63	$3,469.01	1.68	1.01	1.24	1.13	1.19
D0399	Paradise	113	$3,835.08	$3,546.21	1.84	1.92	1.32	1.47	1.67
D0503	Parsons	1,314	$3,709.38	$3,444.54	1.68	1.00	1.66	1.14	1.19
D0496	Pawnee Heights	152	$3,956.33	$3,590.57	1.68	1.66	1.20	2.02	2.22
D0398	Peabody-Burns	262	$3,739.10	$3,435.65	1.78	1.34	1.46	1.12	1.17
D0343	Perry Public Schools	745	$3,746.55	$3,474.60	1.62	1.05	1.27	1.35	1.38
D0325	Phillipsburg	621	$3,725.99	$3,457.97	1.77	1.08	1.24	1.35	1.51
D0426	Pike Valley	223	$3,722.06	$3,454.79	1.72	1.42	1.40	0.74	0.86
D0203	Piper-Kansas City	2,186	$3,394.97	$3,190.25	1.43	1.02	1.05	0.95	1.02
D0250	Pittsburg	3,143	$3,718.12	$3,451.61	1.74	1.06	1.65	1.16	1.21

D0270	Plainville	340	$4,024.17	$3,699.13	1.80	1.24	1.25	1.33	1.28
D0344	Pleasanton	359	$3,878.29	$3,581.15	1.74	1.22	1.44	1.25	1.33
D0113	Prairie Hills	1,125	$3,738.80	$3,468.33	1.80	1.01	1.25	1.33	1.28
D0362	Prairie View	919	$3,749.73	$3,477.17	1.71	1.02	1.38	1.48	1.58
D0382	Pratt	1,229	$3,722.06	$3,454.79	1.90	1.00	1.40	1.76	1.78
D0311	Pretty Prairie	244	$3,693.91	$3,432.03	1.70	1.37	1.10	1.54	1.60
D0293	Quinter Public Schools	304	$3,809.41	$3,525.44	1.74	1.28	1.20	1.17	1.14
D0105	Rawlins County	335	$3,846.93	$3,555.79	1.51	1.24	1.33	1.37	1.50
D0206	Remington-Whitewater	515	$3,762.64	$3,487.62	1.70	1.11	1.28	1.33	1.41
D0267	Renwick	1,856	$3,739.74	$3,469.09	1.63	1.01	1.04	1.54	1.54
D0109	Republic County	515	$3,678.93	$3,392.74	1.71	1.11	1.41	1.25	1.18

D0378	Riley County	681	$3,743.88	$3,472.45	1.67	1.06	1.17	1.58	1.59
D0114	Riverside	642	$3,394.97	$3,190.25	1.58	1.07	1.42	1.05	1.06
D0404	Riverton	741	$3,739.49	$3,468.90	1.81	1.05	1.41	1.48	1.61
D0323	Rock Creek	1,043	$3,843.18	$3,552.76	1.66	1.01	1.18	1.15	1.19
D0107	Rock Hills	312	$3,645.06	$3,368.60	1.67	1.27	1.42	1.51	1.45
D0217	Rolla	134	$3,734.30	$3,432.23	1.83	1.76	1.33	1.48	1.78
D0394	Rose Hill Public Schools	1,616	$3,394.97	$3,190.25	1.53	1.00	1.18	1.10	1.12
D0337	Royal Valley	837	$3,732.99	$3,463.64	1.64	1.03	1.40	1.25	1.26
D0481	Rural Vista	297	$3,685.21	$3,425.00	1.78	1.29	1.33	1.26	1.42
D0407	Russell County	836	$3,394.97	$3,190.25	1.79	1.03	1.42	1.14	1.22
D0305	Salina	7,386	$3,722.29	$3,454.98	1.73	1.30	1.51	1.22	1.28

D0434	Santa Fe Trail	1,040	$3,739.27	$3,468.72	1.64	1.01	1.38	1.11	1.11
D0507	Satanta	307	$3,667.42	$3,384.54	1.83	1.27	1.51	0.99	1.10
D0466	Scott County	1,023	$3,394.97	$3,190.25	1.80	1.01	1.36	1.01	1.11
D0345	Seaman	3,807	$3,817.64	$3,541.90	1.44	1.09	1.26	1.18	1.26
D0439	Sedgwick Public Schools	479	$3,930.25	$3,623.18	1.64	1.13	1.28	1.03	1.09
D0450	Shawnee Heights	3,504	$3,824.30	$3,547.08	1.48	1.08	1.24	1.33	1.38
D0512	Shawnee Mission Pub Sch	27,333	$3,764.90	$3,494.81	1.05	1.97	1.22	1.41	1.42
D0372	Silver Lake	716	$3,871.92	$3,576.00	1.57	1.05	1.09	1.12	1.16
D0438	Skyline Schools	412	$3,700.77	$3,437.57	1.61	1.17	1.20	1.18	1.16
D0237	Smith Center	400	$3,919.92	$3,614.83	1.70	1.18	1.36	1.44	1.56
D0400	Smoky Valley	1,572	$3,756.68	$3,482.80	1.72	1.00	1.06	1.26	1.35

D0393	Solomon	316	$3,937.06	$3,628.69	1.79	1.26	1.37	1.13	1.18
D0255	South Barber	255	$3,841.37	$3,551.29	1.59	1.35	1.32	1.70	1.82
D0430	South Brown County	577	$3,711.00	$3,445.85	1.75	1.09	1.65	1.31	1.38
D0509	South Haven	208	$3,697.24	$3,405.80	1.72	1.46	1.33	1.34	1.44
D0306	Southeast Of Saline	697	$3,894.44	$3,594.21	1.73	1.06	1.14	1.29	1.34
D0334	Southern Cloud	207	$3,939.54	$3,630.69	1.76	1.46	1.46	1.39	1.43
D0252	Southern Lyon County	498	$3,849.63	$3,546.11	1.70	1.12	1.31	1.31	1.28
D0381	Spearville	356	$3,704.03	$3,410.65	1.72	1.22	1.23	1.08	1.13
D0230	Spring Hill	3,896	$3,675.47	$3,417.11	1.50	1.10	1.08	1.37	1.39
D0297	St Francis Comm Sch	283	$3,690.53	$3,401.02	1.47	1.31	1.29	1.76	1.94
D0350	St John-Hudson	328	$3,910.49	$3,607.20	1.75	1.25	1.41	1.32	1.37

D0349	Stafford	209	$3,710.55	$3,415.29	1.76	1.46	1.56	1.27	1.35
D0452	Stanton County	438	$3,922.32	$3,616.76	1.72	1.16	1.36	1.15	1.20
D0376	Sterling	508	$3,904.04	$3,601.98	1.80	1.12	1.25	1.16	1.17
D0271	Stockton	342	$3,659.95	$3,404.56	1.78	1.23	1.36	1.15	1.27
D0374	Sublette	466	$3,766.73	$3,498.92	1.82	1.14	1.44	1.21	1.27
D0299	Sylvan Grove	248	$3,889.62	$3,590.32	1.70	1.37	1.31	1.67	1.68
D0494	Syracuse	542	$3,865.99	$3,571.21	1.75	1.10	1.42	1.05	1.17
D0110	Thunder Ridge Schools	217	$3,756.57	$3,482.71	1.64	1.43	1.51	1.04	1.10
D0464	Tonganoxie	1,963	$3,739.70	$3,469.06	1.66	1.01	1.19	1.39	1.51
D0501	Topeka Public Schools	13,794	$3,717.47	$3,450.62	1.16	1.65	1.79	1.52	1.60
D0275	Triplains	65	$3,803.03	$3,520.28	1.46	2.61	1.23	1.13	1.13

D0429	Troy Public Schools	333	$3,879.52	$3,582.15	1.67	1.24	1.19	1.01	1.03
D0202	Turner-Kansas City	4,110	$3,760.81	$3,495.38	1.21	1.11	1.71	1.25	1.33
D0240	Twin Valley	603	$3,913.65	$3,609.75	1.71	1.08	1.32	1.74	1.75
D0463	Udall	311	$3,757.44	$3,483.41	1.73	1.27	1.32	1.03	1.13
D0214	Ulysses	1,758	$3,729.60	$3,460.90	1.79	1.00	1.49	1.02	1.05
D0235	Uniontown	442	$3,905.05	$3,602.79	1.79	1.15	1.44	1.02	1.05
D0262	Valley Center Pub Sch	2,879	$3,807.23	$3,533.53	1.54	1.05	1.27	1.29	1.31
D0338	Valley Falls	381	$3,664.73	$3,408.43	1.66	1.20	1.29	1.29	1.36
D0498	Valley Heights	401	$3,866.25	$3,571.41	1.79	1.18	1.37	1.18	1.15
D0380	Vermillion	578	$3,861.51	$3,567.58	1.77	1.09	1.18	1.23	1.32
D0432	Victoria	288	$3,880.16	$3,582.67	1.70	1.30	1.10	0.88	0.95

D0329	Wabaunsee	446	$3,837.81	$3,557.73	1.71	1.15	1.20	1.24	1.31
D0272	Waconda	325	$3,641.97	$3,366.39	1.74	1.25	1.34	1.11	1.05
D0208	Wakeeney	387	$3,741.41	$3,470.44	1.81	1.19	1.18	1.24	1.28
D0241	Wallace County Schools	202	$3,695.88	$3,433.62	1.53	1.47	1.28	1.35	1.33
D0320	Wamego	1,533	$3,719.46	$3,452.69	1.65	1.00	1.16	1.27	1.34
D0108	Washington Co. Schools	340	$3,866.29	$3,571.45	1.76	1.24	1.35	0.93	1.05
D0353	Wellington	1,622	$3,720.66	$3,453.66	1.70	1.00	1.45	1.33	1.36
D0289	Wellsville	782	$3,758.64	$3,484.38	1.78	1.04	1.20	1.25	1.34
D0242	Weskan	104	$3,968.81	$3,654.36	1.41	2.00	1.24	1.35	1.44
D0282	West Elk	353	$3,956.33	$3,590.57	1.73	1.22	1.37	1.31	1.35
D0287	West Franklin	601	$3,706.73	$3,442.40	1.74	1.08	1.33	1.63	1.66

D0106	Western Plains	107	$3,557.61	$3,306.23	1.73	1.97	1.64	0.82	0.92
D0292	Wheatland	110	$3,907.12	$3,604.47	1.62	1.94	1.17	0.99	1.12
D0259	Wichita	50,566	$3,682.95	$3,422.86	1.24	1.97	1.76	1.29	1.36
D0465	Winfield	2,227	$3,751.82	$3,478.87	1.73	1.02	1.48	1.32	1.36
D0366	Woodson	464	$3,723.66	$3,456.09	1.72	1.14	1.48	1.22	1.22

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Endnotes

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[ii] *Mock v. State*, No. 91CV1009 at 8, (Shawnee County District Court, 1991).

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[vii] *Montoy v. State*, No. 99C1738, at 29 (Shawnee Co. Dist. Ct. Dec. 2, 2003).

[viii] *Montoy v. State*, No. 99C1738 at 11 (Shawnee Co. Dist. Ct. May 11, 2004).

[ix] *Montoy v. State*, 278 Kan. 769 at 9 (2005) (*Montoy II*).

[x] *Id*. 774.

[xi] Long (2016).

[xii] *Gannon v. State*, 298 Kan. 1107 (2014) (*Gannon I*).

[xiii] *Id.* 1170 (citing *Rose*, 790 S.W.2d at 212).

[xiv] *Id.* at 67-68.

[xv] *Id.* at 69 (quoting *U.S.D. 229*).

[xvi] *Id.* 1175.

[xvii] *Id.* at 80.

[xviii] *Gannon v. State*, No. 2010CV1569 at 114-115 (Shawnee Co. Dist. Ct. Dec 30, 2014).

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[xx] *Gannon v. State*, No. 2010CV1569 at 7 (Shawnee Co. Dist. Ct. June 26, 2015).

[xxi] *Gannon v State*, No. 113,267 (Kan. Sup. Ct. Order July 24, 2015).

[xxii] *Gannon v. State*, 303 Kan. 682, 720, 726 (2016) (*Gannon II*).

[xxiii] *Id.* 741.

[xxiv] *Gannon v. State*, 304 Kan. 490, 493 (2016) (*Gannon III*).

[xxv] *Gannon v. State*, No. 113, 267 (Kan. Sup. Ct. Order June 28, 2016).

[xxvi] *Gannon v. State*, No. 113,267 at 7 (March 2, 2016) (*Gannon IV*).

[xxvii] *Id.*

[xxviii] *Id.* at 81.

[xxix] Kansas Legislative Research Dept (2017).

[xxx] *Gannon v. State*, No. 113,267 at 78 (Kan. Sup. Ct. Oct. 2, 2017) (*Gannon V*).

[xxxi] K.S.A. 72-8801 and L. 2017, ch. 95, § 91.

[xxxii] *Gannon V* at 59-60.

[xxxiii] *Id.* at 56-57.

[xxxiv] *Id.* at 67.

[xxxv] *Id.* at 70.

[xxxvi] *Id.* at 73-75.

[xxxvii] *Id.* at 18.

[xxxviii] *Id.* at 24.

[xxxix] *Id.* at 25.

[xl] *Id.* at 30.

[xli] *Id.* at 28.

[xlii] *Id.* at 29.

[xliii] *Id.* at 5.

[xliv] *Gannon V* at 77-78.

[xlv] *Id*. Quoting *Gannon II*, 303 Kan. at 744 (quoting *Edgewood Independent School Dist. v. Kirby*, 804 S.W.2d 491, 498 [Tex. 1991]).

[xlvi] *Gannon V* at 80.

[xlvii] *Alabama Opinion of the Justice*, 624 So.2d 107, 165-66 (Ala. 1993); *Idaho Sch. for Equal Educ. Opportunity v. Evans*, 850 P.2d 724, 734 (Idaho 1993); *McDuffy v. Secretary*, 615 N.E.2d 516, 554 (Mass. 1993); *Claremont Sch. Dist. v. Governor*, 703 A.2d 1353, 1359 (N.H. 1997); *Leandro v. State*, 488 S.E.2d 249, 255 (N.C. 1997); *Abbeville Cty. Sch. Dis. v. State*, 515 S.E.2d 535, 540 (S.C. 1999); *Lake View Sch. Dis. No. 25 v. Huckabee*, 91 S.W.3d 472, 485 (Ark. 2002); *Carrollton-Farmers Branch Indep. Sch. Dis. v. Edgewood Indep. Sch. Dist.*, 826 S.W.2d 489, 527-28 (Tex. 1992).

[xlviii] *Gannon I.*

[xlix] *Council for Better Education v. Collins*, No. 85-CI-1759 (Franklin County Circuit Court, Kentucky, October 14, 1988).

[l] Ky. Const. §183

[li] *Council for Better Education v. Wilkinson*, No. 85-CI-1759, slip op. at 4 (Franklin Cir. Ct., Oct. 14, 1988).

[lii] *Rose v. Council for Better Education*, 790 S.W.2d 186, 212-213 (1989).

[liii] *Id.* 197.

[liv] *Id.* 209-210.

[lv] *Id.* 215.

[lvi] *Id.*

[lvii] *Id.* 12.

[lviii] *Id.* 19.

[lix] *Id.* 13-14.

[lx] *Id.* 12.

[lxi] *Dupree v. Alma School District No. 30,* 279 Ark. 340, 651 S.W. 2d 90 (1983).

[lxii] *Dumas, E. Jim DuPree v. Alma School District No. 30*. *The Encyclopedia of Arkansas History & Culture*. Retrieved from http://www.encyclopediaofarkansas.net/encyclopedia/entry-detail.aspx?entryID=8465.

[lxiii] *Lake View Sch. Dist. No. 25 v. Huckabee*, 91 S.W.3d 484 (2002) (*Lake View III*), (citing Ark. Const. art. XIV, § 1).

[lxiv] *Id* 486.

[lxv] *Id.*, citing Ark. Act 917 of 1995, § 6(c-d).

[lxvi] *Id.* 487-88.

[lxvii] 1997 Ark. Acts 1108 (codified at Ark. Code Ann. § 6-15-1003(a) to (c)).

[lxviii] *Lake View III, 510.*

[lxix] *Id.*

[lxx] 2003 Ark. Acts 35 (codified at Ark. Code Ann. § 6-15-404(a) to (h)).

[lxxi] 2003 Ark. Acts 57 (codified at Ark. Code Ann. § 10-3-2101).

[lxxii] 2003 Ark. Acts 57 (codified at Ark. Code Ann. § 10-3-2002(a)).

[lxxiii] K.S.A. 2013 Supp. 72-1127, as amended by section 32 of 2014 House Bill No. 2506, published as section 32 of chapter 93 of the 2014 Session Laws of Kansas, to be codified at K.S.A. 2014 Supp. 72-1127

[lxxiv] K.S.A. § 72-1127 (2013)

[lxxv] Kansas SB 19, Sec. 43.

[lxxvi] Division of Learning Services. Kansas State Department of Education (2014). *Kansas Alignment to Rose Standards.* Topeka, KS.

[lxxvii] Ibid.

[lxxviii] Ibid.

[lxxix] K.S.A. §72-1101

[lxxx] Kansas Department of Education. September 2014. *Kansas Graduation Requirements: 2014-2015 School Year.* Topeka, KS.

[lxxxi] Kansas Department of Education. Submitted on September 21, 2017. *Revised State Template for the Consolidated State Plan.* Washington, DC.

[lxxxii] K.S.A. §72-1101

[lxxxiii] Kansas Department of Education. September 2014. *Kansas Graduation Requirements: 2014-2015 School Year.* Topeka, KS.

[lxxxiv] K.S.A. §72-1101

[lxxxv] Kansas Department of Education. September 2014. *Kansas Graduation Requirements: 2014-2015 School Year.* Topeka, KS.

[lxxxvi] Kansas Department of Education. Submitted on September 21, 2017. *Revised State Template for the Consolidated State Plan.* Washington, DC.

[lxxxvii] Kansas Department of Education. September 2014. *Kansas Graduation Requirements: 2014-2015 School Year.* Topeka, KS.

[lxxxviii] Kansas Department of Education. Submitted on September 21, 2017. *Revised State Template for the Consolidated State Plan.* Washington, DC.

[lxxxix] Kansas Department of Education. September 2014. *Kansas Graduation Requirements: 2014-2015 School Year.* Topeka, KS.

[xc] Selected from algebra I; geometry; algebra II; or any math course that has algebra II as a prerequisite

[xci] Including biology; advanced biology; chemistry; physics; earth-space science; principles of technology; with at least 1 unit in chemistry or physics.

[xcii] Including: (A) min. ½ unit of U.S. gov't; (B) min. of ½ unit of world history; world geography; or international relations; (C) min. of 1 unit of U.S. history; (D) not more than one unit of the following: anthropology; current social issues; economics; psychology; race and ethnic group relations; sociology; U.S. history; U.S. gov't.

[xciii] Kansas State Department of Education (2018). Kansas Consolidated State Plan for the Every Student Succeeds Act. U.S. Department of Education. Retrieved from http://www.ksde.org/Portals/0/ECSETS/ESEA/KSconsolidatedstateplan01182018_Approved.pdf. (*Kansas ESSA State Plan*)

[xciv] Special Committee on K-12 Student Success. KS Legis. Sess. November 10, 2015. (Testimony of Brad Neuenswander).

[xcv] Kansas Assessment Program. *Technical Manual 2017.* Retrieved from http://ksassessments.org/sites/default/files/documents/KAP_Technical_Manual_2017.pdf

[xcvi] Kansas Assessment Program. *Relating Kansas Assessment Program Scores to ACT Scores.* Retrieved from http://www.ksassessments.org/act.

[xcvii] *Kansas ESSA State Plan.* Appendix A. page 95.

[xcviii] *Kansas ESSA State Plan.* Appendix A. page 95.

[xcix] *Montoy v. State*, No. 92032 (S. Ct. Kan. July 28, 2006).

[c] Kansas Assessment Program. *Performance Levels.* Retrieved from http://www.ksassessments.org/scorereports#PerformanceLevels-Educators.

[ci] Kansas Assessment Program. *Cut Scores for KAP Summative Assessments.* Retrieved from http://ksassessments.org/sites/default/files/documents/KAP_summative_cut_scores.pdf

[cii] *Kansas ESSA state plan*. Appendix A. page 95.

[ciii] The most recent school finance reform put in place in Kansas, SB 19 provided "to fund the necessary supports and interventions for at-risk students, special education, and ELL students, the new funding formula in SB 19 provides additional funding for students in these groups. This includes raising the weighting for at-risk students from .456 to .484, the weighting recommended by the 2006 LPA cost study; authorizing $12 million more per year for special education than the prior law, for a total of $24 million more; and adjusting the weighting for ELL students to the greater of either the FTE enrollment multiplied by 0.395 (based on contact hours) or the actual enrollment in bilingual programs multiplied by 0.185.

[civ] Kansas State Department of Education (KSDE). September 2015. *Accounting Manual for all Unified School Districts.* Retrieved from http://www.ksde.org/Agency/Fiscal-and-Administrative-Services/School-Finance/Guidelines-and-Manuals. Direct link to the accounting manual: http://www.ksde.org/Agency/Fiscal-and-Administrative-Services/School-Finance/Guidelines-and-Manuals.

[cv] Kansas State Department of Education (KSDE). September 2015. *Accounting Manual for all Unified School Districts.* Retrieved from http://www.ksde.org/Agency/Fiscal-and-Administrative-Services/School-Finance/Guidelines-and-Manuals. Fund classification descriptions starting on page 6.

[cvi] Kansas State Department of Education (KSDE). September 2015. *Accounting Manual for all Unified School Districts.* Retrieved from http://www.ksde.org/Agency/Fiscal-and-Administrative-Services/School-Finance/Guidelines-and-Manuals. Function classification descriptions begin on page 14.

[cvii] Kansas State Department of Education (KSDE). September 2015. *Accounting Manual for all Unified School Districts.* Retrieved from http://www.ksde.org/Agency/Fiscal-and-Administrative-Services/School-Finance/Guidelines-and-Manuals. Object classification descriptions starting on page 30.

Technical Appendix D: School District Characteristics

Drawing from the findings discussed in Chapter 5 of this report, below is a list of each school district in Kansas that had sufficient data to generate an estimated General Fund revenue allocation for the current and subsequent four years. The numbers presented in columns 4-6 are expressed as decimals and when multiplied by 100 equal the percentages of the student population for those need categories.

Table 26. List of school district characteristics and index values by each Kansas school district

District ID	District Name	Total Enroll (#)	Percentage Poverty (%)	Percentage ELL (%)	Percentage Special Ed (%)	Teacher Cost Index
D0435	Abilene	1,635	0.36	0.01	0.17	1.30
D0387	Altoona-Midway	177	0.46	0.00	0.19	1.30
D0385	Andover	8,281	0.08	0.03	0.08	1.45
D0359	Argonia Public Schools	191	0.40	0.00	0.26	1.33
D0470	Arkansas City	2,912	0.60	0.17	0.22	1.30
D0220	Ashland	196	0.31	0.14	0.13	1.36
D0377	Atchison Co Comm Schools	527	0.40	0.01	0.19	1.39
D0409	Atchison Public Schools	1,743	0.55	0.01	0.22	1.35
D0511	Attica	172	0.34	0.00	0.23	1.16
D0437	Auburn Washburn	6,323	0.25	0.03	0.12	1.52

D0402	Augusta	2,295	0.33	0.01	0.14	1.41
D0348	Baldwin City	1,431	0.26	0.00	0.18	1.51
D0254	Barber County North	485	0.38	0.01	0.20	1.15
D0223	Barnes	445	0.24	0.11	0.15	1.27
D0458	Basehor-Linwood	2,549	0.12	0.01	0.13	1.36
D0508	Baxter Springs	1,022	0.53	0.04	0.17	1.37
D0357	Belle Plaine	641	0.32	0.00	0.18	1.40
D0273	Beloit	801	0.30	0.03	0.18	1.26
D0229	Blue Valley	22,640	0.05	0.03	0.10	1.56
D0384	Blue Valley	225	0.16	0.00	0.20	1.45
D0205	Bluestem	490	0.44	0.01	0.24	1.37
D0204	Bonner Springs	2,733	0.39	0.07	0.12	1.49
D0314	Brewster	148	0.37	0.00	0.18	1.06
D0459	Bucklin	239	0.43	0.02	0.18	1.40
D0313	Buhler	2,306	0.29	0.02	0.13	1.27
D0454	Burlingame Public School	299	0.34	0.02	0.25	1.44
D0244	Burlington	858	0.30	0.01	0.19	1.25

D0369	Burrton	246	0.46	0.02	0.17	1.41
D0360	Caldwell	241	0.41	0.00	0.14	1.36
D0436	Caney Valley	766	0.40	0.02	0.09	1.34
D0419	Canton-Galva	349	0.30	0.00	0.22	1.33
D0285	Cedar Vale	189	0.58	0.00	0.32	1.33
D0462	Central	316	0.48	0.02	0.24	1.34
D0288	Central Heights	559	0.53	0.01	0.18	1.33
D0112	Central Plains	531	0.34	0.00	0.18	1.34
D0397	Centre	480	0.14	0.00	0.10	1.21
D0413	Chanute Public Schools	1,851	0.52	0.03	0.15	1.28
D0361	Chaparral Schools	848	0.51	0.09	0.21	1.17
D0473	Chapman	1,093	0.34	0.00	0.13	1.34
D0284	Chase County	347	0.24	0.00	0.11	1.29
D0401	Chase-Raymond	160	0.58	0.03	0.26	1.31
D0286	Chautauqua Co Community	374	0.53	0.00	0.19	1.31
D0268	Cheney	797	0.22	0.00	0.12	1.43
D0247	Cherokee	489	0.45	0.00	0.17	1.34

D0447	Cherryvale	911	0.50	0.00	0.12	1.37
D0505	Chetopa-St. Paul	438	0.42	0.00	0.15	1.35
D0103	Cheylin	129	0.48	0.29	0.12	1.00
D0102	Cimarron-Ensign	655	0.35	0.21	0.14	1.44
D0375	Circle	1,971	0.19	0.01	0.11	1.41
D0379	Clay Center	1,363	0.31	0.00	0.20	1.24
D0264	Clearwater	1,154	0.23	0.00	0.18	1.49
D0224	Clifton-Clyde	316	0.29	0.00	0.17	1.19
D0445	Coffeyville	1,777	0.68	0.11	0.12	1.38
D0315	Colby Public Schools	886	0.27	0.06	0.15	1.07
D0493	Columbus	987	0.46	0.00	0.17	1.32
D0300	Comanche County	323	0.31	0.02	0.28	1.26
D0333	Concordia	1,094	0.34	0.03	0.16	1.23
D0356	Conway Springs	535	0.21	0.00	0.13	1.38
D0476	Copeland	96	0.31	0.41	0.05	1.46
D0479	Crest	223	0.43	0.02	0.16	1.27
D0332	Cunningham	160	0.29	0.03	0.16	1.37

D0232	De Soto	7,137	0.09	0.04	0.08	1.51
D0216	Deerfield	210	0.68	0.40	0.12	1.54
D0260	Derby	7,073	0.37	0.10	0.14	1.49
D0471	Dexter	145	0.32	0.00	0.19	1.35
D0482	Dighton	230	0.33	0.02	0.19	1.34
D0443	Dodge City	7,054	0.70	0.57	0.12	1.47
D0111	Doniphan West Schools	339	0.37	0.00	0.11	1.44
D0396	Douglass Public Schools	736	0.26	0.01	0.21	1.43
D0410	Durham-Hillsboro-Lehigh	599	0.27	0.03	0.17	1.26
D0449	Easton	609	0.24	0.00	0.16	1.42
D0490	El Dorado	1,968	0.45	0.01	0.20	1.35
D0283	Elk Valley	118	0.69	0.00	0.28	1.34
D0218	Elkhart	1,147	0.17	0.10	0.10	1.39
D0307	Ell-Saline	464	0.21	0.05	0.15	1.34
D0355	Ellinwood Public Schools	503	0.35	0.00	0.14	1.31
D0388	Ellis	473	0.24	0.00	0.17	1.44
D0327	Ellsworth	641	0.25	0.01	0.13	1.28

D0253	Emporia	4,598	0.48	0.34	0.13	1.34
D0101	Erie-Galesburg	525	0.49	0.01	0.18	1.35
D0491	Eudora	1,736	0.29	0.01	0.16	1.51
D0389	Eureka	661	0.52	0.01	0.14	1.18
D0310	Fairfield	286	0.52	0.06	0.18	1.31
D0492	Flinthills	273	0.32	0.00	0.20	1.31
D0234	Fort Scott	1,881	0.50	0.01	0.13	1.34
D0225	Fowler	150	0.37	0.03	0.19	1.44
D0484	Fredonia	682	0.44	0.00	0.14	1.34
D0249	Frontenac Public Schools	940	0.31	0.01	0.10	1.34
D0495	Ft Larned	943	0.42	0.02	0.23	1.31
D0207	Ft Leavenworth	1,681	0.04	0.04	0.13	1.38
D0499	Galena	849	0.53	0.01	0.17	1.35
D0457	Garden City	7,701	0.60	0.47	0.12	1.54
D0231	Gardner Edgerton	5,914	0.23	0.02	0.16	1.52
D0365	Garnett	992	0.36	0.00	0.17	1.35
D0475	Geary County Schools	7,802	0.40	0.09	0.15	1.35

D0248	Girard	1,024	0.39	0.02	0.12	1.41
D0265	Goddard	5,679	0.18	0.04	0.15	1.49
D0411	Goessel	273	0.22	0.02	0.16	1.29
D0316	Golden Plains	180	0.57	0.18	0.23	1.12
D0352	Goodland	939	0.38	0.12	0.13	1.03
D0281	Graham County	365	0.34	0.00	0.21	1.32
D0428	Great Bend	2,928	0.58	0.26	0.14	1.36
D0200	Greeley County Schools	251	0.37	0.29	0.16	1.28
D0291	Grinnell Public Schools	82	0.35	0.00	0.13	1.18
D0440	Halstead	771	0.33	0.03	0.15	1.39
D0390	Hamilton	60	0.47	0.00	0.22	1.25
D0312	Haven Public Schools	892	0.31	0.06	0.13	1.27
D0474	Haviland	104	0.32	0.00	0.19	1.23
D0489	Hays	3,177	0.32	0.07	0.17	1.50
D0261	Haysville	5,648	0.46	0.04	0.16	1.52
D0468	Healy Public Schools	67	0.54	0.21	0.22	1.34
D0487	Herington	487	0.49	0.00	0.21	1.29

D0460	Hesston	802	0.17	0.04	0.09	1.42
D0415	Hiawatha	933	0.41	0.01	0.17	1.37
D0227	Hodgeman County Schools	292	0.25	0.06	0.16	1.39
D0431	Hoisington	753	0.44	0.01	0.17	1.40
D0363	Holcomb	1,018	0.45	0.17	0.09	1.58
D0336	Holton	1,128	0.34	0.03	0.12	1.44
D0412	Hoxie Community Schools	392	0.26	0.00	0.19	1.19
D0210	Hugoton Public Schools	1,047	0.50	0.37	0.08	1.41
D0258	Humboldt	805	0.28	0.00	0.11	1.26
D0308	Hutchinson Public Schools	4,677	0.55	0.06	0.19	1.30
D0446	Independence	2,137	0.51	0.03	0.19	1.44
D0477	Ingalls	212	0.27	0.13	0.02	1.42
D0448	Inman	431	0.20	0.00	0.15	1.29
D0257	Iola	1,305	0.50	0.00	0.19	1.23
D0346	Jayhawk	577	0.49	0.02	0.15	1.31
D0339	Jefferson County North	464	0.23	0.00	0.19	1.50

D0340	Jefferson West	861	0.21	0.00	0.16	1.42
D0500	Kansas City	21,937	0.78	0.40	0.13	1.54
D0321	Kaw Valley	1,182	0.27	0.00	0.21	1.45
D0331	Kingman - Norwich	979	0.32	0.01	0.21	1.38
D0347	Kinsley-Offerle	349	0.45	0.18	0.21	1.35
D0422	Kiowa County	420	0.16	0.00	0.14	1.30
D0483	Kismet-Plains	708	0.65	0.67	0.11	1.50
D0395	LaCrosse	289	0.36	0.00	0.17	1.33
D0506	Labette County	1,574	0.46	0.00	0.15	1.41
D0215	Lakin	636	0.43	0.26	0.10	1.48
D0469	Lansing	2,698	0.21	0.02	0.17	1.34
D0497	Lawrence	11,969	0.28	0.09	0.13	1.54
D0245	LeRoy-Gridley	208	0.32	0.00	0.18	1.23
D0453	Leavenworth	3,873	0.49	0.02	0.16	1.37
D0243	Lebo-Waverly	428	0.30	0.01	0.17	1.30
D0467	Leoti	400	0.44	0.35	0.16	1.39
D0502	Lewis	118	0.48	0.22	0.14	1.26

D0480	Liberal	4,971	0.71	0.64	0.11	1.48
D0298	Lincoln	353	0.41	0.01	0.16	1.34
D0444	Little River	315	0.21	0.02	0.19	1.31
D0326	Logan	150	0.31	0.03	0.16	1.23
D0416	Louisburg	1,720	0.15	0.02	0.09	1.36
D0421	Lyndon	436	0.28	0.00	0.15	1.44
D0405	Lyons	847	0.59	0.23	0.25	1.28
D0351	Macksville	236	0.48	0.36	0.17	1.24
D0386	Madison-Virgil	219	0.40	0.00	0.21	1.30
D0266	Maize	7,173	0.14	0.02	0.12	1.48
D0383	Manhattan-Ogden	6,388	0.29	0.07	0.17	1.44
D0456	Marais Des Cygnes Valley	220	0.49	0.00	0.29	1.48
D0408	Marion-Florence	521	0.33	0.00	0.19	1.20
D0256	Marmaton Valley	287	0.44	0.00	0.16	1.29
D0364	Marysville	747	0.31	0.01	0.20	1.29
D0342	McLouth	488	0.32	0.00	0.19	1.40
D0418	McPherson	2,404	0.29	0.02	0.19	1.37

D0226	Meade	408	0.27	0.05	0.18	1.43
D0219	Minneola	244	0.51	0.02	0.18	1.48
D0330	Mission Valley	497	0.28	0.00	0.21	1.46
D0371	Montezuma	236	0.37	0.12	0.08	1.43
D0417	Morris County	733	0.34	0.03	0.13	1.29
D0209	Moscow Public Schools	175	0.61	0.35	0.07	1.46
D0423	Moundridge	401	0.19	0.00	0.15	1.28
D0263	Mulvane	1,797	0.31	0.01	0.15	1.47
D0115	Nemaha Central	603	0.14	0.02	0.11	1.22
D0461	Neodesha	697	0.48	0.01	0.12	1.38
D0303	Ness City	312	0.38	0.14	0.20	1.27
D0373	Newton	3,539	0.43	0.06	0.16	1.37
D0309	Nickerson	1,139	0.43	0.03	0.14	1.31
D0335	North Jackson	367	0.31	0.00	0.22	1.46
D0251	North Lyon County	395	0.44	0.00	0.14	1.29
D0239	North Ottawa County	616	0.32	0.00	0.20	1.35
D0246	Northeast	496	0.58	0.01	0.20	1.36

D0212	Northern Valley	146	0.39	0.00	0.16	1.19
D0211	Norton Community Schools	665	0.31	0.01	0.17	1.18
D0274	Oakley	409	0.38	0.00	0.17	1.16
D0294	Oberlin	340	0.32	0.00	0.13	1.15
D0233	Olathe	29,029	0.21	0.11	0.13	1.53
D0322	Onaga-Havensville-Wheaton	302	0.33	0.00	0.23	1.39
D0420	Osage City	685	0.35	0.01	0.20	1.43
D0367	Osawatomie	1,161	0.53	0.00	0.23	1.41
D0392	Osborne County	278	0.38	0.00	0.18	1.24
D0341	Oskaloosa Public Schools	612	0.41	0.00	0.21	1.40
D0504	Oswego	461	0.49	0.00	0.18	1.35
D0403	Otis-Bison	246	0.40	0.00	0.11	1.38
D0290	Ottawa	2,479	0.42	0.01	0.11	1.34
D0358	Oxford	444	0.25	0.01	0.15	1.41
D0269	Palco	88	0.27	0.00	0.18	1.39
D0368	Paola	2,029	0.27	0.01	0.14	1.38

D0399	Paradise	113	0.37	0.04	0.26	1.41
D0503	Parsons	1,314	0.60	0.01	0.17	1.37
D0496	Pawnee Heights	152	0.25	0.03	0.11	1.25
D0398	Peabody-Burns	262	0.47	0.00	0.22	1.20
D0343	Perry Public Schools	745	0.29	0.01	0.19	1.46
D0325	Phillipsburg	621	0.26	0.00	0.17	1.20
D0426	Pike Valley	223	0.40	0.02	0.20	1.17
D0203	Piper-Kansas City	2,186	0.13	0.04	0.09	1.48
D0250	Pittsburg	3,143	0.57	0.10	0.18	1.33
D0270	Plainville	340	0.28	0.00	0.18	1.44
D0344	Pleasanton	359	0.46	0.00	0.23	1.29
D0113	Prairie Hills	1,125	0.27	0.00	0.16	1.27
D0362	Prairie View	919	0.38	0.01	0.18	1.36
D0382	Pratt	1,229	0.40	0.08	0.14	1.21
D0311	Pretty Prairie	244	0.25	0.00	0.05	1.30
D0293	Quinter Public Schools	304	0.24	0.05	0.22	1.29
D0105	Rawlins County	335	0.33	0.10	0.18	1.08

D0206	Remington-Whitewater	515	0.29	0.07	0.14	1.37
D0267	Renwick	1,856	0.10	0.00	0.11	1.45
D0109	Republic County	515	0.41	0.00	0.20	1.15
D0378	Riley County	681	0.20	0.01	0.17	1.41
D0114	Riverside	642	0.45	0.00	0.24	1.49
D0404	Riverton	741	0.42	0.01	0.14	1.34
D0323	Rock Creek	1,043	0.22	0.01	0.14	1.46
D0107	Rock Hills	312	0.42	0.00	0.17	1.20
D0217	Rolla	134	0.34	0.28	0.13	1.41
D0394	Rose Hill Public Schools	1,616	0.22	0.02	0.13	1.46
D0337	Royal Valley	837	0.40	0.00	0.17	1.47
D0481	Rural Vista	297	0.35	0.02	0.22	1.30
D0407	Russell County	836	0.42	0.01	0.21	1.37
D0305	Salina	7,386	0.47	0.12	0.14	1.34
D0434	Santa Fe Trail	1,040	0.40	0.00	0.22	1.46
D0507	Satanta	307	0.59	0.50	0.09	1.47
D0466	Scott County	1,023	0.37	0.25	0.12	1.41

D0345	Seaman	3,807	0.28	0.01	0.16	1.50
D0439	Sedgwick Public Schools	479	0.31	0.00	0.14	1.42
D0450	Shawnee Heights	3,504	0.27	0.03	0.13	1.49
D0512	Shawnee Mission Pub Sch	27,333	0.28	0.12	0.09	1.56
D0372	Silver Lake	716	0.14	0.01	0.12	1.53
D0438	Skyline Schools	412	0.23	0.05	0.12	1.20
D0237	Smith Center	400	0.37	0.00	0.19	1.21
D0400	Smoky Valley	1,572	0.13	0.00	0.09	1.32
D0393	Solomon	316	0.38	0.00	0.19	1.35
D0255	South Barber	255	0.36	0.02	0.24	1.12
D0430	South Brown County	577	0.58	0.05	0.19	1.44
D0509	South Haven	208	0.36	0.00	0.23	1.42
D0306	Southeast Of Saline	697	0.18	0.00	0.14	1.28
D0334	Southern Cloud	207	0.46	0.00	0.20	1.30
D0252	Southern Lyon County	498	0.34	0.00	0.14	1.29
D0381	Spearville	356	0.27	0.05	0.12	1.42
D0230	Spring Hill	3,896	0.11	0.01	0.16	1.47

D0297	St Francis Comm Sch	283	0.30	0.09	0.14	1.05
D0350	St John-Hudson	328	0.39	0.16	0.20	1.25
D0349	Stafford	209	0.52	0.10	0.22	1.27
D0452	Stanton County	438	0.41	0.36	0.10	1.28
D0376	Sterling	508	0.28	0.01	0.14	1.33
D0271	Stockton	342	0.40	0.01	0.25	1.33
D0374	Sublette	466	0.49	0.33	0.08	1.47
D0299	Sylvan Grove	248	0.34	0.00	0.13	1.26
D0494	Syracuse	542	0.49	0.43	0.09	1.33
D0110	Thunder Ridge Schools	217	0.50	0.02	0.22	1.18
D0464	Tonganoxie	1,963	0.22	0.01	0.14	1.39
D0501	Topeka Public Schools	13,794	0.66	0.13	0.19	1.53
D0275	Triplains	65	0.28	0.00	0.23	1.18
D0429	Troy Public Schools	333	0.22	0.00	0.18	1.44
D0202	Turner-Kansas City	4,110	0.63	0.24	0.11	1.54
D0240	Twin Valley	603	0.34	0.00	0.15	1.37
D0463	Udall	311	0.33	0.00	0.18	1.24

D0214	Ulysses	1,758	0.50	0.39	0.11	1.38
D0235	Uniontown	442	0.45	0.00	0.12	1.34
D0262	Valley Center Pub Sch	2,879	0.30	0.02	0.14	1.45
D0338	Valley Falls	381	0.31	0.00	0.19	1.45
D0498	Valley Heights	401	0.37	0.01	0.17	1.29
D0380	Vermillion	578	0.22	0.00	0.12	1.27
D0432	Victoria	288	0.13	0.00	0.16	1.44
D0329	Wabaunsee	446	0.23	0.00	0.16	1.42
D0272	Waconda	325	0.36	0.00	0.17	1.20
D0208	Wakeeney	387	0.27	0.00	0.27	1.39
D0241	Wallace County Schools	202	0.29	0.02	0.17	1.16
D0320	Wamego	1,533	0.20	0.01	0.14	1.42
D0108	Washington Co. Schools	340	0.37	0.01	0.22	1.25
D0353	Wellington	1,622	0.46	0.01	0.23	1.36
D0289	Wellsville	782	0.23	0.00	0.17	1.27
D0242	Weskan	104	0.26	0.05	0.20	1.12
D0282	West Elk	353	0.46	0.00	0.28	1.25

D0287	West Franklin	601	0.42	0.00	0.28	1.29
D0106	Western Plains	107	0.56	0.25	0.18	1.31
D0292	Wheatland	110	0.25	0.00	0.10	1.22
D0259	Wichita	50,566	0.65	0.22	0.14	1.50
D0465	Winfield	2,227	0.46	0.04	0.18	1.33
D0366	Woodson	464	0.47	0.00	0.21	1.18

Technical Appendix E: School District Cost Estimates and Weights

Drawing from the findings discussed in chapter 5 of this report, below is a list of each school district in Kansas and the associated estimated base cost per pupil, gap closure per pupil cost, and associated index values for regional cost variation, overall size, and student demographic composition. These tables would apply for the latest year of financial data available which was the 2016-17 school year. The numbers presented in columns 4-6 are expressed as decimals and when multiplied by 100 equal the percentages of the student population for those need categories.

Table 27. School district base and gap closure cost estimates and index values

			Maintenance					Compensate	
District ID	District Name	Total Enroll	Base (95%)	Base (90%)	Regional Index	Economies of Scale Index	Student Need Index	Scenario A	Scenario B
D0435	Abilene	1,635	$3,757.95	$3,483.82	1.88	1.00	1.35	1.29	1.40
D0387	Altoona-Midway	177	$3,724.81	$3,425.46	1.79	1.56	1.47	1.28	1.42
D0385	Andover	8,281	$3,739.55	$3,468.94	1.46	1.35	1.00	1.35	1.35
D0359	Argonia Public Schools	191	$3,668.30	$3,385.17	1.69	1.51	1.34	1.37	1.49
D0470	Arkansas City	2,912	$3,691.10	$3,429.75	1.78	1.05	1.68	1.09	1.14
D0220	Ashland	196	$3,821.00	$3,542.61	1.77	1.49	1.30	1.09	1.21

D0377	Atchison Co Comm Schools	527	$3,929.73	$3,622.75	1.70	1.11	1.40	1.43	1.46
D0409	Atchison Public Schools	1,743	$3,694.44	$3,431.28	1.71	1.00	1.58	1.12	1.15
D0511	Attica	172	$3,639.13	$3,387.73	1.71	1.57	1.31	1.10	1.03
D0437	Auburn Washburn	6,323	$3,799.58	$3,527.01	1.37	1.24	1.21	1.22	1.27
D0402	Augusta	2,295	$3,718.73	$3,452.10	1.61	1.02	1.30	1.18	1.23
D0348	Baldwin City	1,431	$3,722.02	$3,454.77	1.54	1.00	1.23	1.18	1.20
D0254	Barber County North	485	$3,823.36	$3,536.73	1.65	1.13	1.37	1.33	1.33
D0223	Barnes	445	$3,757.56	$3,483.51	1.76	1.15	1.23	1.19	1.24
D0458	Basehor-Linwood	2,549	$3,764.68	$3,489.27	1.68	1.03	1.07	1.25	1.35
D0508	Baxter Springs	1,022	$3,915.11	$3,610.93	1.76	1.01	1.58	1.40	1.46
D0357	Belle Plaine	641	$3,720.23	$3,453.32	1.68	1.07	1.30	1.58	1.74

D0273	Beloit	801	$3,875.12	$3,578.59	1.77	1.04	1.28	1.45	1.43
D0384	Blue Valley	225	$3,720.60	$3,453.61	1.72	1.42	1.13	1.26	1.37
D0229	Blue Valley	22,640	$3,761.13	$3,486.39	1.15	1.97	1.00	1.31	1.31
D0205	Bluestem	490	$3,866.36	$3,571.50	1.71	1.13	1.42	1.15	1.13
D0204	Bonner Springs	2,733	$3,722.69	$3,455.30	1.41	1.04	1.38	1.16	1.27
D0314	Brewster	148	$3,835.54	$3,546.58	1.37	1.68	1.35	1.29	1.25
D0459	Bucklin	239	$3,524.15	$3,282.37	1.72	1.38	1.44	1.48	1.49
D0313	Buhler	2,306	$3,704.92	$3,440.93	1.83	1.02	1.26	1.29	1.29
D0454	Burlingame Public School	299	$3,667.20	$3,384.38	1.67	1.28	1.28	1.31	1.36
D0244	Burlington	858	$3,756.92	$3,482.99	1.86	1.03	1.28	1.37	1.32
D0369	Burrton	246	$3,682.50	$3,395.29	1.69	1.37	1.48	1.12	1.21

D0360	Caldwell	241	$3,690.79	$3,401.21	1.71	1.38	1.39	2.09	2.26
D0436	Caney Valley	766	$3,952.68	$3,641.32	1.72	1.04	1.33	0.95	0.91
D0419	Canton-Galva	349	$3,898.47	$3,597.47	1.72	1.23	1.26	1.26	1.44
D0285	Cedar Vale	189	$3,681.62	$3,394.67	1.77	1.51	1.43	0.77	0.86
D0462	Central	316	$3,902.09	$3,600.40	1.70	1.26	1.46	1.06	1.17
D0288	Central Heights	559	$3,689.73	$3,400.45	1.72	1.10	1.57	1.41	1.49
D0112	Central Plains	531	$3,775.15	$3,497.73	1.77	1.11	1.33	0.98	0.96
D0397	Centre	480	$3,956.33	$3,590.57	1.68	1.13	1.07	1.07	1.10
D0413	Chanute Public Schools	1,851	$3,723.43	$3,455.91	1.91	1.01	1.55	1.01	1.04
D0361	Chaparral Schools	848	$3,858.93	$3,565.50	1.74	1.03	1.56	1.08	1.05
D0473	Chapman	1,093	$3,764.03	$3,488.74	1.79	1.01	1.31	1.14	1.21

D0284	Chase County	347	$3,923.67	$3,617.85	1.74	1.23	1.18	1.08	1.20
D0401	Chase-Raymond	160	$3,761.06	$3,486.33	1.76	1.62	1.57	0.99	1.11
D0286	Chautauqua Co Community	374	$3,980.06	$3,663.46	1.78	1.20	1.56	1.04	1.14
D0268	Cheney	797	$3,722.22	$3,454.93	1.66	1.04	1.17	1.00	1.02
D0247	Cherokee	489	$3,813.08	$3,528.41	1.74	1.13	1.46	1.21	1.34
D0447	Cherryvale	911	$3,877.80	$3,580.75	1.71	1.02	1.50	1.10	1.24
D0505	Chetopa-St. Paul	438	$3,748.02	$3,461.57	1.76	1.16	1.42	1.46	1.61
D0103	Cheylin	129	$3,917.57	$3,612.92	1.24	1.79	1.49	1.36	1.40
D0102	Cimarron-Ensign	655	$3,892.72	$3,592.82	1.82	1.07	1.35	1.05	1.06
D0375	Circle	1,971	$3,812.65	$3,537.11	1.66	1.01	1.13	1.30	1.33
D0379	Clay Center	1,363	$3,474.29	$3,254.40	1.81	1.00	1.28	1.06	1.13

D0264	Clearwater	1,154	$3,846.49	$3,564.64	1.59	1.01	1.20	1.31	1.35
D0224	Clifton-Clyde	316	$3,800.66	$3,518.37	1.75	1.26	1.27	0.90	0.98
D0445	Coffeyville	1,777	$3,789.23	$3,517.99	1.66	1.00	1.79	1.24	1.32
D0315	Colby Public Schools	886	$3,394.97	$3,190.25	1.79	1.03	1.25	1.76	1.90
D0493	Columbus	987	$3,723.05	$3,455.59	1.82	1.02	1.47	1.08	1.20
D0300	Comanche County	323	$3,716.60	$3,450.38	1.68	1.25	1.20	1.31	1.28
D0333	Concordia	1,094	$3,394.97	$3,190.25	1.85	1.01	1.33	1.34	1.49
D0356	Conway Springs	535	$3,785.39	$3,506.02	1.70	1.11	1.17	1.30	1.40
D0476	Copeland	96	$3,394.97	$3,190.25	1.84	2.09	1.16	1.20	1.28
D0479	Crest	223	$3,692.32	$3,430.75	1.77	1.42	1.43	1.21	1.29
D0332	Cunningham	160	$3,850.85	$3,558.96	1.70	1.62	1.27	1.07	1.20

D0232	De Soto	7,137	$3,739.73	$3,469.09	1.38	1.28	1.01	1.21	1.26
D0216	Deerfield	210	$3,715.99	$3,449.89	1.76	1.45	1.75	0.61	0.76
D0260	Derby	7,073	$3,693.81	$3,431.94	1.35	1.28	1.37	1.13	1.18
D0471	Dexter	145	$3,665.97	$3,383.51	1.70	1.70	1.29	2.81	2.96
D0482	Dighton	230	$3,899.50	$3,598.31	1.76	1.40	1.32	1.15	1.18
D0443	Dodge City	7,054	$3,705.07	$3,441.05	1.57	1.28	1.66	1.18	1.26
D0111	Doniphan West Schools	339	$3,831.82	$3,543.57	1.71	1.24	1.33	1.33	1.38
D0396	Douglass Public Schools	736	$3,816.91	$3,531.51	1.66	1.05	1.23	1.25	1.33
D0410	Durham-Hillsboro-Lehigh	599	$3,685.13	$3,397.17	1.83	1.08	1.25	1.21	1.22
D0449	Easton	609	$3,794.21	$3,513.15	1.65	1.08	1.21	1.37	1.42
D0490	El Dorado	1,968	$3,711.46	$3,446.22	1.71	1.01	1.46	1.17	1.23

D0283	Elk Valley	118	$3,844.53	$3,553.85	1.78	1.87	1.68	1.34	1.54
D0218	Elkhart	1,147	$3,750.74	$3,477.99	1.80	1.01	1.11	1.14	1.28
D0307	Ell-Saline	464	$3,918.97	$3,614.05	1.70	1.14	1.19	1.22	1.38
D0355	Ellinwood Public Schools	503	$3,765.93	$3,499.25	1.73	1.12	1.32	1.20	1.18
D0388	Ellis	473	$3,927.69	$3,621.11	1.70	1.13	1.21	0.84	0.93
D0327	Ellsworth	641	$3,877.51	$3,580.52	1.80	1.07	1.21	1.25	1.28
D0253	Emporia	4,598	$3,747.89	$3,475.69	1.72	1.14	1.48	1.32	1.38
D0101	Erie-Galesburg	525	$3,765.46	$3,489.90	1.79	1.11	1.51	1.13	1.18
D0491	Eudora	1,736	$3,702.03	$3,438.60	1.47	1.00	1.26	1.38	1.44
D0389	Eureka	661	$3,846.40	$3,555.36	1.73	1.06	1.54	1.36	1.50
D0310	Fairfield	286	$3,956.33	$3,590.57	1.68	1.30	1.57	1.31	1.51

D0492	Flinthills	273	$3,876.71	$3,589.95	1.67	1.32	1.30	1.12	1.19
D0234	Fort Scott	1,881	$3,735.16	$3,465.39	1.81	1.01	1.50	1.17	1.23
D0225	Fowler	150	$3,837.04	$3,547.79	1.84	1.67	1.36	1.33	1.31
D0484	Fredonia	682	$3,883.98	$3,585.76	1.80	1.06	1.44	0.77	0.82
D0249	Frontenac Public Schools	940	$3,712.59	$3,447.13	1.72	1.02	1.25	0.97	1.03
D0495	Ft Larned	943	$3,730.15	$3,461.34	1.80	1.02	1.41	1.29	1.39
D0207	Ft Leavenworth	1,681	$3,583.00	$3,342.32	1.60	1.00	1.01	1.60	1.60
D0499	Galena	849	$3,736.02	$3,466.09	1.79	1.03	1.57	1.03	1.09
D0457	Garden City	7,701	$3,773.73	$3,504.71	1.57	1.31	1.59	1.36	1.53
D0231	Gardner Edgerton	5,914	$3,394.97	$3,190.25	1.40	1.21	1.20	1.18	1.19
D0365	Garnett	992	$3,881.82	$3,584.01	1.80	1.02	1.34	1.36	1.43

D0475	Geary County Schools	7,802	$3,633.77	$3,383.38	1.71	1.32	1.41	1.23	1.30
D0248	Girard	1,024	$3,394.97	$3,190.25	1.68	1.01	1.36	1.07	1.19
D0265	Goddard	5,679	$3,806.19	$3,532.27	1.40	1.20	1.16	1.43	1.53
D0411	Goessel	273	$3,711.63	$3,416.07	1.82	1.32	1.20	1.32	1.37
D0316	Golden Plains	180	$3,755.08	$3,481.50	1.58	1.55	1.63	1.10	1.13
D0352	Goodland	939	$3,883.16	$3,585.09	1.61	1.02	1.37	1.01	1.00
D0281	Graham County	365	$3,888.51	$3,589.42	1.76	1.21	1.31	1.17	1.28
D0428	Great Bend	2,928	$3,819.30	$3,543.33	1.70	1.05	1.65	1.51	1.61
D0200	Greeley County Schools	251	$3,654.40	$3,375.26	1.68	1.36	1.37	1.13	1.18
D0291	Grinnell Public Schools	82	$3,394.97	$3,190.25	1.59	2.28	1.33	1.24	1.31
D0440	Halstead	771	$3,741.86	$3,470.81	1.68	1.04	1.31	1.13	1.13

D0390	Hamilton	60	$4,113.33	$3,771.25	1.68	2.75	1.47	1.06	1.25
D0312	Haven Public Schools	892	$3,856.54	$3,566.41	1.75	1.02	1.28	1.30	1.32
D0474	Haviland	104	$3,394.97	$3,190.25	1.67	2.00	1.30	1.20	1.13
D0489	Hays	3,177	$3,708.94	$3,444.19	1.55	1.06	1.32	1.22	1.26
D0261	Haysville	5,648	$3,394.97	$3,190.25	1.31	1.20	1.48	1.17	1.24
D0468	Healy Public Schools	67	$3,906.32	$3,603.82	1.76	2.57	1.59	0.23	0.25
D0487	Herington	487	$3,714.95	$3,449.04	1.84	1.13	1.50	1.05	1.12
D0460	Hesston	802	$3,753.25	$3,480.02	1.62	1.04	1.09	1.22	1.21
D0415	Hiawatha	933	$3,697.14	$3,434.64	1.79	1.02	1.42	1.26	1.36
D0227	Hodgeman County Schools	292	$3,887.00	$3,588.19	1.81	1.29	1.23	1.20	1.29
D0431	Hoisington	753	$3,720.28	$3,453.36	1.70	1.04	1.45	1.28	1.25

D0363	Holcomb	1,018	$3,743.45	$3,472.10	1.67	1.01	1.42	0.83	0.92
D0336	Holton	1,128	$3,704.70	$3,440.76	1.63	1.01	1.30	1.44	1.46
D0412	Hoxie Community Schools	392	$3,834.20	$3,545.50	1.65	1.19	1.23	1.24	1.29
D0210	Hugoton Public Schools	1,047	$3,752.84	$3,488.33	1.80	1.01	1.45	1.12	1.22
D0258	Humboldt	805	$3,730.27	$3,461.43	1.84	1.04	1.22	1.15	1.26
D0308	Hutchinson Public Schools	4,677	$3,863.10	$3,573.61	1.83	1.14	1.61	1.31	1.37
D0446	Independence	2,137	$3,548.90	$3,300.02	1.61	1.01	1.55	1.12	1.13
D0477	Ingalls	212	$3,686.24	$3,397.96	1.83	1.45	1.10	0.92	0.94
D0448	Inman	431	$3,953.96	$3,642.36	1.73	1.16	1.17	1.44	1.57
D0257	Iola	1,305	$3,726.94	$3,458.74	1.94	1.00	1.53	1.04	1.12
D0346	Jayhawk	577	$3,856.57	$3,563.59	1.71	1.09	1.51	0.99	0.99

D0339	Jefferson County North	464	$3,721.28	$3,454.16	1.63	1.14	1.20	1.16	1.20
D0340	Jefferson West	861	$3,748.15	$3,475.90	1.62	1.03	1.18	1.15	1.12
D0500	Kansas City	21,937	$3,679.89	$3,420.69	1.17	1.97	1.91	1.33	1.39
D0321	Kaw Valley	1,182	$3,923.24	$3,617.51	1.66	1.00	1.23	1.09	1.16
D0331	Kingman - Norwich	979	$3,788.83	$3,508.80	1.70	1.02	1.30	1.18	1.21
D0347	Kinsley-Offerle	349	$3,874.51	$3,578.10	1.79	1.23	1.48	0.99	1.10
D0422	Kiowa County	420	$3,805.13	$3,499.86	1.74	1.17	1.12	0.97	1.03
D0483	Kismet-Plains	708	$3,677.24	$3,391.54	1.77	1.05	1.50	1.20	1.23
D0395	LaCrosse	289	$3,815.03	$3,539.92	1.77	1.30	1.35	1.12	1.18
D0506	Labette County	1,574	$3,757.27	$3,483.28	1.69	1.00	1.47	1.39	1.39
D0215	Lakin	636	$3,685.16	$3,424.95	1.76	1.07	1.41	1.03	1.08

D0469	Lansing	2,698	$3,775.74	$3,498.22	1.72	1.04	1.19	1.32	1.39
D0497	Lawrence	11,969	$3,742.54	$3,471.36	1.30	1.55	1.25	1.18	1.20
D0245	LeRoy-Gridley	208	$3,798.78	$3,516.85	1.77	1.46	1.30	1.35	1.37
D0453	Leavenworth	3,873	$3,789.90	$3,509.66	1.62	1.10	1.52	1.06	1.04
D0243	Lebo-Waverly	428	$3,708.44	$3,413.79	1.80	1.16	1.28	1.13	1.13
D0467	Leoti	400	$3,878.48	$3,581.31	1.81	1.18	1.45	1.20	1.19
D0502	Lewis	118	$3,394.97	$3,190.25	1.69	1.87	1.52	1.46	1.71
D0480	Liberal	4,971	$3,720.29	$3,457.82	1.55	1.16	1.60	1.11	1.23
D0298	Lincoln	353	$3,842.67	$3,552.34	1.78	1.22	1.41	0.91	0.97
D0444	Little River	315	$3,848.11	$3,573.81	1.74	1.26	1.18	1.44	1.45
D0326	Logan	150	$3,984.39	$3,666.97	1.68	1.67	1.29	1.16	1.26

D0416	Louisburg	1,720	$3,759.93	$3,485.43	1.70	1.00	1.08	1.23	1.32
D0421	Lyndon	436	$3,736.20	$3,466.23	1.66	1.16	1.25	1.35	1.45
D0405	Lyons	847	$3,684.38	$3,424.32	1.85	1.03	1.63	1.37	1.37
D0351	Macksville	236	$3,928.82	$3,622.02	1.69	1.39	1.50	1.06	1.14
D0386	Madison-Virgil	219	$3,990.45	$3,671.86	1.77	1.43	1.38	1.16	1.14
D0266	Maize	7,173	$3,742.63	$3,471.43	1.37	1.28	1.10	1.17	1.21
D0383	Manhattan-Ogden	6,388	$3,730.71	$3,466.03	1.52	1.24	1.28	1.32	1.34
D0456	Marais Des Cygnes Valley	220	$3,726.52	$3,458.40	1.68	1.43	1.40	1.13	1.08
D0408	Marion-Florence	521	$3,778.91	$3,500.78	1.82	1.11	1.31	1.20	1.18
D0256	Marmaton Valley	287	$3,922.52	$3,616.93	1.78	1.30	1.45	1.69	1.83
D0364	Marysville	747	$3,951.25	$3,640.16	1.82	1.05	1.29	1.08	1.11

D0342	McLouth	488	$3,734.67	$3,465.00	1.67	1.13	1.30	1.44	1.66
D0418	McPherson	2,404	$3,750.79	$3,478.03	1.68	1.02	1.27	1.11	1.10
D0226	Meade	408	$3,394.97	$3,190.25	1.82	1.18	1.25	1.57	1.66
D0219	Minneola	244	$3,721.08	$3,454.01	1.85	1.37	1.54	1.39	1.48
D0330	Mission Valley	497	$3,970.90	$3,656.06	1.71	1.12	1.24	1.17	1.36
D0371	Montezuma	236	$3,839.91	$3,550.11	1.80	1.39	1.31	1.33	1.26
D0417	Morris County	733	$3,874.43	$3,578.03	1.78	1.05	1.31	1.36	1.37
D0209	Moscow Public Schools	175	$3,690.08	$3,400.70	1.86	1.56	1.57	1.23	1.22
D0423	Moundridge	401	$3,730.57	$3,461.68	1.74	1.18	1.16	1.10	1.12
D0263	Mulvane	1,797	$3,736.69	$3,466.63	1.52	1.00	1.29	1.36	1.44
D0115	Nemaha Central	603	$3,819.75	$3,533.81	1.84	1.08	1.08	1.67	1.61

D0461	Neodesha	697	$3,915.05	$3,610.88	1.78	1.06	1.47	1.06	1.05
D0303	Ness City	312	$3,993.60	$3,674.42	1.73	1.27	1.40	0.85	0.89
D0373	Newton	3,539	$3,503.07	$3,291.83	1.67	1.08	1.44	1.19	1.28
D0309	Nickerson	1,139	$3,795.45	$3,523.64	1.75	1.01	1.42	1.13	1.23
D0335	North Jackson	367	$3,932.46	$3,624.96	1.71	1.21	1.28	1.24	1.34
D0251	North Lyon County	395	$3,759.59	$3,485.15	1.69	1.19	1.43	1.30	1.36
D0239	North Ottawa County	616	$3,911.67	$3,608.15	1.70	1.08	1.29	1.01	1.03
D0246	Northeast	496	$3,767.07	$3,491.20	1.70	1.12	1.63	1.27	1.36
D0212	Northern Valley	146	$3,735.60	$3,465.75	1.66	1.69	1.38	1.30	1.34
D0211	Norton Community Schools	665	$3,798.11	$3,524.48	1.74	1.06	1.30	1.14	1.18
D0274	Oakley	409	$3,775.97	$3,498.40	1.64	1.17	1.37	0.84	0.89

D0294	Oberlin	340	$3,895.54	$3,595.11	1.60	1.24	1.28	1.16	1.22
D0233	Olathe	29,029	$3,731.06	$3,462.08	1.19	1.97	1.18	1.20	1.23
D0322	Onaga-Havensville-Wheaton	302	$3,720.66	$3,453.67	1.71	1.28	1.29	1.60	1.68
D0420	Osage City	685	$3,724.10	$3,456.44	1.65	1.06	1.33	1.67	1.62
D0367	Osawatomie	1,161	$3,750.98	$3,478.19	1.64	1.01	1.54	1.15	1.16
D0392	Osborne County	278	$3,879.97	$3,582.51	1.72	1.31	1.37	1.37	1.32
D0341	Oskaloosa Public Schools	612	$3,881.53	$3,583.77	1.67	1.08	1.41	1.53	1.59
D0504	Oswego	461	$3,892.13	$3,592.34	1.71	1.14	1.51	1.02	1.13
D0403	Otis-Bison	246	$3,941.27	$3,632.09	1.80	1.37	1.36	1.18	1.22
D0290	Ottawa	2,479	$3,727.24	$3,458.98	1.72	1.03	1.38	0.99	1.01
D0358	Oxford	444	$4,074.50	$3,739.84	1.69	1.15	1.22	0.74	0.82

D0269	Palco	88	$3,696.38	$3,434.02	1.81	2.19	1.25	1.76	1.80
D0368	Paola	2,029	$3,739.63	$3,469.01	1.68	1.01	1.24	1.13	1.19
D0399	Paradise	113	$3,835.08	$3,546.21	1.84	1.92	1.32	1.47	1.67
D0503	Parsons	1,314	$3,709.38	$3,444.54	1.68	1.00	1.66	1.14	1.19
D0496	Pawnee Heights	152	$3,956.33	$3,590.57	1.68	1.66	1.20	2.02	2.22
D0398	Peabody-Burns	262	$3,739.10	$3,435.65	1.78	1.34	1.46	1.12	1.17
D0343	Perry Public Schools	745	$3,746.55	$3,474.60	1.62	1.05	1.27	1.35	1.38
D0325	Phillipsburg	621	$3,725.99	$3,457.97	1.77	1.08	1.24	1.35	1.51
D0426	Pike Valley	223	$3,722.06	$3,454.79	1.72	1.42	1.40	0.74	0.86
D0203	Piper-Kansas City	2,186	$3,394.97	$3,190.25	1.43	1.02	1.05	0.95	1.02
D0250	Pittsburg	3,143	$3,718.12	$3,451.61	1.74	1.06	1.65	1.16	1.21

D0270	Plainville	340	$4,024.17	$3,699.13	1.80	1.24	1.25	1.33	1.28
D0344	Pleasanton	359	$3,878.29	$3,581.15	1.74	1.22	1.44	1.25	1.33
D0113	Prairie Hills	1,125	$3,738.80	$3,468.33	1.80	1.01	1.25	1.33	1.28
D0362	Prairie View	919	$3,749.73	$3,477.17	1.71	1.02	1.38	1.48	1.58
D0382	Pratt	1,229	$3,722.06	$3,454.79	1.90	1.00	1.40	1.76	1.78
D0311	Pretty Prairie	244	$3,693.91	$3,432.03	1.70	1.37	1.10	1.54	1.60
D0293	Quinter Public Schools	304	$3,809.41	$3,525.44	1.74	1.28	1.20	1.17	1.14
D0105	Rawlins County	335	$3,846.93	$3,555.79	1.51	1.24	1.33	1.37	1.50
D0206	Remington-Whitewater	515	$3,762.64	$3,487.62	1.70	1.11	1.28	1.33	1.41
D0267	Renwick	1,856	$3,739.74	$3,469.09	1.63	1.01	1.04	1.54	1.54
D0109	Republic County	515	$3,678.93	$3,392.74	1.71	1.11	1.41	1.25	1.18

D0378	Riley County	681	$3,743.88	$3,472.45	1.67	1.06	1.17	1.58	1.59
D0114	Riverside	642	$3,394.97	$3,190.25	1.58	1.07	1.42	1.05	1.06
D0404	Riverton	741	$3,739.49	$3,468.90	1.81	1.05	1.41	1.48	1.61
D0323	Rock Creek	1,043	$3,843.18	$3,552.76	1.66	1.01	1.18	1.15	1.19
D0107	Rock Hills	312	$3,645.06	$3,368.60	1.67	1.27	1.42	1.51	1.45
D0217	Rolla	134	$3,734.30	$3,432.23	1.83	1.76	1.33	1.48	1.78
D0394	Rose Hill Public Schools	1,616	$3,394.97	$3,190.25	1.53	1.00	1.18	1.10	1.12
D0337	Royal Valley	837	$3,732.99	$3,463.64	1.64	1.03	1.40	1.25	1.26
D0481	Rural Vista	297	$3,685.21	$3,425.00	1.78	1.29	1.33	1.26	1.42
D0407	Russell County	836	$3,394.97	$3,190.25	1.79	1.03	1.42	1.14	1.22
D0305	Salina	7,386	$3,722.29	$3,454.98	1.73	1.30	1.51	1.22	1.28

D0434	Santa Fe Trail	1,040	$3,739.27	$3,468.72	1.64	1.01	1.38	1.11	1.11
D0507	Satanta	307	$3,667.42	$3,384.54	1.83	1.27	1.51	0.99	1.10
D0466	Scott County	1,023	$3,394.97	$3,190.25	1.80	1.01	1.36	1.01	1.11
D0345	Seaman	3,807	$3,817.64	$3,541.90	1.44	1.09	1.26	1.18	1.26
D0439	Sedgwick Public Schools	479	$3,930.25	$3,623.18	1.64	1.13	1.28	1.03	1.09
D0450	Shawnee Heights	3,504	$3,824.30	$3,547.08	1.48	1.08	1.24	1.33	1.38
D0512	Shawnee Mission Pub Sch	27,333	$3,764.90	$3,494.81	1.05	1.97	1.22	1.41	1.42
D0372	Silver Lake	716	$3,871.92	$3,576.00	1.57	1.05	1.09	1.12	1.16
D0438	Skyline Schools	412	$3,700.77	$3,437.57	1.61	1.17	1.20	1.18	1.16
D0237	Smith Center	400	$3,919.92	$3,614.83	1.70	1.18	1.36	1.44	1.56
D0400	Smoky Valley	1,572	$3,756.68	$3,482.80	1.72	1.00	1.06	1.26	1.35

D0393	Solomon	316	$3,937.06	$3,628.69	1.79	1.26	1.37	1.13	1.18
D0255	South Barber	255	$3,841.37	$3,551.29	1.59	1.35	1.32	1.70	1.82
D0430	South Brown County	577	$3,711.00	$3,445.85	1.75	1.09	1.65	1.31	1.38
D0509	South Haven	208	$3,697.24	$3,405.80	1.72	1.46	1.33	1.34	1.44
D0306	Southeast Of Saline	697	$3,894.44	$3,594.21	1.73	1.06	1.14	1.29	1.34
D0334	Southern Cloud	207	$3,939.54	$3,630.69	1.76	1.46	1.46	1.39	1.43
D0252	Southern Lyon County	498	$3,849.63	$3,546.11	1.70	1.12	1.31	1.31	1.28
D0381	Spearville	356	$3,704.03	$3,410.65	1.72	1.22	1.23	1.08	1.13
D0230	Spring Hill	3,896	$3,675.47	$3,417.11	1.50	1.10	1.08	1.37	1.39
D0297	St Francis Comm Sch	283	$3,690.53	$3,401.02	1.47	1.31	1.29	1.76	1.94
D0350	St John-Hudson	328	$3,910.49	$3,607.20	1.75	1.25	1.41	1.32	1.37

D0349	Stafford	209	$3,710.55	$3,415.29	1.76	1.46	1.56	1.27	1.35
D0452	Stanton County	438	$3,922.32	$3,616.76	1.72	1.16	1.36	1.15	1.20
D0376	Sterling	508	$3,904.04	$3,601.98	1.80	1.12	1.25	1.16	1.17
D0271	Stockton	342	$3,659.95	$3,404.56	1.78	1.23	1.36	1.15	1.27
D0374	Sublette	466	$3,766.73	$3,498.92	1.82	1.14	1.44	1.21	1.27
D0299	Sylvan Grove	248	$3,889.62	$3,590.32	1.70	1.37	1.31	1.67	1.68
D0494	Syracuse	542	$3,865.99	$3,571.21	1.75	1.10	1.42	1.05	1.17
D0110	Thunder Ridge Schools	217	$3,756.57	$3,482.71	1.64	1.43	1.51	1.04	1.10
D0464	Tonganoxie	1,963	$3,739.70	$3,469.06	1.66	1.01	1.19	1.39	1.51
D0501	Topeka Public Schools	13,794	$3,717.47	$3,450.62	1.16	1.65	1.79	1.52	1.60
D0275	Triplains	65	$3,803.03	$3,520.28	1.46	2.61	1.23	1.13	1.13

D0429	Troy Public Schools	333	$3,879.52	$3,582.15	1.67	1.24	1.19	1.01	1.03
D0202	Turner-Kansas City	4,110	$3,760.81	$3,495.38	1.21	1.11	1.71	1.25	1.33
D0240	Twin Valley	603	$3,913.65	$3,609.75	1.71	1.08	1.32	1.74	1.75
D0463	Udall	311	$3,757.44	$3,483.41	1.73	1.27	1.32	1.03	1.13
D0214	Ulysses	1,758	$3,729.60	$3,460.90	1.79	1.00	1.49	1.02	1.05
D0235	Uniontown	442	$3,905.05	$3,602.79	1.79	1.15	1.44	1.02	1.05
D0262	Valley Center Pub Sch	2,879	$3,807.23	$3,533.53	1.54	1.05	1.27	1.29	1.31
D0338	Valley Falls	381	$3,664.73	$3,408.43	1.66	1.20	1.29	1.29	1.36
D0498	Valley Heights	401	$3,866.25	$3,571.41	1.79	1.18	1.37	1.18	1.15
D0380	Vermillion	578	$3,861.51	$3,567.58	1.77	1.09	1.18	1.23	1.32
D0432	Victoria	288	$3,880.16	$3,582.67	1.70	1.30	1.10	0.88	0.95

D0329	Wabaunsee	446	$3,837.81	$3,557.73	1.71	1.15	1.20	1.24	1.31
D0272	Waconda	325	$3,641.97	$3,366.39	1.74	1.25	1.34	1.11	1.05
D0208	Wakeeney	387	$3,741.41	$3,470.44	1.81	1.19	1.18	1.24	1.28
D0241	Wallace County Schools	202	$3,695.88	$3,433.62	1.53	1.47	1.28	1.35	1.33
D0320	Wamego	1,533	$3,719.46	$3,452.69	1.65	1.00	1.16	1.27	1.34
D0108	Washington Co. Schools	340	$3,866.29	$3,571.45	1.76	1.24	1.35	0.93	1.05
D0353	Wellington	1,622	$3,720.66	$3,453.66	1.70	1.00	1.45	1.33	1.36
D0289	Wellsville	782	$3,758.64	$3,484.38	1.78	1.04	1.20	1.25	1.34
D0242	Weskan	104	$3,968.81	$3,654.36	1.41	2.00	1.24	1.35	1.44
D0282	West Elk	353	$3,956.33	$3,590.57	1.73	1.22	1.37	1.31	1.35
D0287	West Franklin	601	$3,706.73	$3,442.40	1.74	1.08	1.33	1.63	1.66

D0106	Western Plains	107	$3,557.61	$3,306.23	1.73	1.97	1.64	0.82	0.92
D0292	Wheatland	110	$3,907.12	$3,604.47	1.62	1.94	1.17	0.99	1.12
D0259	Wichita	50,566	$3,682.95	$3,422.86	1.24	1.97	1.76	1.29	1.36
D0465	Winfield	2,227	$3,751.82	$3,478.87	1.73	1.02	1.48	1.32	1.36
D0366	Woodson	464	$3,723.66	$3,456.09	1.72	1.14	1.48	1.22	1.22

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Estimating the Costs Associated with Achievement Expectations for Kansas Public Education Students

Study Results

Presentation to a Joint Session of the Education Finance Committees of the Kansas Legislature

March 19, 2018

Lori L. Taylor & Jason Willis

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Today's Objectives

- Briefly review methodology results
- Present findings from the cost model and cost estimates
- Take any questions or comments regarding the two objectives noted above

Agenda

- **Purpose & Study Aims**
- **Methods**
- **Rose Standards and Thresholds of Performance**
- **Review of Findings**
- **Question & Answer**

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Purpose & Study Aims

Study Aims

Estimate the level of spending required to produce a given outcome within a given educational environment.

- Investigate the ***linkage between the Rose standards and Kansas K-12 educational spending.***
- Explain the ***option or options*** to "produce an education system reasonably calculated to achieving those Rose standards."
- ***Focus on the structure of the Kansas school finance system*** as well as overall K-12 spending levels including forms of funding available to Kansas K-12 schools.

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Methods

Education Cost Function Steps

Data	• Request, obtain, and clean the data • **Product:** Validated data sets
Construct variables	• Construct variables • **Product:** Salary index, outcome measures, school-level spending
Regression analysis	• Explain how the **variation in expenditures** is related to **variation in outcomes, prices, demographics, and other cost factors**

Education Cost Function Steps (cont.)

Rose Standards	• Translate to various, existing Kansas laws and regulations • **Product:** Identify the associated, appropriate outcome measure and performance thresholds
Estimate Spending	▪ **Product**: predicted (a) **level of base spending** required to produce those outcomes and (b) **spending adjustments for student need, size, and regional cost**
Implementation	• Contextualize the spending estimates and possible implications for the Kansas public education system • **Product:** Various recommendations for implementation

Methods

Measuring current expenditures per pupil

- All spending (federal, state, and local) included **except:**
  - Transportation (function 2700)
  - Food Service (function 3100 and fund 24)
  - Community Service (function 3300)
  - Construction (functions 4000 – 4900 and object 700)
  - Debt Service (functions 5000 and 5100 and object 820)
  - Fund Transfer (function 5200)
  - Adult Education (funds 10 and 12)

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Assigning costs to the school-level

- Certified staff with actual salary and building assignment.
- Proportion of benefits for certified staff assigned to the building as well.
- Remaining current expenditures for the school district are pro-rated on a per-student basis and then assigned to each school.
- Special Education COOP spending allocated to the member districts according to their share of special education students in the co-op.
- Non-payroll special education expenditures are pro-rated on a per-special-education-student basis and then assigned.

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Food Service & Transportation Expenditures

Excluded from the analysis:

- Food Service: Heavily subsidized by the federal government or direct pay for meals; self-contained function of school districts
- Transportation: Does not vary on student demographic or outcome, i.e., associated with factors for the cost of education

FY2017 Spending	Food Service	Transportation
Total ($)	$236.7 million	$215.5 million
Per Pupil ($)	$483	$440

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Methods

Rose Standards to Performance Measure Thresholds

Rose Standard: standard set by the Court in *Gannon* rulings

↓

College & Career Skills; Accreditation: set broad student and system boundaries of ***expectations***

↓

Standards for the Schools; Grad Requirements: determine the ***offerings*** aligned to skills and accreditation

↓

Measures of Student Outcomes: ***progress towards expectations*** and insight on effectiveness of offerings

↓

Thresholds of Performance Statewide: ***determine aggregate bar of performance*** for Kansas to achieve

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Method to establish threshold of performance

Referenced both existing performance, plan documents, and historical performance:

- Investigate current performance for those school districts at the 90th percentile and above;
- Consider the state's ESSA plan that was developed by KSDE and signed by the Governor; and
- Historical patterns of growth and performance during periods in which the state was considered to be funded adequately.

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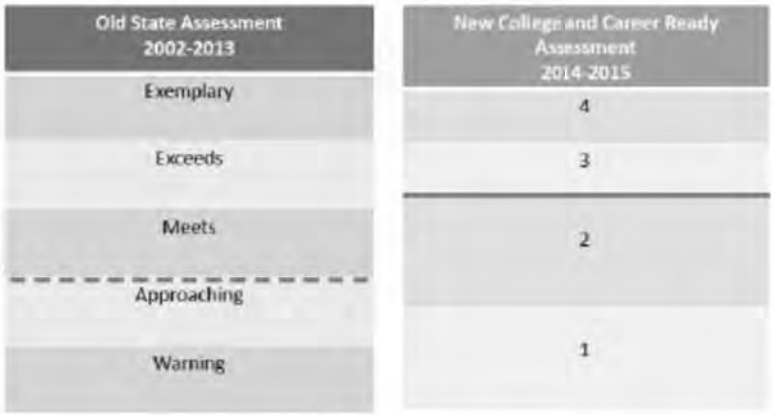
Methods

Relative comparison: old and new state assessment

'Meets' often cited in *Gannon* rulings is just above Level 2 in the new assessment; formed basis of Scenario A

Level 3 in new assessment tied to college ready; formed basis of Scenario B



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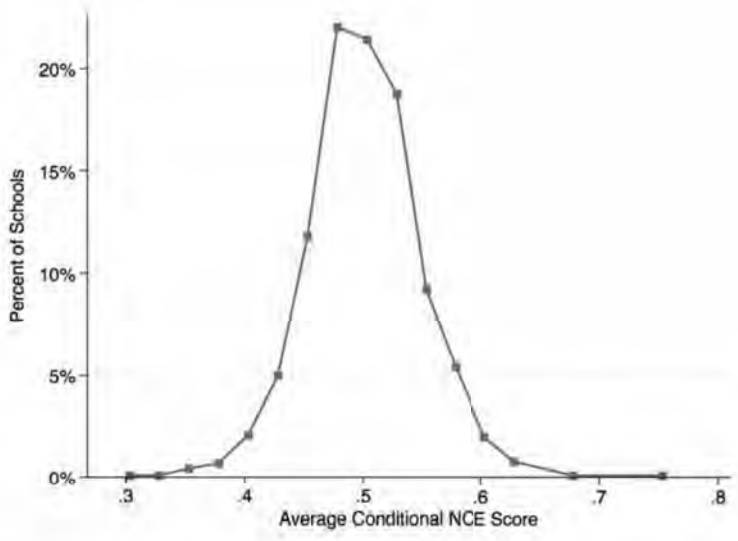
Distribution of average conditional NCE scores in 2016-17



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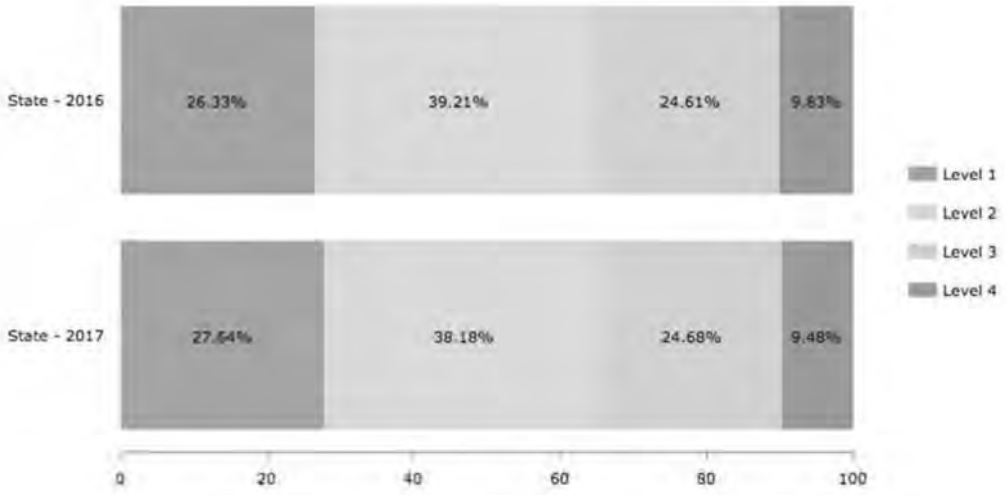
Methods

Kansas state assessment math performance, by level



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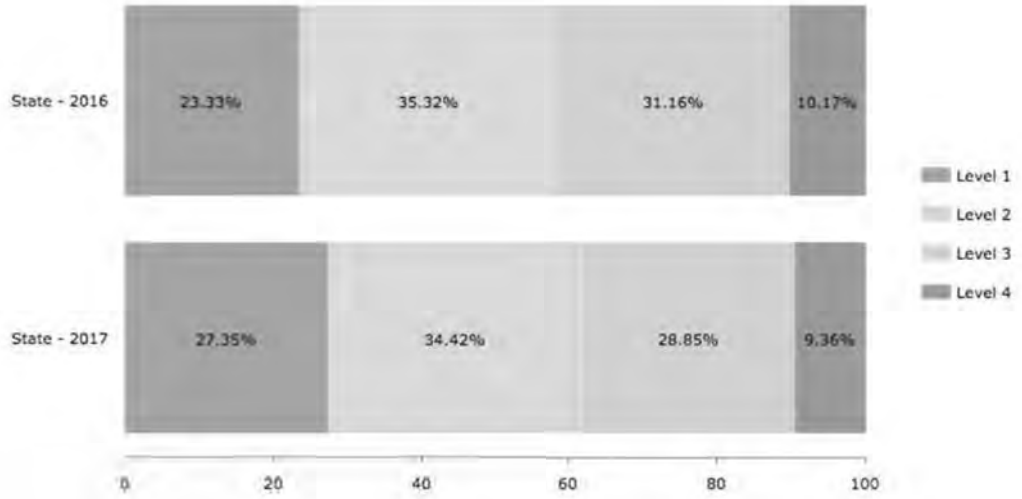
Source: Kansas State Department of Education. Data Central. Kansas Report Card 2016-17. Performance Level Reports. Subject: math. Retrieved March 18, 2018.

Methods

Kansas state assessment ELA performance, by level



Source: Kansas State Department of Education. Data Central. Kansas Report Card 2016-17. Performance Level Reports. Subject: ELA. Retrieved March 18, 2018.

Proposed graduation performance threshold

School Year	Graduation rate thresholds
2016-17	86.1
2017-18	87.9
2018-19	89.7
2019-20	91.5
2020-21	93.3
2021-22	95.0

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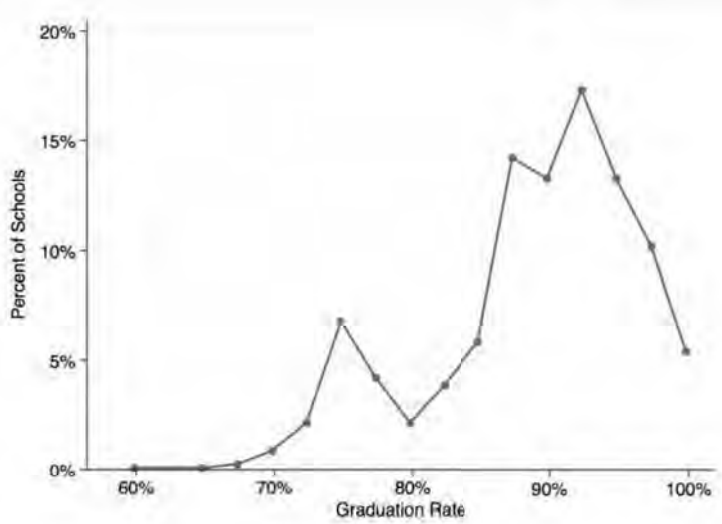
Methods

Distribution of school graduation rates in 2016-17



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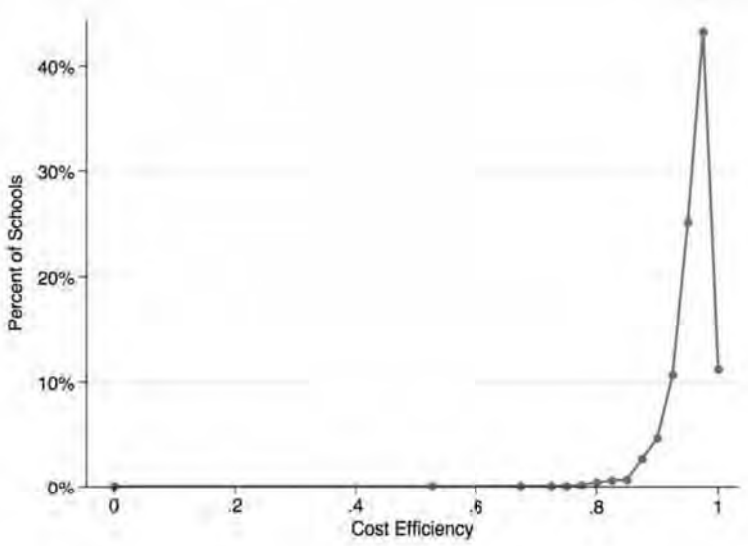
Study Findings

Most Kansas schools are highly efficient

Possible explanations:

- Decreased spending over last seven years combined with sustained effort to improve performance
- Systematically school districts are exceedingly good at the efficient use of their resources.



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Study Findings: Finding #2

Performance thresholds for base and compensatory costs

	ELA Assessment (Level 2+)	Math Assessment (Level 2+)	ELA Assessment (Level 3+)	Math Assessment (Level 3+)	Graduation Rate
Scenario A: Approaching on track	90%	90%			95%
Scenario B: On track			60%	60%	95%

- Scenario A establishes target of 90% proficient for Level 2 or better
- Scenario B establishes target of 60% proficient for Level 3 or better
- Both scenario A and B use a graduation rate of 95%

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Study Findings: Finding #2

Calculation of cost estimates for maintenance funding

Base Funding		Regional Cost Adjustment		Economies of Scale Adjustment		Student Need Adjustment
• Varies by composition of elementary, middle and high students in districts	×	• Accounts for differences in wage and sparsity	×	• Accounts for differences in size of the school district	×	• Need categories include low-income, English learners, and special education

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= **Maintenance funding**

Student need weights

Economically disadvantaged students

- Free lunch counts that are used to determine at-risk aid for Kansas was used in the analysis
- Weight is 1.89

English learner students

- Weight is 1.23 but drops as concentration increases

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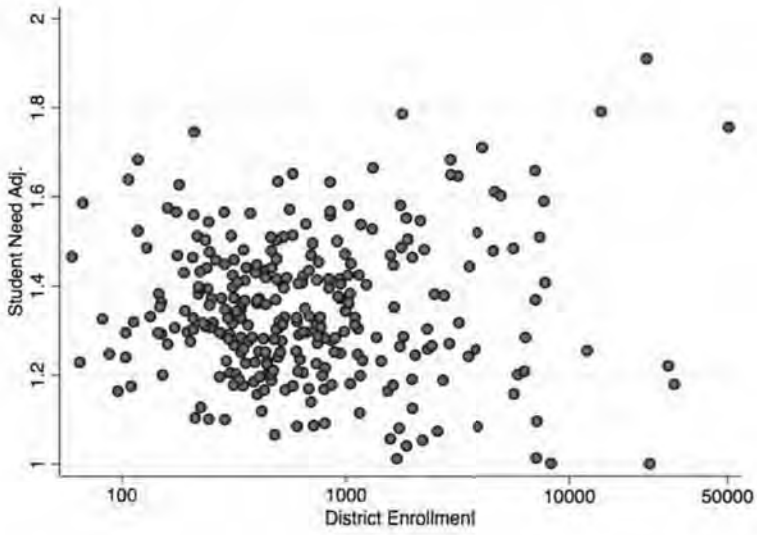
Study Findings: Finding #3

Student need weight distribution by district enrollment



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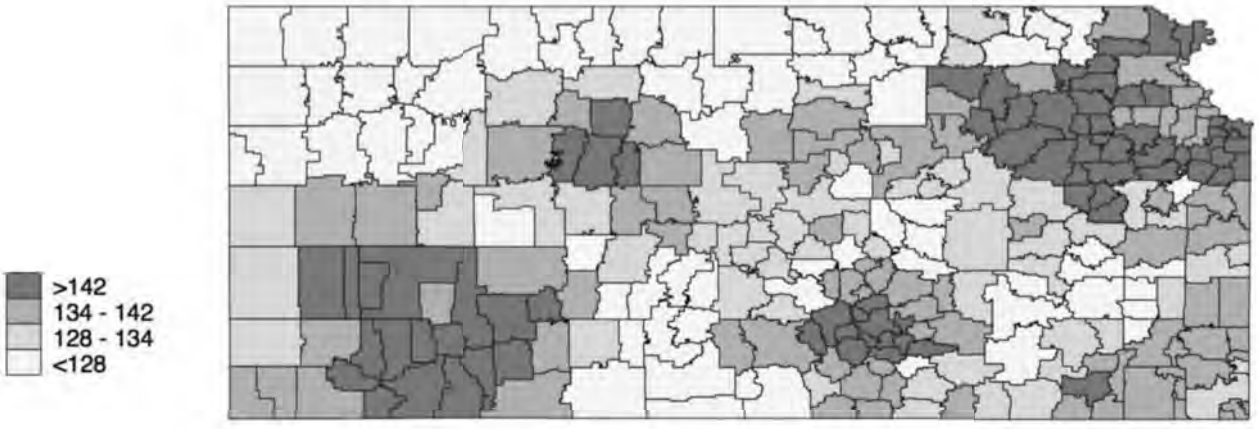
Study Findings: Finding #4

Map of Kansas Teacher Salary Index in 2016-17



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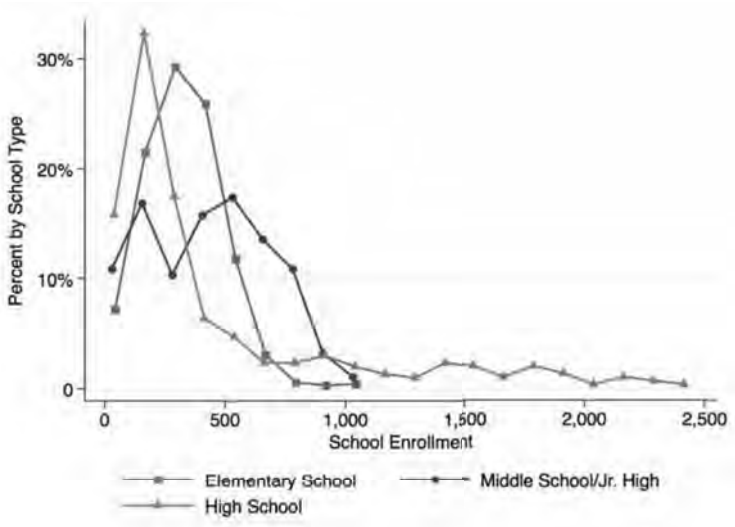
Study Findings: Finding #5

School enrollment in traditional school districts, 2016-17

- Kansas has a very large proportion of its schools that operate with less than 300 students per school.
- This is particularly true for high schools in which ~32% enroll approximately 200 students.



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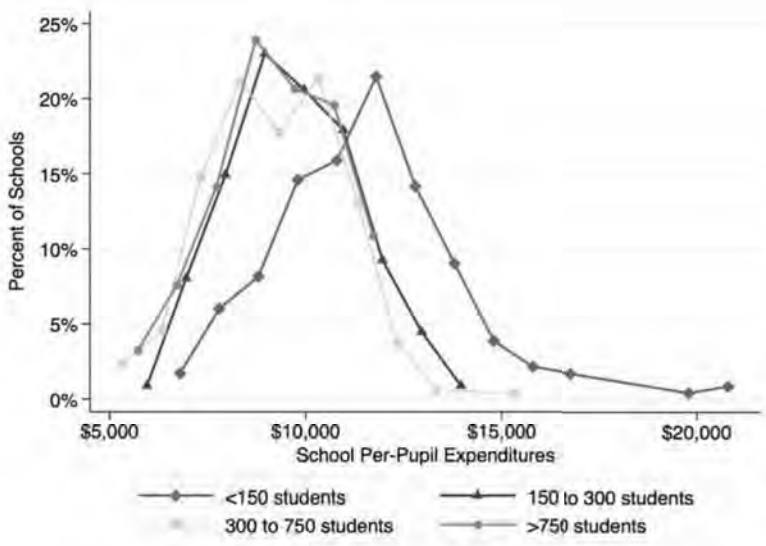
Distribution of per pupil spending by school size, 2016-17

- Kansas, due in part to the geographic dispersion, have higher per pupil school costs.
- This is particularly true of schools with less than 150 students.



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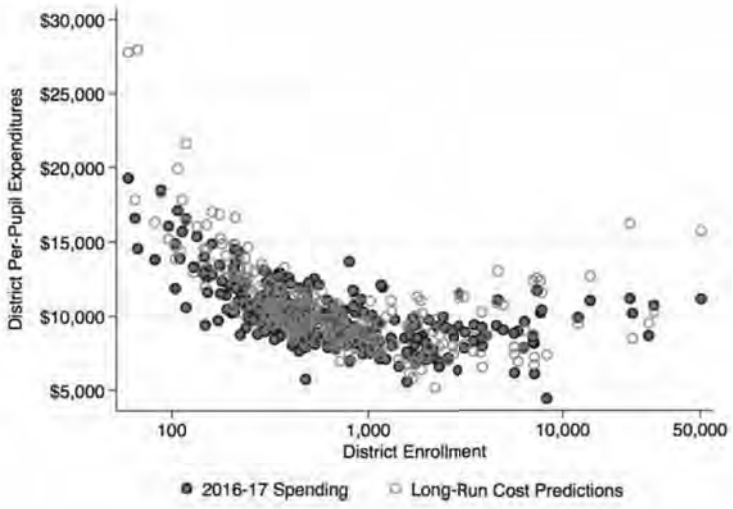
District per pupil spend compared to cost estimates

Comparing FY17 spending to generated cost estimates in the study the pattern changes from a flatter basin to a larger U-shape



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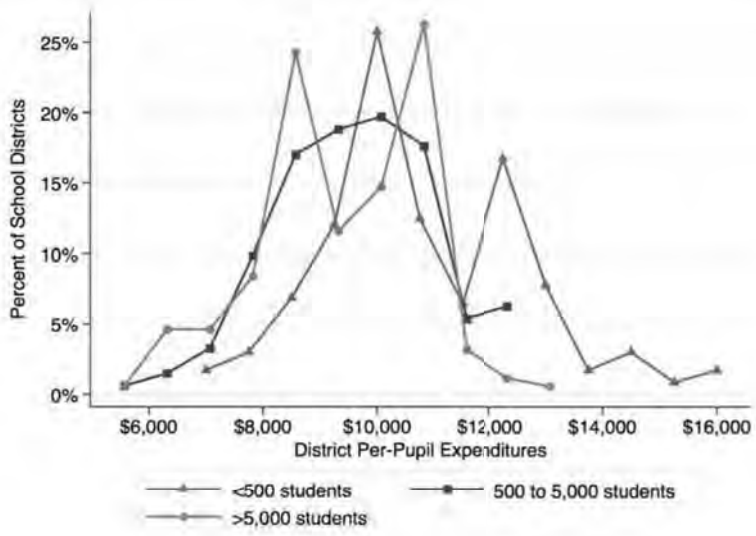
Study Findings: Finding #5

Distribution of per pupil spend by district size in 2016-17

The larger variation in per pupil spend may be influenced by the local revenue-raising ability of school districts relative to performance, price, and economies of scale.



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Study Findings: Finding #5

Cost estimates based on thresholds in the report

- Applies performance assumptions stated earlier.
- 2016-17 enroll in Kansas is 489,795

2016-17	Total estimated K-12 spending	Increase over current (%)	Per pupil ($)
Current spending levels	$4.652 billion	n/a	$9,497
Maintenance	$5.103 billion	9.7%	$10,419
Scenario A	$6.438 billion	38.4%	$13,144
Scenario B	$6.719 billion	44.4%	$13,717

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Other considerations for the cost estimates

- **Sensitivity analysis** when using headcount enrollment versus FTE enrollment figures

- **Adjustment of graduation rate threshold**; current performance goal is 95%

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Sensitivity analysis: Cost estimates using FTE enrollment

- Applies performance assumptions stated earlier.
- 2016-17 FTE enroll in Kansas is 459,650
- ***Slightly higher levels of estimated cost compared to headcount enrollment***

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2016-17	Total estimated K-12 spending	Increase over current (%)	Per pupil ($)
Current spending levels	$4.652 billion	n/a	$10,119
Maintenance	$5.125 billion	10.2%	$11,150
Scenario A	$6.490 billion	39.5%	$14,119
Scenario B	$6.788 billion	46.0%	$14,768

Study Findings: Finding #5

Cost estimates based on different grad rates

Graduation Rate	90%	92%	95%
Current spending levels	*$4.652 billion*	*$4.652 billion*	*$4.652 billion*
Maintenance	$4.737 billion	$4.880 billion	$5.103 billion
Scenario A	$5.978 billion	$6.158 billion	$6.438 billion
Scenario B	$6.239 billion	$6.426 billion	$6.719 billion

On average, for every 1% increase in the graduation rate, the approximate associated cost increase is 1.5%.

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Bringing forward the cost study estimates to 2018-19

	2016-17	Additional Funding for 2017-18	Additional Funding for 2018-19
Maintenance	$4.737 billion	+$115 million	+$315 million
Scenario A	$5.978 billion	+$145 million	+$398 million
Scenario B	$6.239 billion	+$152 million	+$415 million

The estimates above apply:

- Inflation factor using a 3-year average of the national CPI for all items, and
- Assumes a graduation rate of 90% in 2016-17 and 2017-18 and then increases to 91% in 2018-19.

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Study Findings: Finding #7

Considering phase-in of funding increases over time

Kansas schools are already highly efficient in the use of spending. The state should consider:

- Ensuring that Kansas schools can maintain their level of efficiency as additional resources are invested,
- Investments of large portions of funding may be better spent by extending the phase-in period.

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Addressing both 'how much' and 'how well'

Study Findings: Finding #8

Transparency and availability of data

- **Kansas nationally recognized for internal data systems**
  - With such small systems, enabling that function may help lift that burden off of very small school systems
- **Data Central is a place to start**
- **Additional information organized to enable comparisons**
- **Example: Texas Smart Schools**

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Study Findings: Finding #9

Pair support strategies with accountability measures

- The analytical and comparative techniques used by the Legislative Post Audit have applicability in other environments and forums;
- The insights reached – although mostly oriented towards compliance with the law – surface matters of process, culture and performance important for any organization to consider; and
- The school district's response represents one way in which to engage in an exchange

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Thank you!

Happy to take any questions that you may have.

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In The Matter Of:

State of Kansas v.

Senate Select Committee on Education Finance

March 19, 2018

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O F

J O I N T M E E T I N G

of the House K-12 Education Budget Committee

and

Senate Select Committee on Education Finance

Chair Fred Patton, Presiding

Held on the

19th day of March, 2018

Commencing at
12:10 p.m.

Kansas Statehouse
Supreme Courtroom
Southwest 8th & Van Buren Streets
Topeka, Kansas

COMMITTEE MEMBERS PRESENT:

Representative Helgerson
Representative Smith
Representative Hoffman
Representative Trimmer
Representative Huebert
Representative Vickrey
Representative Johnson
Representative Winn
Representative Jones
Senator Baumgardner
Representative Karleskint
Senator Denning
Representative Landwehr
Senator Estes
Representative Lusk
Senator Goddard
Representative Patton, Chair
Senator Hensley
Representative Rooker
Senator Kerschen
Representative Aurand
Senator Pettey
Representative Schwab

P R O C E E D I N G S

CHAIR BAUMGARDNER: Ladies and gentlemen, thank you for joining us today for the Joint Senate and House Education Funding Committee meeting. Like to start briefly by just thanking Megan Bottenberg of Cox Communications; Leslie Kaufman, Kansas Electric Cooperative; Rob Reynolds, AT&T Kansas, and Karen Browning from Capital Advantage for providing the lunches for our staff members and for our legislators today.

At this point in time we will start with a presentation that has been prepared by Dr. Lori Scott and Jason Willis for us and then we will -- as there are appropriate times, we will pause for questions.

So, Dr. Taylor, if you would like to begin, please.

DR. LORI TAYLOR: Thank you very much to the members. I very much appreciate you being here today to hear from us regarding a research project that we've been involved in for the past few months. So I'd like to turn to my colleague, Jason Willis, to set the

stage.

MR. JASON WILLIS: Good morning -- or afternoon, as it formally is.

So I want to talk briefly about today's objectives for this session. We want to review the methodology results from the cost function study that we conducted on behalf of the State of Kansas. We want to present our findings from the cost model and cost estimates and then take any questions or comments that you have regarding the two stated objectives above.

A little bit of our agenda for this hearing, purpose and study aims, methods. We'll talk about the Rose standards and thresholds of performance that were used in the study, a review of those findings and, as I mentioned before, any question and answer.

A little bit about the study aims. We presented this at our last visit to the -- to the State of Kansas looking to estimate the level of spending required to produce a given outcome within a given educational environment here in Kansas and in specifically investigating the linkage between the Rose standards in K-12 education spending in Kansas,

offering explanation around option or options to produce that education system reasonably calculated to the Rose standards and then to focus on the structure of the Kansas school finance system as well as its overall spending levels in consideration of how schools are -- are funded.

So one thing I just want to mention. Obviously, there are representatives or senators who received a revised report. There was a clerical error in the data tables that we produced moving from Excel over to the actual Word document as produced for the report. It has no underlying issue around the structure of the analysis, was simply a -- a clerical error.

So I want to talk for a moment just around some of the steps that we used for this cost function analysis. Here are the first three. In collecting the data, looking to obtain clean data and getting to a validated set of data sets, we wanted to be able to construct various variables that helped us in producing the cost estimates that we'll talk about a little bit later. These include things like the salary index or outcome measures and

the school level spending here in the State of Kansas.

The third and perhaps the most -- the most statistically heavy -- academically heavy concept is around regression analysis. Most simply, we are looking at being able to explain how the variation in expenditures here in the State of Kansas is related to variations in outcomes of our students, the prices associated with -- with running school systems in various locations in the state, the demographics of those students and other cost factors. From there we have the Rose standards estimating spending and implementation.

One of the things that the research team took on was to investigate the kind of -- the various existing Kansas laws and regulations, many of the court documents associated with the Gannon ruling and its identification of the Rose standards and identifying an appropriate associated outcome measure and associated performance thresholds and, from there, estimating the spending, so then predicting a base level of spending.

And we'll talk about how we arrived at

that base level of spending to produce a certain set of outcomes that then adjusts for other characteristics such as student need, makeup, if you're a low income student, the ELA student and special ed student, the size of the district -- so think economies of scale, if you're a very small district of if you're a very large district like Wichita -- and regional cost. Depending on where I live in the state, what it costs for me to live in that locality is going to differ across the -- the state.

And, finally, the implementation. I really wanted to contextualize these spending estimates and possible implications for the Kansas public education system. And so associated with the actual estimates themselves, which has been the focus of a lot of attention over the last 72 hours, we think it's very important for the State of Kansas to consider how those numbers are considered in context and how they may be implemented given our observations of how other states have performed their funding systems.

So I want to talk briefly about the

expenditures per pupil, the -- one of the kind of cruxes of the study. In this study here you can see listed the spending categories that have been excluded. We'll talk in a little bit about transportation and food service, but other things, particularly construction and debt service, are all things that fluctuate greatly and are based on factors that are separate and apart from what we were looking at in terms of the relationship between spending and the ongoing -- that ongoing spending and outcomes for students.

Kansas currently does not report school level per pupil expenditures. We worked with several of the stakeholders here in -- in Kansas and the Department of Education and other places to look at assigning some of those costs. You can see here in Kansas you have a file that basically lists every certified staff in the state. That associates them with a building assignment. It associates them with their years of experience and some other factors but notably for spending, their actual salary, which we can assign to the building. We took a proportion of their benefits, which

would include their retirement and health and welfare benefits and proportionally assigned those to the building as well and then took remaining current expenditures for the school district and prorated them on a per student basis to those assigned schools.

Special education was slightly more complicated. In Kansas you get -- you have special education co-ops that are basically an opportunity to consolidate spending for very small districts to serve special education students, and those members were basically assigned a proportion of the cost associated with those co-ops based on their share of special education students.

So here is a look at the -- their food service and transportation expenditures in particular. For the research team, for food service, for example, the exclusion was really heavily based on the fact that the federal government either directly pays for these meals or it's a self-contained function of the district, meaning the students will pay for their meals, parents will provide them money, which does not have much of a -- a function to

outcome.

Transportation, where we can see in the research literature offers that we don't see any variance on the student demographic or outcome, meaning that it has an impact on associated factors for the cost of education. Now, obviously, having a student that has a -- has a full stomach when they're walking into class or can get to the school is an important thing but, relative to the ways in which the study was designed, isn't appropriate, but we offer here observed 16/17 spending, both in aggregate for food service and transportation but also on a per pupil basis. So for those that are carrying this work forward in thinking about reforming the finance formula here in Kansas, these are offered as estimates of what would need to be added back to the estimates that we'll talk about a bit later.

So I want to talk a little bit about how we got from the Rose standards to the performance measure thresholds. So the Rose standards themselves were set out on the Gannon rulings. They originally came from the State of Kentucky in a 1989 court ruling, and Kansas

has taken them up in their -- their debates over Gannon over the last several years.

Working off of documents that were produced here in the State of Kansas around the new standards and accreditation, standards looking at college and career skills and accreditation, these set essentially broad student and system boundaries of expectations. It's what the state says to schools or school districts as here are the things that (a) we want to make sure that each individual student knows and understands as they graduate the system and, two, as we think about our institutions, our schools in particular, here are the things that they need to be able to provide in order to achieve the first thing that I said.

Further, Kansas statute offers standards for those schools and graduation requirements, so they outline different subjects that should be provided and the graduation requirements, so determining, if you will, the offerings that are aligned to those skills and accreditation. And from there we can measure -- we can look at and observe kind of measures of student

outcomes, so what are the -- what's been the progress towards those set of expectations, and provides us some insight on effectiveness of the various offerings that are currently being provided in Kansas schools. And based on those measures of student outcomes, we can then identify what might be the threshold of performance statewide on those various measures, could be ELA, it could be math, could be graduation rates, are the three measures that we used, fundamentally, as a part of the study.

So in Chapter 3 of the documents, following a -- a pretty lengthy discussion on the Rose standards, we go into a discussion around arriving at some of the thresholds of performance. And before I get into a little bit more detail I'm going offer the three kind of primary points of data and evidence that we looked at when arriving at some of those thresholds of performance.

So the first one was looking at current performance. All right. We have to be able to see that these levels of performance are possible and so, by looking at schools and

school districts in Kansas, we can see that across, you know, ELA, math and graduation rate that, you know, at the 90th percentile of performance there are schools and districts in large numbers that are achieving the levels that we were considering in the study.

The second is the state's ESSA plan. So this is a document that the State of Kansas, specifically from the Kansas State Department of Education, along with endorsement from the governor, produced. It was submitted originally to the US Department of Education in compliance with the federal Every Student Succeeds Act back in the fall. It was approved in mid January, so just a few months ago, and it provides some narrative about the expectations that Kansas and the Kansas public is holding for itself in regards to several of these measures, including ELA, math and graduation rate.

So they not only look -- not only identify what the overall threshold of performance should be. And they put in this -- in the plan itself they identified a 12-year trajectory to 2030, but they also provide a

schedule of targets. So year by year, from where the baseline currently is, what would need to be the levels of performance that statewide would need to be achieved in order to achieve the target that's identified in the ESSA plan.

And, finally, we looked at historical patterns of growth and performance, and we wanted to look at this specifically during a period in which -- in Kansas in the recent past there was some general agreement that the system had been funded. So these were the years between Montoy and Gannon in which the court had said to the state, you know, you're funding the public education system well. And over that five-year period of time we looked at the growth in performance on -- based on that old assessment, again, as a reference to think about the threshold of performance and what those growth patterns should be.

So one of the other things that is really important to consider in the context of these findings is to think about the difference between your old and new state assessment. Most every other state in the union has gone

through this transition from their old assessment system to some version or variant on what was known -- what is known as the common core state standards. Some states have adopted them in whole and said we're bringing these in and interpreting them. Others have taken pieces and parts of it. Kansas is somewhere in that mix.

And so what I offer -- we offer on the slide is a comparison between the performance levels. That is, based on a scale score of students, what is the score that those students need to be able to achieve in order to meet these various levels of performance.

And in the old state assessment -- you can see it was used between 2002 and 2013 -- there were five levels in the State of Kansas to be considered proficient. That dotted line just above, "Approaching," is the minimum threshold for meets. And you can see in the new college and career ready assessments where you currently have been administrating for the last couple of years, primarily in ELA and math -- you've got science online with history coming in the next year or so. You can see

that it's only four levels of performance. But you can see here that the scale score and where the minimum bar has been established is new and it's higher. And this is really reflective of the increase in rigor that, nationally, we expect of students and has clearly been incorporated into the work here in the State of Kansas.

So this is a chart that describes the distribution of the percent of schools for the average conditional NCE score. Simply, this is a measure of growth, meaning there's a couple of ways we understand in K-12 education to think about student performance. We can think about it as what are the percent of students that reach a certain threshold of performance, as I -- as I was describing in this previous slide.

Another and growing and -- and more popular way is to think about growth, how much progress are our students making from one year to the next. And what the introduction of this concept does around growth is it allows us to observe that where kids in previous testing systems may not have necessarily been

recognized for achieving a certain level of performance but can be recognized for their ability to grow.

So, just a basic example of this, if I am a student in the old testing system, there was at the very bottom a performance level of warning and over the course of the year I made tremendous progress but only missed the bar to meet by two scale score points, in this regard I wouldn't be recognized for making that level of growth. In this chart it allows us to recognize that student and to look at that in aggregate. So when we look at students over time, you know, measuring them from year to year on their state assessment, we can see their patterns of growth, which give us some insight into the ways in which Kansas is currently performing under a growth scenario relative to level of spending that you are committing to the K-12 system.

One of the other things that we looked at was, obviously, the overall performance of students in Kansas. And this is a -- a screen graph from the school -- the Kansas report card for 16/17, so you can see a comparison of

Kansas' performance over the last couple of years. And a couple of things that we can see here is that your bands for levels 3 and 4, which are the highest, basically hovers somewhere in the 33 to 35 percent range.

So just over a third of the students currently in the State of Kansas, relative to the standards that have been set and the assessments aligned to the standards, are meeting that level of -- of proficiency. And the same is true if we look at ELA as well, and what we see is either flat or slightly declining growth over just this one year.

Now, what I would say is that part of the work that we did was trying to incorporate as much and multiple years of data as possible to create stability and stability from the perspective of being able to make sure that when we were observing performance or any other measure, that we would have confidence in what we were seeing.

Another thing that we looked at was graduation performance and the thresholds that were established. You can see this is the schedule of growth. You're currently at 86.1

percent, the baseline for the most recent year that was reported. We can see that schedule of growth moving up to the 95, which the cost estimates in the study and which you have is based on. And we do have some additional information to present around graduation rates today.

Here you can see the distribution of those graduation rates in 16/17 with a -- with the percent of schools tailing off to the left as a -- as a proportion with their graduation rate with large proportions. You know, nearly 35, 40 and 50 percent of your schools that are achieving rates that are approaching 90 percent, if not over the 90 percent threshold, currently here in -- here in Kansas.

So I wanted to offer some -- some demonstration of some of the things that we looked at when we were considering these thresholds of performance. One thing to be -- to keep in mind is that for these education costs that is particular to this approach in particular, it's important that the state has agreement on what those levels of performance should be. The ESSA plan offers evidence of

that. The research team also looked at other places in which your historical performance might indicate what those thresholds of performance might be and is an important part of -- of any kind of cost function study and, certainly, this one as well.

So, with that, I'll take a pause and turn it over to -- to Lori to discuss our study findings.

CHAIR BAUMGARDNER: Actually, let's take a pause right here.

Are there questions committee members -- yes, Senator -- or Representative Rooker.

REPRESENTATIVE ROOKER: Thank you, Madam Chair. And thank you very much for the thoroughness of the study.

I want to drill into the -- the graduation rates. I'm looking at page 49 of the report we received on Friday and I'm understanding the ESSA plan goal of 95 percent is -- the year is 2030. So this table appears to be the progression for the next five years landing at 89 1/2 percent by 2021/22 school year.

So my question for you is, why is it that

the scenarios in the study in the -- the five years that we're look -- we're being given guidance on uses 95 percent as opposed to the -- the prorated rate, if you will?

DR. LORI TAYLOR: Okay. So thank you very much for the question. The study kind of comes in two parts. There is a -- an estimate of the cost for long-run maintenance after the state has transitioned to the performance thresholds that it set for itself, what are -- would it take to maintain -- to sustain that level of excellence from year to year. And so that what maybe inartfully was labeled, "maintenance," is the estimate for sustaining in the long run, after the transition period has finished, the performance threshold of the 95 percent graduation, which is the state's long-run goal, and an expectation that year to year all of the districts will accomplish the same sorts of progress with respect to tested performance. Okay?

But then there -- one has a transition, and over the transition period one is making progress towards that goal of the -- the long-run estimate at 95 percent graduation rate

and sustainable -- everybody's growth -- everybody's at grade level and progressing from one year to the next remaining at grade level.

So the -- the transition estimates which we'll present to you today would incorporate the glide path towards those long-run goals. But in the long run what the state has set for itself is that once the transition period has been -- has been completed, the -- we wanted to estimate what would be the long-run cost of continuing to maintain that level of excellence.

CHAIR BAUMGARDNER: Senator Bollier.

SENATOR BOLLIER: Madam Chair.

Along those lines -- thank you. When you looked at the school boards college and career ready, are you making the assumption that everybody is college and career ready or college or career ready, and is there a differentiation between those two things?

MR. JASON WILLIS: So thank you for the question. So a couple of things, I think, that references your question. So in the assessment that was built, in alignment with the college and career standards that you're

referencing, the performance thresholds are noted as college ready. There's no reference to career ready. So that's the first thing.

The second is that -- that the targets that were set, even at 95 percent, acknowledge that some students, you know, may not go on to some secondary pursuit. We see this in your post-secondary data, where a fair number of students don't go on to receive some type of post-secondary degree but they pursue, perhaps, a certificate that would allow them to pursue a career that provides them a living wage and kind of fell for the productivity to -- to society.

SENATOR BOLLIER: So if I can continue. So if we were going to tease this out further, if we looked at our own state and said our expectation is that whatever percentage at a certain school meets college ready versus career ready, we might come up with some different numbers. Is that a fair assessment?

MR. JASON WILLIS: So I would -- so I'll -- I'll start and then Lori can jump in. So the -- the graduation rate establishes that

bar of meeting that kind of minimum threshold to kind of receive that -- that certificate. There are other data that are collected, was not -- we -- we talk about this in the study, were not able to be incorporated into the -- into the work simply because of some of the challenges with some of the collection. Particularly in post-secondary, a lot of your community colleges aren't reporting, and that's where a lot of these students, you know, are going to pursue some type of post-secondary pursuit, but not necessarily a four-year college degree. So there could be, but there's no -- the way in which we built the cost model does not incorporate that work.

SENATOR BOLLIER: Okay.

DR. LORI TAYLOR: And if I -- if I might follow up a bit. The -- the question is really about where does one set Level 2 or Level 3 on the state's assessments and the -- it's clearly within the state's discretion to determine what is the appropriate goal threshold. What we tried to do is to estimate that which would be consistent with our interpretation of the -- the prior legal

decisions.

SENATOR BOLLIER: And when you say, "the state," you're meaning the state school board that is in charge of that decisionmaking?

DR. LORI TAYLOR: I'm actually thinking more broadly than that. The decisionmaking is clearly influenced by the legislature as well.

SENATOR BOLLIER: Okay.

DR. LORI TAYLOR: And so I -- I would not presume to tell you how to internally make that decision.

SENATOR BOLLIER: Thank you. Thank you.

CHAIR BAUMGARDNER: Representative Hubert.

REPRESENTATIVE HUBERT: Thank you, Madam Chairman.

You talked about the state assessments that were taken and looked at during that period between Montoy and Gannon.

Did -- did you look at other assessments that -- such as the national standard of the NAEP and ACT and -- and other types of assessments taken from that same time to try to

collaborate some of the state assessments work done then?

MR. JASON WILLIS: We did -- we did, obviously, take a -- a look at those data. They weren't incorporated into the final findings for a couple reasons. First, NAEP is a sample. One of the things that's really important when we think about a study like this is looking at the full population. We offer some discussion about the comparison of this type of an approach as opposed to a successful school's model earlier on in the -- in the study.

Second, in regards to ACT, the state assessment that we used inside of the study, there is actually some pretty extensive review of how the KAP, the -- the Kansas Assessment Program, is aligned with the ACT, specifically the assessments that you provided, ELA and math, to -- to the ACT. So by reference we did, but what we were -- we were focusing on the ELA and math assessments as a condition of they're relatively equivalent to what the ACT is -- is benchmarking and, as I mentioned, the difference between population versus sample for

NAEP and the state assessment.

CHAIR BAUMGARDNER: Majority Leader Denning.

MAJORITY LEADER SENATOR DENNING: Thank you, Madam Chair.

Just concentrating on Rose for a bit, reading your report and then looking at that last graph, it appears you've crossed -- in your -- in your analysis you've taken your approach to Rose and crosswalked it into the state's ESSA plan that's on file; is that correct?

MR. JASON WILLIS: Sorry -- sorry. Can you repeat your question?

MAJORITY LEADER SENATOR DENNING: From reading your report and then looking at some of the graphics that you've showed us, your approach to Rose is to crosswalk it into -- and match it up into certain segments of the state's ESSA plan that's on file with the federal government?

MR. JASON WILLIS: No, that's not entirely correct.

MAJORITY LEADER SENATOR DENNING: What is incorrect about it?

MR. JASON WILLIS: So I talked about this earlier. It was one of three areas of reference that we made in establishing the thresholds of performance. So the ESSA plan was one, but we also looked at existing performance here in the State of Kansas for those schools and districts that were performing, excuse me, at higher levels on the distribution of those assessments. We also looked at historical levels of performance and growth rates that referenced a prior question in the years between Montoy and Gannon.

MAJORITY LEADER SENATOR DENNING: But, having said that, if you -- if you go back and -- and read your report and look at some of the other graphics, you're -- you're fairly matching up your approach to Rose inside of our ESSA plan. I see no deviation.

MR. JASON WILLIS: Yeah. So -- so if folks would turn to page 46. This provides a schedule that was outlined in the ESSA plan looking at your baseline 16/17 year through 21/22 and you can see where, that five-year period, the ending proficiency targets identified in the ESSA plan was 54.65 for ELA

and 49.15 for math. When we look at some of the growth performance during the Montoy and Gannon years, the rate of the growth was actually faster than what was identified in the ESSA state plan. So, again, we're looking at multiple factors, not just drawing from a -- a single document.

MAJORITY LEADER SENATOR DENNING: So, Madam Chair, I'm just skipping ahead.

I think it was your Scenario B. It appeared to me that you were looking at ESSA almost entirely when you came up with those projections.

MR. JASON WILLIS: Yeah, again, I -- we presented the -- the kind of various ways in which we looked at the -- establishing the targets and the back half of Chapter 3, after discussions of the Rose standards, provides the discussion of how we -- how we arrived at those targets.

MAJORITY LEADER SENATOR DENNING: All right. So, as far as developing Rose, you don't have a whole other standalone, noniterational set of standards for Rose, you're looking at some of the ESSA, possibly

some of the old No Child Left Behind to come up with -- with your projections?

DR. LORI TAYLOR: Well, there clearly is a significant influence of the ESSA plan on the identification of thresholds, because that's an articulation of the state's expectations for itself.

MAJORITY LEADER SENATOR DENNING: So let's just use an example of Iowa. Iowa has their ESSA plan on file and they're showing with their improvement plan between a half a percent and a full percent progress.

And if you were doing the same analysis for Iowa, would the -- would the spending be tied to that type of assumption?

DR. LORI TAYLOR: I'm not aware of what data are and are not available in Iowa, but the process would be the same, which is to identify what the state's definition for itself of -- of the -- the standard it's expecting itself to meet. Now, you have to translate through the observable information, which is the -- the KAP on the math and ELA scores. So you have to cross -- you do have to crosswalk from the thresholds to the goals for the

analysis, but the thresholds were not taken straight from ESSA. They were very much something that we identified through our more holistic review of the information.

MAJORITY LEADER SENATOR DENNING: Okay. So, using that line of reasoning, the State Board of Education can change the Rose and the calculations simply by changing their assumptions and goals, based on your approach to this?

MR. JASON WILLIS: So I think this goes back to an earlier discussion we were having about the importance of the state. And when Lori and I talk about the state we think about this holistically. This includes the governor, his executive branches, it includes the legislature, the State Board of Education and even, more generally, the populus to think about what is it for the State of Kansas that is acceptable levels of performance and at what pace.

And when there is consensus, and we have seen evidence of this in other states, across those various bodies of government there seems be a coalescence around the amount of resources

that needs to be invested in the system, the way in which the state interacts with school districts to monitor that performance, to hold them accountable, but also provide that level of support. And so, as we said earlier, this was our analysis -- independent, objective analysis of what we think those levels of performance should be but, certainly, the state has a very large hand to play in determining what those thresholds of performance should be.

MAJORITY LEADER SENATOR DENNING: Would it be a -- would it be a safe assumption that if our ESSA plan looked like Iowa, you would have a significantly different approach than you do in -- in this document that I have my left elbow on?

DR. LORI TAYLOR: Well, we definitely were informed by the -- the Montoy decision in terms of the kinds of levels of performance that the -- the court seemed willing to accept as consistent with the Rose standards. It's a bit challenging given the -- the relative lack of specifics with respect to those -- those performance standards.

So what we needed to do was look at what

has been interpreted by the courts as satisfactory and include from that information on what the state has signaled through its ESSA plan would be satisfactory and work to integrate those two pieces of information, but we definitely are purely advisory in this role. So it is our information to you that we believe these standards would be consistent with the Rose standards, but it's not our position that these are the only -- that you couldn't have a different opinion.

MAJORITY LEADER SENATOR DENNING: So my final question, Madam Chair, is any state that has an ESSA plan on file, be it -- I'll just use the word realistic and then use the word lofty.

With this type of analysis, you would chase those two descriptions?

MR. JASON WILLIS: Again, we -- we haven't reviewed all of the ESSA plans and looked at that relative to existing performance or patterns of growth but, again, you know, the ESSA plan was one of three different areas that we looked at in regards to establishing those performance thresholds.

DR. LORI TAYLOR: I also think you could interpret our Scenario A and Scenario B as trying to triangulate through two different paths to satisfying the Rose standards, one of which is more consistent with the position that seems to have been taken by the court, which would be to get to -- 90 percent of the students to the Level 2 or better and one of which is more consistent with our interpretation of the ESSA plan, which is getting 60 percent of the students to Level 3 or better.

CHAIR BAUMGARDNER: Representative Landwehr.

REPRESENTATIVE LANDWEHR: Thank you, Madam Chair.

In looking at current performance, did you look at what impact, if any, that the high influx of post-Montoy dollars had compared to pre-Montoy performance?

DR. LORI TAYLOR: Thank you for the question. We did not look at the -- we focussed the analysis on the two most recent years and, although we -- we did a lot of inspection of the other data, we did not do any

formal analysis of the relationship between spending and performance in the prior years.

REPRESENTATIVE LANDWEHR: All right. Thank you. And then the other is, when you talked earlier about, you know, being college ready, does that mean vo-techs and community colleges or just four-year?

MR. JASON WILLIS: That -- that definition, the language that's used there around college ready, is tied to your assessment program. So as they would identify the ability, the level of performance that's associated with -- with being college ready would be the definition we followed.

REPRESENTATIVE LANDWEHR: Thank you.

MR. JASON WILLIS: Sure.

CHAIR BAUMGARDNER: Representative Aurand.

REPRESENTATIVE AURAND: Thank you, Madam Chair.

Back to the factors that go into this, I was looking specifically at the -- when you tried to come up with performance in the previous growth during the time the court regarded the education system adequately

funded.

When you looked at that did you take into -- consider any type of, I guess, testing issues? Our standards were revised, I believe, in 05/06, and if you look at the growth on top of page 47 you'll have a -- that's when we had a very large jump 4.05 in ELA and 7.6 in -- in math proficiency. That coincided with kind of the phasing in the No Child Left Behind, high-stakes testing. I heard from teachers all the time who were -- were overtesting, were preparing. So did you look in terms of how that coincided with any possible testing bias?

I'm thinking of the pizza parties. I have three kids in grade school at this time and I have teachers talking about the preparation that went into getting them ready, and in terms of how that coincided almost exactly with that new, redone state test there seems to be a -- a jump there that's really hard to tease out in ACT or any other scores.

Did you look at testing bias in any ways and possibly what other states did at the same time with new tests in terms of maybe study spending and a jump in their scores based on

just the -- an overall feeling of going no child left behind and the importance of the tests at that time frame?

MR. JASON WILLIS: We don't have -- we didn't have any evidence -- I guess, systematic collection of evidence. I mean, many states -- all states have gone through those kinds of testing transitions. The focus of on what years of data and their improvement that we looked at was really tied to the funding levels that tie back to the Montoy case and the years between Montoy and the Gannon case.

REPRESENTATIVE AURAND: When you look at that, there's this -- this level of jump, the 4.05 and 7 in that particular year, which was the first comparative year with the new.

Is that -- did that indicate anything to you that there might be something else going on in there, because in my schools it was mostly the same teachers teaching the same things, but the test preparation was the big change that I noticed. Did that play any role at all in your analysis?

MR. JASON WILLIS: No. Again, our

point of reference was really thinking -- was really looking at the years between Montoy and -- and Gannon and the levels of spending during those years.

REPRESENTATIVE AURAND: Do you think that is something that is worth considering?

DR. LORI TAYLOR: I think that the -- the testing that -- I'm quite confident that there were levels of growth that were sustained; when you make the transition to more high-stakes testing and -- and people, that they learn a number of things. They -- they learn how best to prepare students for the testing, they learn how best to help prepare them on the content that will be covered on the test, and so you can see growth rates that cannot be sustained subsequently. But what you also can see is just -- in looking at the kinds of growth that were being experienced very close to the period of time of the Montoy decision was really what we were focussing on.

REPRESENTATIVE AURAND: All right. Thank you. Thank you, Madam Chair.

CHAIR BAUMGARDNER: I have a few brief questions.

So does any state receive any type of punishment or any -- is there any type of accountability from a federal standpoint if the state's ESSA goals are not met? So if they've failed the ESSA goals, is there any type of stick, if you will, from the carrot -- or a stick, if you will, from the federal government?

MR. JASON WILLIS: I'm not aware of direct action that's been taken by the federal government to -- I guess, can you clarify? When you say, "punishment," what -- what are you referring to?

CHAIR BAUMGARDNER: Well, we do receive funding from the federal government and we are required to submit an ESSA plan.

So when the Department of Education came up with the ESSA plan that was signed by the governor, what -- what impact does that have if the state, any state, fails in what they set out as their goal?

MR. JASON WILLIS: So I -- and, again, this isn't an issue -- a question that we were prepared for, but what I can say is I know that the -- the federal government engages

in ongoing discussions with -- with states around all kinds of provisions of their plan and they do monitoring. And in those cases when they are monitoring and they find that there is something that, you know, they need to engage the state in, there are different stages of that engagement that usually start with a conversation, with deeper investigation, some opportunity to course correct, but I -- I'm not aware of a state that, you know, for example, has lost large amounts of federal funding as a result of their submission of an ESSA plan.

CHAIR BAUMGARDNER: And earlier, when you were speaking about goal thresholds, you said it's very important for the state to have agreement.

Could you express again -- when you say it's very important for the state to have agreement, are you talking about the State Board of Education, the State Board of Education and the legislature? What are you talking about as far as that agreement?

MR. JASON WILLIS: So when researchers walk into supporting states through these education cost studies there are certain

factors that are not at the behest of the researcher. One of those factors, when we think about the education cost function, is the -- the level of performance, the threshold of performance. That's not in our purview because it's, you know, up to the state to make those decisions.

However, given the muddiness of how that's been defined in the State of Kansas we were using documents, we were using historical levels of performance, we were using reviews of the Gannon rulings and associated testimony and evidence to help identify an objective, independent level of performance. And when we refer to the state we are talking about all branches of government, executive, legislative. That would include the State Board of Education, the Department of Ed, this body, the legislature, as well as the governor to think and consider what is acceptable for you, what is acceptable for the public around the level of performance that you expect of students, how they are prepared through the K-12 education system.

CHAIR BAUMGARDNER: So when we talk

about the aspiration of the 95 percent graduation rate and we know that less than 70 of our school districts in the state have gotten to that 95 percent, does that mean that the other districts are not in agreement? Does it mean that the legislature with funding isn't in agreement? Is it the school boards that aren't in agreement with the ESSA aspirations? What would that be attributed to?

MR. JASON WILLIS: So I -- I think it's dangerous to speculate around what the reasons and rationale are for why some schools and districts have different levels of graduation performance than -- than others. In this study we used research techniques that have been proven time and time again in other states and across the country that allow us to see some of those relationships.

We'll talk a little bit later about the practicalities of actually implementing the work. It is one thing -- and this -- this body has an important role to play in the actual funding of the system, but the work that goes into translating the dollars themselves to how systems implement those resources, how they use

those to help achieve levels of student performance given the background of the students, given the place in which they reside and the size of their system, it's overwhelmingly complicated. But that's where the work of sitting side by side with districts and identifying what those targets are and coming up with the right set of incentives is really important to consider, along with whatever level of funding you think is necessary for the K-12 system.

CHAIR BAUMGARDNER: Representative Lusk.

REPRESENTATIVE LUSK: Thank you, Madam Chair.

On page 61, I'm curious about the -- you've talked before about the strengths of this cross model function approach versus the 2005 study. Please explain again -- I mean, this indicates there is a relationship between the amount of funding put in and -- and money and the results you get.

Could you elaborate on that?

DR. LORI TAYLOR: Thank you for the question.

I presume you mean by the results you get the academic and graduation outcomes for the students; is -- is that correct?

REPRESENTATIVE LUSK: Okay. Table 17, yes.

DR. LORI TAYLOR: Right. But what you're -- what -- pardon me. But what you want me to articulate is why this model shows a linkage between academic outcomes --

REPRESENTATIVE LUSK: Exactly.

DR. LORI TAYLOR: -- and cost?

REPRESENTATIVE LUSK: Yes.

DR. LORI TAYLOR: Okay. And so the idea of any regression analysis, of which this is an example, is one is trying to use the data to best predict the level of spending that occurs based on the level of student performance, the demographic characteristics of the students, the geographic cost drivers for their school district, size of the school district, these kinds of things.

So what one does is identifies a series of weights or coefficient estimates that best trace out the relationship between spending and the determinants of spending. And in this

model, in the first two rows, are articulated the relation -- the estimated relationship or the best available relationship between outcomes and spending. And what we did find was a strong, statistically significant and positive relationship between the level of student performance on the conditional NCE score and cost such that a -- a 1 percentage point increase in the conditional NCE scores associated with about an 85 percent increase in cost.

And so a 1 percentage point increase in the graduation rate is associated with between a 1.2 and a 1.7 percent increase in cost depending on whether you're talking about kids in high school grades or lower grades, on average, ball park, 1.5. So what we did find was a strong, statistically significant and positive relationship between out -- educational outcomes and expenditures once one controls for efficiency, as was done in our statistical model.

REPRESENTATIVE LUSK: Thank you.

CHAIR BAUMGARDNER: Any other questions from the committee? Yes, Senator

Bollier.

SENATOR BOLLIER: Thank you.

As long as we're on page 61 and 62, at the bottom of page 62 there is a missing number. Right now it says, "XX." It's in the third sentence down on page 62 at the bottom, and I think there's supposed to be a number there.

DR. LORI TAYLOR: There -- there most definitely is supposed to be a number. Thank you very much for that. If the committee will permit -- I'm not doing math in public, so I will -- I will calculate that and provide it to the body.

CHAIR BAUMGARDNER: I think we're ready to move on to the next portion on the PowerPoint.

DR. LORI TAYLOR: So our cost function analysis as articulated, in response to Representative Lusk, looks at the observed relationship between the spending that occurs in the school districts and schools, the outcomes that are accomplished and the cost drivers that could modify that relationship, in particular the size of the school district,

labor costs.

One thing that's been particularly important in Kansas is the population density of the area. One of the factors that seems to be particularly important here is that you are in some sense forced into -- into building sizes that are not as -- not cost minimizing by virtue of the fact that you have to have a reasonable amount of distance between the school buildings; that if you were to be operating in a densely populated area like in Wichita or Kansas City, one can get to school buildings that are the cost effective size. One can have 22 Algebra 1 students and -- in a classroom and be able to therefore use your teaching resources as -- as efficiently as possible.

If you are in a much less densely populated part of the state you might not have 22 Algebra 1 students in a -- a district or in a high school to be served. You're going to have to have a much more labor intensive delivery mechanism for education in sparsely populated parts of the state because you can't put the kids on the bus for two hours to -- to

bring them in to try to get to a -- a cost effective size school. You're going to have to operate a school that is smaller than would be cost minimizing, and that's a major driver of cost in the state of Kansas. So we built the model to accommodate all of these factors that drive differences in cost.

One of the other factors that we built into the model was a recognition that sometimes spending exceeds that which can be explained and, to the extent that spending exceeds that which can be explained, there are three ways that can happen. One way is that a school district is attempting to -- is producing performance that we don't -- we didn't have eyes on, that we weren't able to -- to measure, art, music, factors that are not perfectly well correlated with reading, writing, arithmetic, the -- the measured educational outcomes.

So one source of unexplained spending would be outcomes that are not captured. One source of unexplained spending is that there could be constraints on the school district's behavior that are not being fully captured, cost factors that we are unable to observe.

The third source of unexplained variation in spending is inefficiency, a lack of the utilization of best practices in the state.

And so, essentially, what one sees when one looks at these inefficiency measures are that some schools and districts are spending more than you could explain, and it might very well be that they are just -- they are not using the best practices in a cost effective sense that are available to other schools. So when we talk about inefficiency we're talking about this amalgam of outcomes. We're not reserving cost, we're not reserving -- and just straight failure to adopt best practices.

So, when we look at that, we typically see in other states inefficiency measures in the 10 to 12 percent range, although I have seen studies that went substantially greater than that. When we look in Kansas what we are observing is that the cost efficiency of the -- the Kansas school buildings is typically quite high, that on average we're talking about a cost efficiency of nearly 96 percent, and that is remarkably good. It suggests a -- a very prudent use of the -- of resources to produce

the outcomes required by the state. There are, however, some places where spending is substantially more than those estimates would lead you to predict, but what we did find was strong evidence of efficient practices, in general, in the state of Kansas relative to other districts.

The second major finding that comes out of our analysis is to think about using the cost model to predict the level of spending required to meet certain performance thresholds. And in order to use the cost model to make those predictions one has to designate performance thresholds. So we designated a -- a set of performance thresholds that, as Jason described earlier, we believe to be consistent with the Rose standards and the standards the state has set for itself.

The first is Scenario A, which is establishing a target of 90 percent proficiency at Level 2 or better on the KAP, and Scenario B, which establishes the target of 60 percent efficiency for a Level 3 or better on the KAP. Both Scenarios A and B use a graduation rate of 95 percent because that's the -- the long-run

standard of expectation. We also present to you cost estimates at a graduation rate of 90 percent, but we wanted to -- to make you aware of what we were talking about when we referred to Scenario A and Scenario B.

In making these, essentially, predictions of what the cost would be necessary for a -- a school to achieve the level of performance identified, what you're going to see is there's an estimate of base funding, okay, and then there are adjustments to that base funding. The adjustments to the base funding, there's a regional cost adjustment. Those are driven by differences in labor costs and differences in sparsity, and I'll tell you right now the differences in sparsity dominate that particular relationship.

There's an economies of scale adjustment for differences in school district size and a student needs adjustment for differences in the demographic characteristics of the students. If you were curious, one could turn to the back of the report in Table E and see estimates of these, base funding, regional cost adjustment, the economies of scale adjustment, student

needs adjustment for each of the districts. And one starts with a base, multiplies by the adjustment in column 1, column 2, column 3 and gets to the maintenance.

The final two pieces in Scenario B are the estimates of what it would take to raise -- or how -- and essentially how much -- how high the conditional core of equivalent score would need to be to be on the path towards the Scenario A and Scenario B with respect to the percent passing at Level 2 and the percent passing at Level 3 on the KAP. So what we did was we translated to what does the normal core of equivalent score need to be to have -- to have an expectation that the passing rate would be 60 percent at Level 2, what does the normal core of equivalent score need to be to have an expectation that the passing rate would be 90 percent -- 90 percent at Level 2, 60 percent at Level 3 on -- on the test. So these are -- this is the way one uses the cost model to predict cost at various levels of performance.

Clearly, one could also use the cost model to predict costs at levels of performance that we have not yet articulated. What we

found in the estimation is that costs are substantially higher in particular for students who are eligible for free lunch. They -- the best estimate is that the multiplicative weight is 1.98, which would translate into a -- an additional student rate of about .98. That -- or, excuse me, .89. So that is to say that the -- the cost of serving an economically disadvantaged student is about 80 -- about 90 percent higher than the cost of serving a student who is not receiving the free lunch, according to the systematic relationships identified in the cost model.

Similarly, the English language learner students, we're talking about the weight of 1.22, and that is going to be a relationship that we identified as becoming smaller as the fraction of English language learners in the school increased. And that's actually something that makes a lot of sense to me in thinking about how one serves English language learners when they are but a small fraction of the student body compared to how one can serve that same population when they're a relatively large fraction of the student body. When

English language learners are a small fraction of the students you're going to have to serve them even through some sort of pullout program that provides them with ESL or bilingual instruction or you're going to want to place them into a bilingual classroom where you have a small number of students and a teacher, which is a very labor intensive way to bring services to English language learners.

As the number of English language learners tends to increase, if you're going to be delivering services in a bilingual classroom, then what you -- you are in a situation where you are able to get to a more cost effective size classroom and you can have a bilingual education classroom of 18 instead of a bilingual education classroom with 9, for example, in a particular --

And so it's much more -- it's much less expensive to operate once you get to, essentially, critical mass with respect to the -- the number of English language learners in the school, but there is a critical mass phenomenon going on here, and that's one of the things the model represents. Okay.

And there's a scatter plot, that the student need weight distribution by district enrollment I shared with you, only to illustrate that student need is not a function of district size, that what's going on here is not that big districts are the districts where the kids have need. There are large districts where that's true. There's also large districts where the student demographics do not drive cost, particularly. There are small districts with very -- with student pop -- that have fractions of populations that are expensive to serve and there are small districts where the fraction of student population is -- has relatively limited needs for -- for those particular students.

This is a map of the -- another of the cost drivers in Kansas. This is the teacher salary index. I'd like to talk really briefly about how this was estimated, which is to look at the observed relationship between the -- the salaries of Kansas teachers and the demographic characteristics of those teachers. If you're interested in the nitty-gritty details, they'll be presented to you in Appendix B but,

basically, that's articulated in a relationship between what the district is paying for their teachers and the demographic characteristics of the teachers they are hiring and then the factors outside of school district control that can lead to variation in the salaries that they need to pay, so basically following a typical labor model to estimate the -- the -- the wage that each school district in Kansas would need to pay to be able to hire a teacher with ten years of experience and a master's degree and then asking how that predicted salary for a person with ten years of experience and a master's degree differs from district to district throughout the state based on things like the prevailing wage for people who are not educators but do have a college degree, the unemployment rate in the community, the distance from a metropolitan area or a micropolitan area in relation to geographic remoteness.

I should note that our teacher's salary is probably best characterized as a salary and benefit index, which basically means what we're trying to do is -- and what we're doing with

this model is mapping out the prediction of what each district would have to pay to hire exactly the same person -- or the same set of qualifications and characteristics in each of the various districts, which you'll see is a dark green in the metropolitan areas, which makes a lot of sense, but also some -- some dark green going on in southwest Kansas, which I had real trouble explaining until we overlaid an oil and gas map on the same areas and saw that what we have here is a lot of what's going on with -- with very recent fracking activity, that things have -- things have changed a bit since I lived in Kansas, but that it's definitely reflective of some of what's going on in those labor markets where school districts risk losing their personnel to the higher-paying, local occupations related to fracking, also the influx of people related to oil and gas extraction driving up the cost of living or the wages for other folks in those particular locations.

Okay. I should also note the literature has suggested that it's very costly to operate schools with less than about 300 students per

school, and a whole lot of the schools in Kansas are like that, that many of the -- and for reasons that are outside of school district control, having to do largely with population density, and that there are some schools that are -- are larger, but most schools -- about 32 percent of high schools have 200 students or fewer. That's a -- a costly configuration for the various schools.

As a result, if you look at the distribution of per people spending by building size or with enrollment, what you'll see is that the -- if you look at those buildings with fewer than 150 students, that's going to be the little spike out there to the right, centered over about $1,200 dollars per student -- $12,000 per student as opposed to the more tightly clustered observations you get when you're operating a campus or building with between 150 and 300 students or between 300 and 750 students.

So we basically used the cost estimates to -- the estimated cost model to forecast the amount that each -- that each building would need to spend to achieve the performance and

then the amount which each district would need to spend to achieve the level of performance. This is a scatter plot showing you the long-run kind of cost estimates compared to the observed school district estimates. The dark circles are going to be the 16/17 spending. The open circles, the hollow circles, our -- our forecast of what they would need to spend to achieve the 95 percent passing rate and growth from one year to the next are a normal core of equivalent score of .50. Equivalent, what we were saying is these are the long-run, sustaining levels of cost.

What you observe is a relationship with school district size that has much more of a U shape to it than the existing level of expenditures. So if you thought of the existing level of expenditures as kind of tracing out a saucer, the cost model traces out a bowl, which is something a little bit higher for the very smallest of districts and higher for the largest of districts when -- when everything is taken into account.

The -- the distribution of spending per people by district size in 2016/17 also is

going to be telling you something about the relationship between the per people spending and the number of the districts that are spending at that level. You get a lot less kind of variation in spending at the district level than you do at the school level because there are so many different configurations at the school level.

Then we get to the -- the part that everybody's been waiting for, which are the aggregate cost estimates. The -- the first thing we estimate is what we call the current -- what is the current levels of current operating expenditures. So this is the average of our dependent variable, the level of spending excluding the food, excluding transportation, excluding con -- excluding all of the capital outlay and construction costs.

Our estimate is that the level of long-run maintenance would be 5,000 -- 5.103 billion dollars or about a 10 percent increase over current levels of spending. That would not be adjusted for inflation with Scenario A. To be on the path towards the performance thresholds of Scenario A would require 6.4

billion dollars; to be on the path toward Scenario B, 6.7. Okay. These are best understood as temporary transitional funding under Scenario A and Scenario B to get to the point of a long-run scenario where the maintenance run level is required to sustain, but first you have to catch up, that there are some -- as we showed you in the previous graphics, there are some districts that are not particularly close to the graduation rate that's being cast out here, which is 95 percent, and they're not particularly close to a 90 percent of the students passing at Level 2, which is what I think of as the closest to the way that the Gannon ruling articulated the standards, is to Level 2.

So there would need to be some additional funding to bring the students, basically, up to grade level and -- in some sense and then, once they are at grade level, it is the maintenance cost would represent the long-run cost required to sustain that level of student performance.

There are a number of considerations that need to go into this that we'd like to -- to talk to you about. The first is that we

recognize that the state doesn't fund on enrollment or really think about enrollment as the -- the metric of student performance, although that is the measure most commonly used in the -- the scholarly literature in doing cost analyses and, for that reason and other reasons, the baseline we used.

But there was some question about whether or not -- how would things be different if we had done the analysis based on FTE rather than on student enrollment. There's also the question of what would happen if, rather than using a -- a graduation threshold for cost analysis or the fore -- for the cost forecast of 95 percent, we would use something more like 90 percent in -- in looking at those numbers.

So we wanted to share with you how the -- the scenario would change if we were to use the FTE enrollment rather than -- than straight enrollment. We -- we estimated the -- the cost model, the -- the FTE enrollment and the straight enrollment are correlated about .999, so it -- statistically, there wasn't a whole lot of -- of change that would occur here.

And, if you see in the estimates, what

we're seeing is if you were to have a analysis on the basis of FTE, the maintenance cost would be 5.12 billion as opposed to the 5.103 billion that we estimate using district enrollment. So I think the -- the big takeaway of this particular supplemental analysis is that FTE or district enrollment is not really the issue here, that either one is going to give you the same number in terms of the additional resources the state's going to have required.

Now, it does mean that when you -- if you were to choose to operationalize in any way our results you would want to make a translation from the enrollment-based estimates to an FTE basis to be able to incorporate them into your funding formula, and we can provide research staff with the strategy for doing that.

The second is to it look at cost estimates based on different graduation rates. And so if you start at the 90 percent graduation rate rather than 95 you're going to bring the estimate of -- of maintenance down substantially. Rather than a 5.1 billion down to a 4.7-billion-dollar estimate, you're going to bring the Scenario A down from a 6.4 to a --

a -- a 5 point -- or 6.0, basically. So there definitely is a sensitivity in the analysis to the -- as you would expect, to the choice of graduation rate for costing out purposes.

So there would definitely be a reduction in the cost estimates associated with a 90 percent graduation rate rather than a 95 percent graduation rate, but the -- essentially, there is about a 1.5 percent increase in cost for every 1 percentage point increase in the graduation rate, and that's kind of the best way to be thinking about it in this context. Then -- yeah.

MR. JASON WILLIS: So one of the other things that we wanted to make sure that we provided the body with was understanding that the analysis used are the most recent year of expenditure data that was available, which was the 2016/17 year. We all recognize we're kind of nearing the end of 17/18 and headed into 18/19, so we wanted to provide a supplemental analysis that brought forward the spending from -- that was observed in 16/17 to the year which we're currently in as well as the year in which you are headed into.

And so here's a presentation of the maintenance Scenario A and Scenario B that you can see at the very bottom applies two things. The first is an inflation factor to bring forward the funding levels from 16/17 to 18/19. We used a -- a five-year CPI average -- national average to apply those increases across those years and we also -- of important note is that the assumptions for the graduation rate in 16/17 were 90 and then 17/18 the same at 90 and then increases to 91 percent in 2018/19.

So these are additive funding amounts. So the 4.737 billion for maintenance, you would add 115 million in 17/18 and then an additional 315 million in the subsequent year. And that's, again, looking at the -- those two factors of inflation as well as the change between '17 and '18 and 18/19 from 90 to 91 percent.

The other thing that I'll mention and also just recognize for the -- for the body is that we are aware that on the SB19 there was an investment that the legislature made in the K-12 system, and to some degree you can account

for it. The figures that we have are 194 million in ongoing funding starting the 17/18 year plus another 97 million in -- starting in FY19 and ongoing. And so that cumulative over -- over the two years is that 485 million, again, which could be contributing or supporting the initial investment that we're describing here.

So to bring us to the -- near the end of the presentation, one of the things that the study team really looked at was in considering -- was thinking about the kind of phase-in of these funding increases. And clearly, I think, everybody can acknowledge that these cost estimates are large and that we can also recognize that -- and this was a -- a surprise to Lori and I. The Kansas schools are already highly efficient in their use of spending.

Kansas schools are operating at levels that we have not seen anywhere else in the country and, as Lori explained, there could be some -- there could be some considerations of that maybe in pockets but, clearly, Kansas schools are using dollars well given what they are tasked to do with it. And so the state

might consider ensuring how do you help to maintain their level of efficiency as you would -- as you invest in additional resources.

And what we can also observe is that when you have seen states make very large investments of dollars, it's perhaps prudent to think about that being extended into some type of phase-in period, and there's a couple of reasons for this. The first and probably the most important is for leaders of your schools and districts to take the time to plan how they would use that money.

Every year governmental agencies go through a planning process. They think about how they want to use their resources and to what set of outcomes or desires they want to address those resources to get to that outcome. And making overly large investments of these resources at once does not create an opportunity for leaders in our -- in your schools and districts to plan and be thoughtful about how to use those resources.

As I was mentioning earlier, education systems are extraordinarily complex and so being able to understand how additional

resources can have a direct impact on the outcome takes time, it takes practice and, frankly, trial and error. And so a phase-in period would create an opportunity for school and district leaders to identify ways in which those dollars can be used most effectively. Perhaps it is lowering class size to allow students to be pulled out for different instruction. Perhaps it is providing a mental health counselor that can provide social and emotional support to students.

But unless local leaders and practitioners have an ability to think about how they might use that money, to work with one another to identify how to implement it -- Lori and I would -- would think that, without that in place, Kansas being able to maintain its level of highly efficient use of resources may slip a bit.

And we presented this last time but wanted to bring it back again. You know, much of the work of -- and discussion has been about how to adequacy and equity here in the state Kansas and thinking about these other fundamental levers that help to support

practitioners and using dollars well and efficiently includes some of these other things around flexibility and support and transparency and accountability.

So -- so, whatever level of performance the state agrees is important for ELA and math and graduation, that you're offering combinations of different policy levers that are supporting schools and districts but are also holding them accountable to make sure that they're making progress and that they have the flexibility within various rules and regulations to actually achieve those means.

And so one of the examples that we offer in the report is just thinking around the transparency and availability of data. Kansas has been nationally recognized for their internal data systems by the Data Quality Campaign out of DC. And one of the things that we can -- we can observe is that, with so many small school systems thinking about the use of data and how it helps to inform instruction may be a challenge for these schools in that -- you know, for some of the schools and districts that we work with across the country, when they

have student enrollment levels at 200 or 250 your superintendent is also the bus driver and janitor and -- they're playing so many different roles and so how might you consider, as a state, how to take advantage of scale to support those smaller school systems that might give them some insights or a direction to start a conversation about how to continually improve achievement in the classroom.

And Data Central, which we drew some of our date from for this study here, is a good place to start. And, you know, KSD has done a nice job of putting together those data sets, offering some insight into how Kansas schools operate today on a variety of different levels, and it might be useful to think about ways in which that system can be enhanced. You know, one example that we look to nationally is Texas smart schools, that starts to look at the interaction between these various data sets that help practitioners to more finely tune and understand how they make decisions going forward.

The last thing that I'll mention, and then we'll close our presentation, is thinking

about the combination of support and accountability strategies. So the legislative post audit that you have here in the State of Kansas does a series of reviews every year, and they're directed from various bodies. And we took a pretty good look at about a dozen or so of those studies and came up with a couple of insights that we think might be helpful as you think about the additional resources that you invest here in the State of Kansas.

The first and foremost, that the analytical and comparative techniques that LPA uses are actually pretty good in that they might have some applicability in other environments and forums. Like, for example, if you're getting a set of superintendents together and they're discussing how they want to break the -- the nut around early literacy that they're struggling with, what are some of the comparative and analytical techniques that can be adopted into those scenarios to help drive those conversations.

The second is that some of the -- the insights that are reached in the -- in the reports themselves, although mostly oriented

towards compliance with the law, and we fully recognize that that was the mission and outset of LPA, surfaces matters of process, culture and performance that are really important for organizations to consider.

The law is guaranteeing a minimum level of compliance but as school systems, practitioners aspire to provide students with a level of performance that well exceeds that minimum level of performance, and some of the ways in which the LPA studies have commented on issues of process, culture and performance in schools could actually be very insightful for practitioners to think about and use.

And there's a discussion section at the end of each of the reports that is the -- basically, the response by the district on what plan they're going to put into place but thinking about how do you get beyond just the response and how do you get the district to engage in both implementing those practices, but also sharing with others is something that we think would be very beneficial as you consider the additional investment of resources here in Kansas.

So, with that, I just wanted to thank the -- the committee for your time, and we'll take any additional questions that you might have.

CHAIR BAUMGARDNER: I have first down Representative Landwehr followed by Johnson and Trimmer.

REPRESENTATIVE LANDWEHR: Thank you, Madam Chair.

You've provided several spending scenarios, but each is a single number that includes state, federal and local funding, but we currently don't mandate specific local funding level and the legislature has no control over those -- those levels.

So do you have any thoughts on how any funding increases should be divided between the state, federal and the local?

DR. LORI TAYLOR: Thank you for the question.

I think it's -- it's very important whenever one does these kinds of cost analyses that one combines all of the resources of -- of funds, to look at the federal, the state and the local, because they -- that is the -- the best estimate of the resources being brought to

bear for those specific children.

As to how responsibility for coming up with those resources should be divided between federal, state and local, federal law would hold that you cannot supplant federal resources in the sense that because the federal money is there the state cuts back. So you really have to focus on the dimension between state and local and the division between state and local, and that is very much a -- an issue of state policy and not something that I want to -- that I have the expertise to really advise you on. I would point out, however, that there -- it would be an issue of equity concerns if one were to assign a certain level of resourcing to the local level and the local level be unable to -- to generate such a source of resources.

REPRESENTATIVE LANDWEHR: And, just a little follow-up to that, so then do you have any thoughts on the merits of providing all adequate funding through the state instead of relying on local option budgets?

DR. LORI TAYLOR: My read of the literature on school finance equity and adequacy suggests that the -- the requirements

of equity would seem to require state funding for what we call a foundational level of spending or regular instruction, but it would be relatively up to local discretion with respect to enrichment, and it's a state's call where that line between regular instruction and enrichment might happen to be.

When I was in high school anything about computers was clearly enrichment activity. Nowadays my kids were getting it in their public school in the 3rd grade, so it has become an essential element of regular instruction, so -- but the -- the typical school funding model that is analyzed in the literature is one that makes the distinction between enrichment and foundation and obligates the state on the foundation side.

REPRESENTATIVE LANDWEHR: Thank you.

CHAIR BAUMGARDNER: Representative Johnson.

REPRESENTATIVE JOHNSON: Thank you, Madam Chair. I do have a few questions. Is it okay to go through --

CHAIR BAUMGARDNER: It is.

REPRESENTATIVE JOHNSON: Thank you.

I'll start with one that folks might expect me to ask you. You mentioned KPERS and pensions being included. Is that the full payment that's included or -- or what is in the number?

MR. JASON WILLIS: So the dollars that we included in the -- the spending estimates would include those contributions that are made by the school districts on behalf of employees. So that's captured in your benefit line items. There was also -- we also recognize that there was a separate fund that looks like it was passed through. Basically, the state provided dollars to the district, those districts then, basically a day later, would transfer it to the pension retirement system on behalf of the districts. All that spending was included.

REPRESENTATIVE JOHNSON: So all of that spending is included.

DR. LORI TAYLOR: Anything that ran through the districts.

REPRESENTATIVE JOHNSON: Say again?

DR. LORI TAYLOR: Anything that ran through the districts was included. If it

shows up on the fund function and object expenditure reports of the districts we would have included it as current operating expenditures. If it's something that the state makes direct contributions to the retirement system, we would not count that.

REPRESENTATIVE JOHNSON: So something like a bond payment wouldn't be in, but anything that went through the district would be?

DR. LORI TAYLOR: If it went through the district and its current operating expenditures. Most bond payments are for -- for capital improvements and not part of current operating.

REPRESENTATIVE JOHNSON: Certainly, we have a other issues there which aren't worth belaboring. On the pension payment, then, as we currently work through what we hope is a temporary rather than permanent unfunded liability, there may be a 4-to-5-hundred-million payment going towards that unfunded liability currently through there that we would be projecting we would grow, along with the other spending that we do, then?

DR. LORI TAYLOR: My apologies. Could you rephrase what is -- what you see as the source of the unfunded liability?

REPRESENTATIVE JOHNSON: So --

DR. LORI TAYLOR: Is it the pension? I mean, are you talking about an unfunded pension liability?

REPRESENTATIVE JOHNSON: Right, right. So our total payment includes the majority towards the unfunded liability and some towards the normal cost of what goes to current benefit, but each is run through the school districts to their share, et cetera, to try and get there.

So I was just trying to get a sense if, then, we were calculating that as a fraction of the total cost that I would then bring forward and -- and potentially increase to meet the -- the needs that are there, just to get a handle on how that rather large variable might impact.

DR. LORI TAYLOR: Yeah, and -- and, definitely, when we did the analysis, the expenditures that are reported by the districts that are not fund transfers --

REPRESENTATIVE JOHNSON: Right.

DR. LORI TAYLOR: -- would be included in our estimate of cost that we used for the cost analysis.

REPRESENTATIVE JOHNSON: Certainly, you have a lot of data to get through quickly, but that may be a variable that we'd want to look at a little further to try and drive to the detail of cost and ongoing cost as we go forward. And I've been trying to learn more on the cost function analysis and understand everything that's there and how that works and -- well, I know there's nothing that is a perfect and predictable result and what is useful as -- as we get that standard error of estimate. And I get the linear results as I change an assumption, but I'm also interested if there's anything that helps define the range of outcomes.

If I spend $1,000 dollars more per student, what -- what range of outcome in student achievement would I expect and how do I better define that -- that standard error of estimate?

DR. LORI TAYLOR: I -- thank you for the question. I think I have a new research

project.

I have never seen somebody really try and go that direction, from the -- the additional $1,000 per people back to the outcome measures. I know one could make certain assumptions and reverse engineer it, but there are a lot of possible pathways. One could go back -- assuming that the graduation rate does not change, but the academic performance does, one can go back assuming some sort of pro rata between the two. So I've never seen anybody able to do that but would be kind of intrigued by the possibility.

REPRESENTATIVE JOHNSON: Thank you. And if I may continue.

CHAIR BAUMGARDNER: You may. I have six others behind you.

REPRESENTATIVE JOHNSON: So hurry up. Okay. Thank you.

CHAIR BAUMGARDNER: One more. I'm sure they have the questions that you are wanting to ask.

REPRESENTATIVE JOHNSON: Yes. Well, let -- I'll go to -- are there other states that are funding at 95 percent?

DR. LORI TAYLOR: That focus on graduation rates?

REPRESENTATIVE JOHNSON: Right.

DR. LORI TAYLOR: Quite frankly, most of the cost analyses that I have seen have not articulated a graduation rate because they seem to always find that when the graduation goes up, spending goes down because the locations where the graduation rate is low have a dropout problem, as students that tend to drop out are from the lower tail of the academic performance, that the students who anticipate that they will not be passing the standardized tests, that may not be passing the grades. So we take this very costly-to-serve population out of the high school, performance spending goes down and graduation rate goes up, and that kind of perverse structure has made it much more rare that researchers have looked at graduation rates.

I've done work on graduation rates looking at alternative education programs in -- in Texas with charter schools and traditional public schools and in that context, where we're looking at alternative education populations,

you would not want to think about a 95 percent graduate rate because these are dropout recovery programs, by and large, in the state.

When the LPA study was conducted by Duncombe and Yinger for the State of Kansas they -- they costed out a 75 percent graduation rate and yet their base estimate, if you will, adjusted forward for inflation is about $5,000 per kid. Specifically, $5,232 per kid would be their base estimate just brought forward, and our base cost estimate is more in the neighborhood of about $3,700 per pupil.

REPRESENTATIVE JOHNSON: Thank you. Thank you, Madam Chair. If I could be added to the bottom of the list.

CHAIR BAUMGARDNER: I'll put you -- I've got you down there. So, at this time, Representative Trimmer.

REPRESENTATIVE TRIMMER: Thank you, Madam, Chair.

I have two requests. One, could we get a copy of those last two tables that were, basically, kind of addendums to the overall cost numbers that you gave us, because we didn't find those in the report.

DR. LORI TAYLOR: Yes, sir. Those were addenda that were based on the questions that you all asked on Friday. We thought it would be appropriate to be prepared to respond and we'd be very pleased to share with you the slide deck.

REPRESENTATIVE TRIMMER: Okay. So a request before I get to my question, and I'll make it fast.

What you talked about with legislative post audit, as a member of that committee, would there be a way to get a draft statement of what the post audit might include in addition to what they already knew that you suggested when it came to, you know, for instance, superintendents talking about, you know, how they would get together and deal with something that -- talking about how to make that a more efficient process, the things you talked about there? Could we get some kind of a -- an idea that we could give to post audits so we could take a look at that?

MR. JASON WILLIS: Yeah, we're happy to present.

REPRESENTATIVE TRIMMER: Okay. And,

finally, did you all use any -- I know there are different methodologies. Did you -- you did your research independent of the legislative post audit Augenblick and Myers, basically using your own formula. It didn't use a lot of the data from those studies. Okay. I just --

DR. LORI TAYLOR: No, sir. Thank you.

The -- the data for those studies was the vintage of 2002, 2004, 2005, and our focus of our analysis is the period of 15/16 and 16/17.

REPRESENTATIVE TRIMMER: All right. Thank you.

CHAIR BAUMGARDNER: Senator Pettey.

SENATOR PETTEY: Thank you.

You had mentioned about phasing in funding. You gave some reasons why. Is there a time frame that you're referring to for a phase-in?

DR. LORI TAYLOR: Thank you for the question.

My best judgment with respect to things is that I think that some of the goals set forth in the -- the ESSA plan but also some of

the expectations of the court in terms of the Montoy decisions are very aggressive with respect to timeline. I don't think that the school districts could fully absorb and efficiently utilize a big influx of funds without a lot of support. So my recommendation would be to not try to get there in -- in five or ten years but to push it to a -- a longer time frame for these particular items.

MR. JASON WILLIS: The other thing that I would say that, in states that we've seen kind of making these commitments to their public schools, it is a commitment. So school districts would need to be able to expect this level of investment on an ongoing basis, and some states have crafted school finance formulas that basically create that kind of schedule of investment. Obviously, things happen within states, but having that level of expectation of knowing what's coming in the future really helps districts to think about and plan better for the future.

SENATOR PETTEY: That kind of -- you had actually answered what I was going to ask next, and that was about best performance, if

there's reliability in funding, and so you spoke to that over time.

The last thing is that you talked about economy of scale, and yet you did say earlier in your presentation that our co-ops presented some sort of -- presented a little bit of difficulty, but don't co-ops express an economy of scale?

DR. LORI TAYLOR: Thank you for the question.

It's totally -- the idea of a co-op is a -- a wonderful mechanism by which a -- a number of small districts can achieve economies of scale in sharing the resources that make them more cost effective. In fact, the heavy reliance on the interlocals and cooperatives may be part of why Kansas is able to be so very efficient. The challenge is purely one of appropriate attributing to the districts these spending by the co-ops. And the -- the source of that particular challenge is that sometimes, as I understand the data, there are funds from, say, federal sources that go straight to the co-op rather than through the districts such that the reported outlays on behalf of the

cooperative exceed the transfers of the members into the cooperative, so it's important to account for the expenditures of the cooperative rather than the spending into the cooperative by the districts.

So what we did was we shared out the cooperative spending to the member districts according to their share of special education students, since this was a special education cooperative. That's imperfect but it's, in my professional opinion, a more honest and accurate way of reflecting what resources are being brought to bear on the kids than would be to ignore that particular piece of funding.

SENATOR PETTEY: Thank you.

CHAIR BAUMGARDNER: Representative Rooker.

REPRESENTATIVE ROOKER: Thank you, Madam Chair. A couple different topics I'll try and briefly articulate.

On clarification, when you talk about the LPA studies that you looked at, we had -- there's a couple different schedules of studies that are -- that have been conducted in the past. There were annual studies done of small,

medium, large districts and then there were other studies over that time frame that were specific topics. Which -- are you talking about all of it or something specific?

MR. JASON WILLIS: Yeah, we -- we just had staff pull a random sample, basically, over the last five years and then had staff kind of read through them and look for some of the kind of emerging themes. It -- it wasn't specific to the results of LPA, but in the -- in the body of the report we talk specifically around how we think some of the things that -- that LPA is doing in reference to work with the district has some significant benefit as that is -- as that could be shared with other districts, and then what are the vehicles in which to share and work on those kinds of practices.

REPRESENTATIVE ROOKER: Thank you. Have you -- have you accounted -- in your -- your cost estimate have you accounted for inflation over a long-term phase-in?

DR. LORI TAYLOR: The -- the analysis fully accounts for inflation over the -- the period of time that we analyzed, and the -- the

supplemental slides specifically account for inflation, but the numbers in the printed report are in 2016/17 dollars.

REPRESENTATIVE ROOKER: Dollars. So we have -- in some of the legislation we've enacted we have used CPI -- the Midwest CPI as a factor. Would that be a --

DR. LORI TAYLOR: It would be crucially important to incorporate something related to the Consumer Price Index, and the Midwest CPI seems like a very reasonable strategy to use for Kansas, but it -- I used to work with the Federal Reserve System. So we're very much totally into the whole inflation measurement thing, and it's important to recognize that these are estimates of real resources and that, as the prices change over time, one would need to also change the -- the dollar estimates.

REPRESENTATIVE ROOKER: Madam Chair, if I may, my colleagues' questions about KPERS raised -- I need to clarify what that discussion was about.

So there -- obviously, with current school district employees there is a cost to

their benefit package that would include their pension contributions, but I think what my colleague was alluding to is the state is making additional payments to get caught up on, you know, a long-term, unfunded liability and we have an escalated schedule on payments. On top of that, as was mentioned, the pension, the KPERS, is a -- a very brief pass-through on the school district books, so I -- I'm not sure I understood in your answer what it is you are and are not accounting for in this with regard to the KPERS piece.

DR. LORI TAYLOR: Thank you for the question.

The cost estimates that they -- we used excluded specific functions of school districts like construction and food service and transportation. It excluded a few specific funds like the food service funds and we excluded a -- a couple of objects, but otherwise everything that shows up on the books as reported expenditures of the districts that is not simply a fund transfer would be included. And I am not -- basically, as I understood the fund transfers, they were within

district transfers of funds from one pocket to the next.

REPRESENTATIVE ROOKER: Well, we actually, I think, have a system where the KPERS payment comes out of the state general fund, lands in the school district account and then is almost immediately transferred into the KPERS system and it's that much larger payment, it's not just for today's school district employees.

MR. JASON WILLIS: Yes. So the -- so on page 95 of the report -- this is Appendix C -- we lay out by fund, function and object, although funds, functions or objects that were either included or excluded. You can see there on the bottom where the -- sorry, near the bottom of page 95 that the KPERS special retirement contribution is --

SENATOR ROOKER: Is included. So I -- I don't know if there's any deeper analysis that might be done in terms of how we tag that KPERS burden.

Is it appropriate to be cleaning up 20 years of an unfunded liability and tagging it as today's per pupil cost? Is that appropriate

because it is being paid for today? I guess...

MR. JASON WILLIS: So you can treat it several ways, and states do this differently depending on if it's a liability of the school district. In some states what a state will do is kind of provide dollars in the funding formula but will give the obligation for the districts to make the payments on behalf of those current and future -- I'm sorry, previous, current and future employees with those funding formula increases.

There are other states that will make contributions directly to the retirement system and say, you know, we're going to leave that outside of the -- the work of key total systems. But generally what we see with pension programs across the country is there is some share of that burden between local and state agencies to pay for prior, current and future employees, but it's up to the discretion of the state to decide that.

REPRESENTATIVE ROOKER: Okay. Thank you very much.

DR. LORI TAYLOR: And -- and, if I might point out, we -- we have a visibility on

the expenditures, not a visibility on the revenue stream that generated the funding.

CHAIR BAUMGARDNER: Representative Aurand.

REPRESENTATIVE AURAND: Thank you, Madam Chair.

A couple of real quick items. One, specifically with regard to economies of scale and on their Appendix E, handily, Abilene is .1, to start the list. As I understand economies of scale, you know, typically, as we grow to look and fill the rooms and everything we get there, which makes sense, but I -- I don't quite understand how it reverts and goes backwards, then, quite so much.

When I look at Blue Valley, which a lot of us look at as a large suburban school, it's 1.97, and I'm struggling to see that that also equates to Western Plains with 107 students. So I'm struggling to see how on economies of scale a district with 22,000, with very limited poverty, equates to a district that is so small as to keep any class -- have any full class at all.

How do those both get to the 1.97, and

what is it about economies of scale? I don't understand that the large schools revert back to being very poor.

DR. LORI TAYLOR: Thank you for the question.

What the estimated relationship between the school district enrollment and cost is basically a U-shaped relationship. This has been found in almost every study that has been done across the country, is that there's kind of a cost-minimizing point and then costs continue to rise due to cost associated with largeness that are not otherwise captured in the model.

The -- in fact, one of the criticisms of some -- of the work in Texas has been that we failed to find the U shape relationship everybody else was -- was finding, that this kind -- this has to do with -- in Texas, with this -- the really big districts being really, really big. But the -- the fact remains is that the best fit to the spending patterns in Kansas is its costs -- costs fall as you get bigger until you get to about 1,600 and then costs start to rise again. One could think of

those as costs associated with the large districts also having additional sources of cost. One could also associate it with some sources of the challenges of administering larger units. Jason, do you want --

MR. JASON WILLIS: So just to -- in like very practical experience, the three districts that I served as the chief financial officer in were all over 25,000 students. So the district you're referencing with Blue Valley, the ones that Lori is talking about, part of the practical experience of working in such large systems is the communication that you have to do to get a -- a message, a directive, a strategy from one place of the organization to another. That's very different than if I was working in a district of 1,600 kids in which decisionmaking might be my sole discretion or it might be one other person. And those are kind of represented in costs associated with operating larger systems versus the smaller system, what we kind of -- what you see borne out in the research itself.

REPRESENTATIVE AURAND: I guess I understood the U-shaped summary and I would

have thought some of that would have been picked up on large districts, that kind of open area of maybe the cost. You also have that on the regional price index, some of that cost of large urban areas.

But, specifically to this size, have you ever seen -- does that make any, I guess, sense in the terms of it would be so bad with what you've discussed that it would have reverted back to a school the size of 100 that would have absolutely no ability to have any sort of efficiencies?

DR. LORI TAYLOR: In a survey of the literature that -- that was conducted a few years back they looked at the relationship between economies of scale and costs for a variety of districts and reached the conclusion that costs are minimized in the 2,000 -- kind of nationwide. In lots and lots of studies costs are minimized in about the 2,000 to 4,000 enrollment range and increased sharply on either end of that. So 1,600 being the cost minimizing size in Kansas does not -- it is very much consistent with the estimates that have been found in other states, especially

other rural states.

REPRESENTATIVE AURAND: All right. Thank you, Madam Chair.

CHAIR BAUMGARDNER: Senator Denning.

MAJORITY LEADER SENATOR DENNING: Thank you -- thank you, Madam Chair.

Circling back around on Representative Aurand's question, I've also noticed that you schedule in the LPA Duncombe and Yinger cost function study. They also recognized it. But your -- your study has a 97 percent index. Their study had less an 3 percent index. All the literature that I was able to review was all around their 3 percent index. Nothing came even close to the 97 percent that you're using for the big schools, which basically doubles the base value.

So what logic are you using that Duncombe and Yinger did not use in their cost function?

DR. LORI TAYLOR: Duncombe and -- thank you for the question.

Duncombe and Yinger looked at differences in the relationship between size categories for school districts and cost, and the largest size category in their analysis was 5,000 students

-- school districts with 5,000 students or fewer. So they did not allow for any difference in cost between a 5,000 school -- 5,000-student district and a 20,000-student district. Our analysis, if -- if that were in fact the pattern in Kansas, then that would have been the pattern that we detected.

What we observe is that as this size was continuing to grow, costs were going back up. So the primary driver of the difference between the two models is that the Duncombe and Yinger model did not allow for any increase in costs associated with bigger districts.

MAJORITY LEADER SENATOR DENNING: It just seems like a big discrepancy. It's over a billion dollars in your analysis if you compare it to Duncombe and Yinger's analysis. You come up with an extra billion dollars to the big schools in your formula. I just think that's noteworthy.

The second thing I wanted to ask you about is going back to Appendix E, starting on page 117, and I'm looking at the regional index. And, again, I'm -- it doesn't -- I'm not following the logic here. And we'll use

two schools in specific. Blue Valley has a regional index of 1.15 and Beloit has a regional index of 1.77. Blue Valley is on the eastern side of the state and Beloit is not.

So how does that -- how does that sort out?

DR. LORI TAYLOR: Yeah, sure. Thank you very much.

The -- the issue is that the regional adjustment is not purely about labor cost but also about the population density, and what you're observing is that the population density is much lower in Beloit; therefore, the costs of operating schools is much higher. Their campus -- their buildings are smaller than would be cost effective and that what we observed in the data is that the sparsity factor, the population density factor dominates the geography -- the geographic relationship. And that's what you're observing there as well.

MAJORITY LEADER SENATOR DENNING: And then, on that same line of thinking, when you go to page 80 and you have your comparable wage index map, are you -- the underlying data is being calculated into this index; is that

correct?

DR. LORI TAYLOR: Yes, sir.

MAJORITY LEADER SENATOR DENNING: So Wyandotte and Johnson County, the couple of two largest counties, aren't on that map. They're inside the Missouri.

So is this data excluding those? Is that -- could that be a reason why Blue Valley is so low? Is -- is --

DR. LORI TAYLOR: Yeah, no.

MAJORITY LEADER SENATOR DENNING: Those two counties are not on that map.

DR. LORI TAYLOR: Yes, sir, I'm seeing that and, no, sir, that's not -- I don't think that that's what's going on, but I will find out.

MAJORITY LEADER SENATOR DENNING: Yeah, I think that would be really important to find out.

And then, just my closing remarks, you know, the amount of money that you're asking us to put in schools -- I know this is an academic exercise and not a financial exercise, but it's 148 percent of 100 percent of the tax growth in Kansas, so just to put that into perspective.

And then, on that same line of thinking, when you put -- when you're asking us to put 400-some million dollars in to chase the 95 percent graduation rate, does that have anything to do with -- with improving math and reading, that number that you gave us? It seems like it did not.

DR. LORI TAYLOR: Well, it -- it's a -- it does in the sense that it's a multiplicative factor so that to achieve a certain performance level in math and reading with a higher graduation rate would be more expensive.

MAJORITY LEADER SENATOR DENNING: So, just by definition, if we're chasing graduation rate with that amount of money, would not -- would not the other assessments come up? It seems like we're double-counting. Seems like they would have to come up by definition.

DR. LORI TAYLOR: The -- thank you very much.

The methodology of regression analysis is going to give you the -- the marginal costs or the additional costs associated with a small change in graduation rate, holding the normal

core of equivalent score constant and simply -- similarly, the estimated cost of that increase in scores holding the graduation rate constant. So when one does the forecasting exercise one -- both of them simultaneously, but the estimates are independent, so no double-counting.

CHAIR BAUMGARDNER: Senator Bollier.

SENATOR BOLLIER: Thank you, Madam Chair.

I think this will come up partially from that Appendix E, and a question with that base number and then the next of all those multipliers. You used an assumption that it is a different cost for a -- a K-through-8 versus 9-through-12 student.

So can you help me understand, then, as we go back into our own funding formula, how these base numbers follow that change and the multipliers?

DR. LORI TAYLOR: Thank you very much.

The -- the way in which the -- the grade level of a school influences cost is built into the base estimates for each district. That's

why the base is not identical from one district to the next. It differs according to the current grade configurations of the buildings operated by that district. We presume that if a district currently operates as a K-8 it would continue to operate as a K-8 and then a high school campus -- rather than trying to make some sort of extrapolation about how the district would change its school configuration in response to policy changes, so...

CHAIR BAUMGARDNER: Senator Hensley.

SENATOR HENSLEY: I want to go back to a question that I asked J.F. King on Friday. If you wouldn't mind putting that previous slide up that you -- you had there.

MR. JASON WILLIS: Sorry, which -- sorry, which one?

DR. LORI TAYLOR: Which one?

SENATOR HENSLEY: On the expenditures. That may have been the previous slide, but I'm talking about the one that Representative Trimmer was referring to on the expenditures that you're recommending.

DR. LORI TAYLOR: Ah. Okay. There. Yes, sir.

SENATOR HENSLEY: Yeah, I believe that's it. Actually, the -- no, I'm talking about over the three-year period of time. That's it.

I'm looking at finding number 6 on page 70, and it's with regard to phasing in the funding increases over a period of time. And the other day I asked Mr. King -- you had referred to the table below and there was no table. Is this the table?

DR. LORI TAYLOR: Yes, sir, this is the table.

SENATOR HENSLEY: Okay. But on -- on the -- the other day you were talking about over a five-year period of time. This differs from that inasmuch as it's over a three-year period of time.

DR. LORI TAYLOR: And the -- and one would then carry it forward for the remaining five years. So each year we would have an additional 1 percentage point increase in the graduation rate --

SENATOR HENSLEY: Right.

DR. LORI TAYLOR: -- and, therefore, you could --

SENATOR HENSLEY: So can you provide that for us?

DR. LORI TAYLOR: For a five-year plan?

SENATOR HENSLEY: Yeah.

DR. LORI TAYLOR: Sure, gladly.

SENATOR HENSLEY: I'd be curious to see it.

The other thing that I would say with regard to the point that Jason made about school leaders planning for the future -- you know, when I think back to our response to the Montoy decision, we had a special session in 2005 called by the governor to respond to that. And then, of course, in the regular session of 2006, combined, we invested somewhere in the neighborhood of about 700 million dollars and we phased in over a three-year period of time, and the court found that acceptable. But, obviously, this country went into the greatest economic downturn since the Great Depression and, as a consequence, we cannot keep our commitment. You know, you were talking about the legislature keeping its commitment. And so it's very difficult for local school people to

make plans when those kinds of things happen, and that's the difficulty with this.

I'd be curious to know what other states -- do they have a lockbox? Do they, you know, provide for absolute guarantee? How do they do it? Obviously, you can't hold one legislative session -- legislature over the actions of another, and I'm just curious to know if you're aware of what other states may do to make sure that the commitment is kept.

MR. JASON WILLIS: Yes, there are several states. They've been raised up nationally for their efforts, and some of this can be observed over the last decade. And they've learned a lot of things, some things that worked for them, some things that didn't, and we're happy to provide the committee with some of those specific state examples and some of the writings that I have in my mind that I think might be helpful in providing some guidance about, as you refer, the lockbox, if you will.

SENATOR HENSLEY: That's the only term I can come up with. You know, we talk about Social Security being put into a lockbox,

and I'm wondering if we couldn't, you know, come up with a similar idea here at the state level.

MR. JASON WILLIS: They're -- they're generally referred to as minimum funding guarantees, and there's a set of --

SENATOR HENSLEY: Say that again?

MR. JASON WILLIS: Sorry. Minimum funding guarantees.

SENATOR HENSLEY: Minimum funding guarantees.

MR. JASON: And they're a set of procedures and policies that surround that level of funding and some of which are tied to the economic activity of the state, others of which track with the level of spending. Again, we can certainly provide some of the write-ups around that that could provide some of the lessons learned that other states have experienced.

SENATOR HENSLEY: One of things that we did not do in the '92 school finance law -- I was actually in the house at that time -- is we did not build in a CPI index. We didn't index the base budget per pupil, which I think

was a real big mistake on our part and going back to Representative Rooker's question, you would advise us to do that under -- under this.

DR. LORI TAYLOR: Most definitely, yes, sir. I would -- I would advise the -- the use of some sort of inflation adjustment, and it -- it can be very attractive to automate that rather than requiring debate and -- on that end.

SENATOR HENSLEY: Thank you.

CHAIR BAUMGARDNER: Representative Johnson, we're back to you. Get out that list.

REPRESENTATIVE JOHNSON: Thank you, Madam Chair. I'll -- I'll jump into some of the assumptions and calculations.

So I think it was page 66 where you talked about the different weightings in general, and I think you mentioned that the reduced lunch student had a multiplier of 1.98 and the English learner had a multiplier of 1.22.

And then would I be correct in assuming the study would multiply those numbers so that a student would be a factor of 2.41 if I am both, because I -- I can imagine in some of my

communities where I would have an English learner who would also be reduced lunch and I -- I think it at least implies that would be a linear relationship, or is that different?

DR. LORI TAYLOR: One would add -- pardon me. One would add the student weight plus the ELA weight, most definitely, and that would -- then we'd have to take the log. So it's -- it's definitely a compounding weight.

REPRESENTATIVE JOHNSON: So it's not a simple multiplication?

DR. LORI TAYLOR: No, it's not a --

REPRESENTATIVE JOHNSON: Okay.

DR. LORI TAYLOR: -- simple multiplication.

REPRESENTATIVE JOHNSON: Okay. So --

MR. JASON WILLIS: Let me -- sorry, Representative Johnson.

So just -- I'm just thinking forward to the practicalities of applying that practice. So some states what we've seen is the way they think about this is creating an unduplicated count. So if I'm a student that is special education and low income, in the kind of early going of the formula you only count them once.

There is some research to suggest that where there are concentrations of these types of students there are additional costs and so some states will add concentration factors at some threshold for those districts that then provide additional funding in recognition of, if I have both English learners and special education students, there are sets of services that are going to need to be accounted for in both of those circumstances.

DR. LORI TAYLOR: But the estimation model treated them as separable.

REPRESENTATIVE JOHNSON: Okay. However, it sounds like not only is there a compounding effect, but there may be even more than that that you're mentioning that's dealt with in practice so that it may understate rather than overstate the actual cost?

DR. LORI TAYLOR: Well, we explored whether there was a -- a relationship between the two that was statistically significant and concluded that there was not in -- in the Kansas context, but it's clearly been found to be that other way in other contexts. We also looked for whether or not there was a

concentration of poverty effect, that if one looked at the -- get wonky on you -- wonkier on you for a moment -- to look at whether or not there was a quadratic relationship between poverty and cost rather than a linear relationship and basically found that it was linear, that the quadratic term could be discarded. And that is what one of the models presented in Appendix A lays out for folks so they can see that.

REPRESENTATIVE JOHNSON: Okay. Thank you.

Then that number, whatever number, I would also apply towards the rate on page 61 which Senator Johnson talked about in terms of the 1.2 or 1.9 if I'm looking at grades K-8 or high school to -- to get the eventual factor that that student might apply?

DR. LORI TAYLOR: Right. The -- the -- the grade level, the K-8s versus the -- the higher grades, basically what that yields are four possible base values, one for schools that serve only elementary grades, one for schools that serve only high school grades, one that's for schools that serve both, which would be

your -- like a K-12 building, and one for -- for buildings that serve neither, and that would be like a middle school or a junior high school, and then the base estimate for any single district is a weighted average of the basis for all the buildings the district currently operates. So it differs slightly from district to district because of the configuration of buildings in those districts.

REPRESENTATIVE JOHNSON: Related to that, you had mentioned that if we adjusted the no compensatory support number from 5.1 billion it would be about 4.7 billion if we reduced it by 5 percent, and that 5 percent reduction would equate to more than the 1.9.

Is there something else that goes on as we put the -- the percent change to the percent increase in the graduation rate? Am I making any sense?

DR. LORI TAYLOR: If you might, try to --

REPRESENTATIVE JOHNSON: So if I go from 5.1 to 4.7, that would be a difference of around 357 million, I think, which would be equivalent to essentially a 2.24 percent

increase, which would be above even the high school increase given that the range was between 1.2 and 1.9 for the grades. The number that we were given appeared to be a higher multiplier. Now, they're big enough numbers that a lot could be explained in rounding, but I was trying to just get to --

DR. LORI TAYLOR: On average what we found was that the -- each additional 1 percentage point in increase in the graduation rate as associated with a 1.5 percent increase in cost, but what we were estimating when you wring the -- the modest amount of inefficiency out of the system was that it would not cost as much as you currently spend to operate the districts as they currently are operated. And so then you come up from there for the increases in the graduation rate.

REPRESENTATIVE JOHNSON: Thank you. And then I know we're assuming linear and I know at some point linear breaks down in terms of getting from 89 to 90 percent versus 99 to 100 percent.

Is there something that would give us confidence that linear is a good assumption in

the relevant range where we're going from essentially 86 to 95 on the graduation rate?

DR. LORI TAYLOR: We -- we did do analyses very early on presuming that there could be a -- a square chart -- a nonlinear relationship between the graduation rate and the percentage change in cost. We did not detect that particular relationship. I would be glad to provide tables to that effect.

REPRESENTATIVE JOHNSON: Thank you. Something that would give us some sliding scales would be -- would be useful.

And then in the cost function analysis -- is there a way that we can delve into that to see where the money was being spent per student and -- and better define how we might spend it, whether it's on increasing salaries or increasing teachers or how that -- that plays through or does this data not get to that point?

MR. JASON WILLIS: So I think that this goes back to one of the things that I was saying earlier that currently Kansas, as far as we can observe, doesn't have a structure in which to identify, point out those schools and

districts that are at high levels of performance with certain characteristics and then basically study -- to your point, studying them, understanding how and where they're investing resources and how that might apply in other contexts. This study does not delve into looking at those categories of spending across schools or districts.

DR. LORI TAYLOR: Although it does clearly generate a -- or could be used to generate a set of best practitioners, districts that are particularly cost effective while accomplishing particularly high performance goals. The problem, typically, is one gets into that exercise -- you can use it for -- for drilling down in the data and seeing how they spend their resources. You don't want to fall into the trap of presuming that you can do some sort of successful schools analysis that way, because the demographic characteristics of the schools are frequently somewhat privileged.

REPRESENTATIVE JOHNSON: Thank you. To the ultimate end, not necessarily directly related on the study, I would assume one of the things that would help outcomes is more staff,

and I know at the margin I can increase staff and have that impact. I think you addressed it through saying staged implementation would be key. But at some point I am not able to acquire the degree of staff at that rate, just isn't anything -- if I increase the number of -- number of NBA teams by 20 percent I just don't have the talent to fill them, as much as I might want to do that. And that's one of the concerns that I had, just in the ability to implement as well, depending on where those monies were dedicated.

DR. LORI TAYLOR: Thank you very much for the question.

We are not making specific school size or class size recommendation or any presumption that additional resources should be spent specifically lowering class sizes. One of the cost drivers in Kansas is that the class sizes are already dysfunctionally low in rural areas where you just can't get to a cost-minimizing size classroom. And so it's -- it's not always going to be the case that the solution should be to lower class sizes. In a lot of rural Kansas that -- that would not be the best

solution. One might want to think to -- to other strategies about sharing resources or some sort of heavier reliance on virtual instruction for certain subject matters or that sort of thing.

What we -- and that kind of reinforces the point that there needs to be some support to school districts and figure out how best to use any additional resources being provided by the state to identify who best practitioners are in the state and what they -- they do. Other states have mechanisms by which you can do that.

I'm associated with the Texas Smart Schools project, which is essentially helping schools and districts in Texas identify their peers with similar kinds of kids, similar kinds of labor markets but yet they're able to accomplish more, and the question is figuring out who those -- who those best practitioners are so one can learn from them.

REPRESENTATIVE JOHNSON: Thank you. Thank you, Madam Chair.

CHAIR BAUMGARDNER: Could you please share with us, how is it that we have that

accountability, so that increase in -- in graduation rate, increase in scores, without having what, you know, we know has occurred in -- in some school districts and in some states whereby students are driven out of the schools? So how do we have that accountability and provide that support without having those negative consequences, I think, for -- for children?

MR. JASON WILLIS: So what I would -- what I would start with is probably being very transparent and open about agreements, like where does the state have agreement about how schools and districts are going to achieve some set of outcomes. That's typically the first step, right, so if -- if the State of Kansas could identify for itself, you know, here are the three priorities, the three things that we're going to focus on that we really believe is going to drive outcomes. Early literacy has been a very popular hot topic nationally and continuing kind of funding and research going into it identifying -- so we'll just pick that.

So early literacy becomes a driver of education policy here in Kansas. And if

schools and districts are clear that that is the priority and that's where they should be putting their focus to drive outcomes, some of the things that you could ask schools and districts for are, with the provision of additional sets of resources, how do they use those additional resources in combination with current funds to drive that outcome.

So they produce some type of, you know, short document or plan that makes clear to the public and to, you know, their practitioners where they're going as an organization. And that really speaks to both consensus about focus but also about prioritizing where people will spend their time and energy.

One of the things that we can observe in school districts across the country, particularly from a practical standpoint, is that without that kind of focus, the demands on school districts and schools are tremendous. I mean, you could be aiming in any number of directions given the requests and things that happen in your schools and districts. So unless you have that focus and you're aiming in a certain direction together, it's going to be

really difficult to stay away from getting pulled in one direction or another on a day-to-day or a week-to-week basis. And it's through those plans and those conversations that you create opportunities.

It's called -- you can call it accountability, but really what it is is what's going on for you as a school or district, what's the opportunity for you to be able to continue to make progress given the amount of resources that the state continues to invest in those organizations.

CHAIR BAUMGARDNER: Representative Rooker.

REPRESENTATIVE ROOKER: Thank you, Madam Chair, and I did promise one question.

In the study on page 45 at the top you -- you speak to the fact that it's not practical to make a onetime, significant investment in statewide -- in a statewide public education system and expect at the end of that school year to see dramatic improvement, and you're asking us to frame our expectations around long-term investment in our schools. So what is there -- and I -- when we see the charts

with the year-by-year-by-year improvement, I assume that this is all calibrated to get us to a long-term goal.

What is realistic in terms of expectations? We as lawmakers do the work to put these long-term investments in place, but we know there's lag time in -- in improvement in those student -- the performance measures. What is a realist expectation for us to begin to see that return on the investment in our students?

MR. JASON WILLIS: So I -- I'll start and if Lori wants to jump in. I think that really resides with the people that are in your schools and districts. I think their experience is paramount to understanding where they feel like they can make progress on a month-to-month basis and the annual basis for moving forward. And so I think, you know, to one of the prior questions, being able to get people in a room to have those kinds of conversations, it's not only the start of helping you to understand -- not you, the -- the body at large -- to understand, you know, what does that investment look like, what do we

get as a result of that, but it also starts to condition the system to a common understanding, right? If everybody's consistently talking about grad rates or early literacy or, you know, higher order math, that becomes a way in which the system starts to understand like this is the focus, this is where we should be putting our attention.

DR. LORI TAYLOR: I would add that there's a -- there's a really good quality and a really large amount of -- of research suggesting that early education, especially pre-K education, has some significant and persistent benefits, but you're not going to get a return with respect to the graduation rate the next year from an invest -- a greater investment or an increased investment in pre-kindergarten. It takes a while for those kids to matriculate through the system.

So part of the complexity of your question has to do with what type of intervention or where the district is planning to put additional resources. And that would lead me to kind of echo Jason's comments regarding asking for deliberate and

deliberative planning on the part of districts about how they would use additional resources should those be provided by the state.

CHAIR BAUMGARDNER: Senator Bollier, yes.

SENATOR BOLLIER: Quick request. Tying into what Representative Johnson was asking about graduation rates and how much can you expect percentage-wise, but would you be able to provide us with, essentially, a sliding scale for -- for a thing, you know, percentage change costs X amount of money from all of the things that we're trying to measure, so we can have a better, clearer understanding?

DR. LORI TAYLOR: For -- for all of the things we're trying to measure --

SENATOR BOLLIER: Well --

DR. LORI TAYLOR: -- or for the outcome measure?

SENATOR BOLLIER: -- you've used ELA, so we have set up that parameter that the school board set up. So if we were going to make a -- a 1 percent increase in that per year or what -- whatever, can that be teased down into that?

DR. LORI TAYLOR: Probably, and I'd definitely be willing to try.

SENATOR BOLLIER: Thank you.

CHAIR BAUMGARDNER: I think that we would like to see some type of sliding scale, if you would, for not only the graduation rate but for the math and the reading performance. So if --

DR. LORI TAYLOR: Yes, ma'am.

CHAIR BAUMGARDNER: If we could just kind of just see how that shifts and -- and what impact that has, I think that would be helpful.

DR. LORI TAYLOR: I would be glad to -- to provide you with whatever's possible there, yes.

CHAIR BAUMGARDNER: And, committee members, I know that Dr. Taylor will be providing us a PDF of the PowerPoint and so our two assistants will get that sent out to you. And, also, those of you in the audience who are already on the distribution list. You'll be receiving a copy of that PDF also.

At this point in time we are late on the senate side to be on the floor, so the meeting

is adjourned.

(The Hearing Proceedings went off the record at 2:34 p.m. with the conclusion of the hearing.)

C E R T I F I C A T E

STATE OF KANSAS)
)
COUNTY OF SHAWNEE)

I, Dana L. Burkdoll, a Certified Shorthand Reporter of the State of Kansas, do hereby certify that I was present at and reported in machine shorthand the proceedings had on the 29th of March, 2018, at the Kansas Statehouse, Old Supreme Courtroom, Southwest Eighth and Van Buren Streets, City of Topeka, County of Shawnee, State of Kansas.

I further certify that the foregoing transcript is a true, correct and complete transcript of all the testimony and proceedings aforesaid.

IN TESTIMONY WHEREOF, I have hereunto set my hand at my office in Topeka, Kansas, this day of , 2018.

Dana L. Burkdoll
Certified Shorthand Reporter
#1364

Col 7 Col 40 Col 41 Col 45

3/5/2018

USD #	County	District Name	Total Adjusted Enrollment (incl 4yr AR & KDG)	2017-18 Adjusted Legal General Fund Budget	General Fund Per Pupil	2017-18 LOB Base General Fund	Legal Max Local Option Budget	Legal LOB Per Pupil	LOB Percent Used (LOB Base)	LOB Percent (Actual General Fund)	LOB Mill Levy
Total		**STATE TOTALS**	**473,385.2**	**3,289,772,519**	**6,949**	**3,608,466,363**	**1,108,627,250**	**2,342**	**29.21%**	**33.70%**	**19.213**
258	Allen	Humboldt	602.0	5,421,368	9,006	5,194,709	1,714,254	2,848	33.00%	31.62%	19.944
257	Allen	Iola	1,264.0	9,464,709	7,488	10,217,375	3,065,213	2,425	30.00%	32.39%	18.364
256	Allen	Marmaton Valley	282.8	2,650,770	9,373	2,923,319	873,763	3,090	29.89%	32.96%	24.147
365	Anderson	Garnett	1,009.5	7,158,321	7,091	7,907,073	2,480,000	2,457	31.36%	34.64%	19.561
479	Anderson	Crest	217.5	2,144,812	9,861	2,360,563	442,000	2,032	18.72%	20.61%	16.005
377	Atchison	Atchison Co Comm Schools	568.0	4,871,486	8,577	5,251,545	1,646,046	2,898	31.34%	33.79%	23.448
409	Atchison	Atchison Public Schools	1,702.0	11,559,714	6,792	12,726,438	3,814,025	2,241	29.97%	32.99%	15.740
254	Barber	Barber County North	473.0	3,883,016	8,209	4,273,062	1,281,919	2,710	30.00%	33.01%	18.580
255	Barber	South Barber	249.5	2,259,384	9,056	2,494,834	748,450	3,000	30.00%	33.13%	17.274
355	Barton	Ellinwood Public Schools	450.5	3,582,966	7,953	3,946,845	1,222,847	2,714	30.98%	34.13%	23.839
428	Barton	Great Bend	3,006.5	19,824,092	6,594	21,929,911	6,578,973	2,188	30.00%	33.19%	18.789
431	Barton	Hoisington	735.6	5,958,124	8,100	6,572,501	1,794,000	2,439	27.30%	30.11%	18.146
234	Bourbon	Fort Scott	1,851.6	11,875,149	6,413	13,116,744	3,935,023	2,125	30.00%	33.14%	13.785
235	Bourbon	Uniontown	445.0	3,744,408	8,414	4,144,071	1,243,221	2,794	30.00%	33.20%	22.118
430	Brown	South Brown County	576.5	4,969,443	8,620	5,615,835	1,684,751	2,922	30.00%	33.90%	21.880
415	Brown	Hiawatha	914.6	6,950,187	7,599	7,648,638	2,203,155	2,409	28.80%	31.70%	18.703
394	Butler	Rose Hill Public Schools	1,552.0	9,378,613	6,043	10,210,160	3,352,165	2,160	32.83%	35.74%	14.535
396	Butler	Douglass Public Schools	679.8	5,185,871	7,629	5,705,104	1,866,089	2,745	32.71%	35.98%	20.224
206	Butler	Remington-Whitewater	511.2	4,207,101	8,230	4,635,368	1,440,000	2,817	31.07%	34.23%	19.951
385	Butler	Andover	5,171.0	31,806,773	6,151	31,761,353	9,846,019	1,904	31.00%	30.96%	13.398
205	Butler	Bluestem	498.3	4,264,788	8,559	4,699,982	1,409,995	2,830	30.00%	33.06%	21.520
402	Butler	Augusta	2,169.3	12,689,965	5,850	13,992,214	4,197,664	1,935	30.00%	33.08%	14.008
492	Butler	Flinthills	269.7	2,404,001	8,914	2,655,627	796,688	2,954	30.00%	33.14%	23.899
490	Butler	El Dorado	1,903.8	12,186,125	6,401	13,652,141	4,082,172	2,144	29.90%	33.50%	16.699
375	Butler	Circle	1,889.8	11,119,554	5,884	12,190,400	3,626,947	1,919	29.75%	32.62%	14.678
284	Chase	Chase County	350.5	2,894,894	8,259	3,250,654	975,196	2,782	30.00%	33.69%	17.564
286	Chautauqua	Chautauqua Co Community	375.4	3,220,809	8,580	3,711,345	1,101,146	2,933	29.67%	34.19%	22.356
285	Chautauqua	Cedar Vale	182.5	1,773,857	9,720	1,960,834	405,000	2,219	20.65%	22.83%	16.470
493	Cherokee	Columbus	962.0	7,344,200	7,634	8,107,251	2,432,175	2,528	30.00%	33.12%	18.266
499	Cherokee	Galena	813.5	6,230,249	7,659	6,861,585	2,058,476	2,530	30.00%	33.04%	17.652
508	Cherokee	Baxter Springs	1,008.5	7,588,371	7,524	8,231,807	2,469,542	2,449	30.00%	32.54%	21.771
404	Cherokee	Riverton	739.0	5,704,343	7,719	6,339,320	1,881,052	2,545	29.67%	32.98%	17.817
297	Cheyenne	St Francis Comm Sch	281.5	2,346,715	8,336	2,597,604	777,800	2,763	29.94%	33.14%	16.653
103	Cheyenne	Cheylin	136.0	1,527,888	11,234	1,721,345	513,575	3,776	29.84%	33.61%	10.215
219	Clark	Minneola	243.5	2,070,301	8,502	2,307,386	692,216	2,843	30.00%	33.44%	23.775
220	Clark	Ashland	203.4	1,914,467	9,412	2,142,402	637,602	3,135	29.76%	33.30%	24.840
379	Clay	Clay Center	1,348.1	8,982,843	6,663	9,856,373	2,956,912	2,193	30.00%	32.92%	14.258
334	Cloud	Southern Cloud	186.5	2,070,106	11,100	2,131,585	703,423	3,772	33.00%	33.98%	27.582
333	Cloud	Concordia	1,073.0	7,472,392	6,964	8,442,304	2,505,212	2,335	29.67%	33.53%	17.512
243	Coffey	Lebo-Waverly	436.7	3,558,651	8,149	3,793,342	1,138,003	2,606	30.00%	31.98%	18.598
244	Coffey	Burlington	856.0	6,738,092	7,872	7,378,030	2,213,409	2,586	30.00%	32.85%	4.559
245	Coffey	LeRoy-Gridley	213.5	2,024,232	9,481	2,267,620	680,286	3,186	30.00%	33.61%	24.697
300	Comanche	Comanche County	329.5	2,920,775	8,864	3,218,450	965,535	2,930	30.00%	33.06%	23.458
462	Cowley	Central	311.7	2,732,893	8,768	3,020,805	906,242	2,907	30.00%	33.16%	20.034
465	Cowley	Winfield	2,209.2	14,671,174	6,641	16,131,973	4,839,592	2,191	30.00%	32.99%	17.959
470	Cowley	Arkansas City	2,813.5	20,175,418	7,171	22,234,196	6,670,259	2,371	30.00%	33.06%	15.238
463	Cowley	Udall	339.2	2,730,490	8,050	3,053,021	913,078	2,692	29.91%	33.44%	21.296
471	Cowley	Dexter	142.9	1,424,934	9,972	1,629,590	479,313	3,354	29.41%	33.64%	21.920
246	Crawford	Northeast	470.0	4,083,282	8,688	4,457,355	1,337,207	2,845	30.00%	32.75%	18.362
248	Crawford	Girard	1,018.8	7,533,669	7,395	8,302,071	2,490,621	2,445	30.00%	33.06%	18.110
250	Crawford	Pittsburg	3,004.3	20,349,370	6,773	22,139,016	6,641,705	2,211	30.00%	32.64%	17.647
249	Crawford	Frontenac Public Schools	933.0	6,465,049	6,929	7,122,399	2,131,332	2,284	29.92%	32.97%	16.728
247	Crawford	Cherokee	521.6	4,839,755	9,279	5,173,131	1,492,402	2,861	28.85%	30.84%	20.897
294	Decatur	Oberlin	336.0	2,744,911	8,169	3,032,587	909,776	2,708	30.00%	33.14%	14.918
481	Dickinson	Rural Vista	304.5	2,528,587	8,304	2,915,424	962,090	3,160	33.00%	38.05%	28.826

435	Dickinson	Abilene	1,571.5	9,927,352	6,317	10,879,516	3,263,855	2,077	30.00%	32.88%	17.242
473	Dickinson	Chapman	1,085.0	7,698,731	7,096	8,491,545	2,547,464	2,348	30.00%	33.09%	19.197
487	Dickinson	Herington	450.6	3,824,160	8,487	4,183,879	1,255,164	2,786	30.00%	32.82%	18.624
393	Dickinson	Solomon	314.0	2,603,099	8,290	2,890,022	863,504	2,750	29.88%	33.17%	19.908
111	Doniphan	Doniphan West Schools	337.5	2,891,531	8,567	3,317,918	995,375	2,949	30.00%	34.42%	15.103
114	Doniphan	Riverside	600.8	5,211,403	8,674	5,593,075	1,677,923	2,793	30.00%	32.20%	18.855
429	Doniphan	Troy Public Schools	332.1	2,627,535	7,912	2,914,818	869,327	2,618	29.82%	33.09%	19.799
497	Douglas	Lawrence	10,738.3	74,958,877	6,981	76,347,197	25,194,575	2,346	33.00%	33.61%	16.702
348	Douglas	Baldwin City	1,390.7	8,871,784	6,379	9,737,648	2,921,294	2,101	30.00%	32.93%	16.651
491	Douglas	Eudora	1,688.6	10,133,677	6,001	11,032,912	3,309,874	1,960	30.00%	32.66%	13.653
347	Edwards	Kinsley-Offerle	333.5	3,046,964	9,136	3,358,301	1,007,490	3,021	30.00%	33.07%	24.820
502	Edwards	Lewis	116.0	1,299,546	11,203	1,436,029	366,000	3,155	25.49%	28.16%	11.890
282	Elk	West Elk	343.0	3,259,682	9,503	3,584,198	1,075,259	3,135	30.00%	32.99%	28.136
283	Elk	Elk Valley	113.5	1,643,288	14,478	1,608,747	460,000	4,053	28.59%	27.99%	23.450
388	Ellis	Ellis	437.1	3,208,405	7,340	3,590,138	1,077,041	2,464	30.00%	33.57%	18.152
432	Ellis	Victoria	294.5	2,209,309	7,502	2,498,156	748,369	2,541	29.96%	33.87%	20.496
489	Ellis	Hays	2,986.1	18,264,834	6,117	20,434,790	5,995,621	2,008	29.34%	32.83%	14.920
112	Ellsworth	Central Plains	486.4	4,171,770	8,577	4,607,093	1,382,128	2,842	30.00%	33.13%	14.953
327	Ellsworth	Ellsworth	639.7	4,774,751	7,464	5,301,131	1,582,931	2,474	29.86%	33.15%	18.611
457	Finney	Garden City	7,447.0	51,257,178	6,883	56,915,683	17,074,705	2,293	30.00%	33.31%	14.958
363	Finney	Holcomb	1,000.5	6,811,402	6,808	7,559,964	2,150,000	2,149	28.44%	31.56%	17.804
381	Ford	Spearville	354.0	2,660,785	7,516	2,944,175	883,253	2,495	30.00%	33.20%	18.752
443	Ford	Dodge City	6,835.3	52,121,968	7,625	57,616,376	17,284,913	2,529	30.00%	33.16%	22.898
459	Ford	Bucklin	226.9	2,054,855	9,056	2,265,572	679,672	2,995	30.00%	33.08%	21.474
287	Franklin	West Franklin	596.0	5,150,915	8,642	5,748,139	1,724,442	2,893	30.00%	33.48%	20.703
289	Franklin	Wellsville	775.5	5,657,273	7,295	6,234,537	1,870,361	2,412	30.00%	33.06%	16.024
290	Franklin	Ottawa	2,411.4	16,002,164	6,636	17,574,951	5,272,485	2,186	30.00%	32.95%	15.398
288	Franklin	Central Heights	555.5	4,739,284	8,532	5,248,220	1,568,270	2,823	29.88%	33.09%	19.726
475	Geary	Geary County Schools	8,304.4	51,267,909	6,174	56,383,490	16,915,047	2,037	30.00%	32.99%	17.198
293	Gove	Quinter Public Schools	297.5	2,385,974	8,020	2,631,156	815,658	2,742	31.00%	34.19%	19.222
292	Gove	Wheatland	112.0	1,213,017	10,831	1,405,724	419,831	3,748	29.87%	34.61%	18.202
291	Gove	Grinnell Public Schools	90.0	927,389	10,304	1,025,876	225,000	2,500	21.93%	24.26%	8.765
281	Graham	Graham County	363.8	2,935,997	8,070	3,396,872	1,017,176	2,796	29.94%	34.64%	22.073
214	Grant	Ulysses	1,694.0	11,056,945	6,527	12,174,441	3,652,332	2,156	30.00%	33.03%	16.752
477	Gray	Ingalls	241.5	2,031,042	8,410	2,268,869	701,500	2,905	30.92%	34.54%	23.701
371	Gray	Montezuma	210.5	2,112,190	10,034	2,144,273	643,282	3,056	30.00%	30.46%	22.579
476	Gray	Copeland	97.5	1,299,737	13,331	1,196,363	358,909	3,681	30.00%	27.61%	15.824
102	Gray	Cimmaron-Ensign	647.0	4,880,510	7,543	5,419,751	1,620,941	2,505	29.91%	33.21%	16.731
200	Greeley	Greeley County Schools	252.5	2,200,095	8,713	2,453,506	733,762	2,906	29.91%	33.35%	19.778
386	Greenwood	Madison-Virgil	230.5	2,136,800	9,270	2,356,870	707,061	3,068	30.00%	33.09%	24.567
390	Greenwood	Hamilton	76.5	908,160	11,871	998,438	299,531	3,915	30.00%	32.98%	33.825
389	Greenwood	Eureka	640.0	5,308,751	8,295	5,933,180	1,761,904	2,753	29.70%	33.19%	20.566
494	Hamilton	Syracuse	519.5	4,400,591	8,471	4,892,743	1,467,823	2,825	30.00%	33.36%	25.023
511	Harper	Attica	168.5	1,613,617	9,576	1,782,459	534,738	3,174	30.00%	33.14%	27.955
361	Harper	Anthony-Harper	826.5	6,909,183	8,360	7,575,894	2,269,266	2,746	29.95%	32.84%	20.980
460	Harvey	Hesston	798.1	5,302,342	6,644	5,875,504	1,935,508	2,425	32.94%	36.50%	17.539
439	Harvey	Sedgwick Public Schools	477.0	3,600,593	7,548	3,973,834	1,192,150	2,499	30.00%	33.11%	19.644
440	Harvey	Halstead	752.5	5,612,807	7,459	6,225,784	1,867,735	2,482	30.00%	33.28%	19.361
373	Harvey	Newton	3,417.5	21,161,675	6,192	23,315,430	6,984,257	2,044	29.96%	33.00%	16.152
369	Harvey	Burrton	247.0	2,352,323	9,524	2,609,090	730,665	2,958	28.00%	31.06%	25.473
374	Haskell	Sublette	458.2	3,783,847	8,258	4,222,281	1,266,684	2,764	30.00%	33.48%	19.700
507	Haskell	Satanta	304.0	2,731,291	8,985	3,063,788	919,136	3,023	30.00%	33.65%	15.475
227	Hodgeman	Hodgeman County Schools	298.0	2,374,356	7,968	2,711,128	813,338	2,729	30.00%	34.26%	23.485
337	Jackson	Royal Valley	856.4	6,780,106	7,917	7,289,623	2,186,887	2,554	30.00%	32.25%	17.165
335	Jackson	North Jackson	375.0	3,039,753	8,106	3,389,248	1,010,578	2,695	29.82%	33.25%	19.163
336	Jackson	Holton	1,064.5	7,791,820	7,320	8,784,767	2,525,111	2,372	28.74%	32.41%	16.353
339	Jefferson	Jefferson County North	456.5	3,808,504	8,343	4,179,792	1,253,938	2,747	30.00%	32.92%	23.945
341	Jefferson	Oskaloosa Public Schools	593.5	5,258,676	8,860	5,757,454	1,727,236	2,910	30.00%	32.85%	20.443
342	Jefferson	McLouth	463.8	4,017,217	8,662	4,398,587	1,319,576	2,845	30.00%	32.85%	21.004
343	Jefferson	Perry Public Schools	754.5	5,986,566	7,934	6,575,973	1,972,792	2,615	30.00%	32.95%	18.430
338	Jefferson	Valley Falls	385.5	3,301,065	8,563	3,572,942	1,068,650	2,772	29.91%	32.37%	21.004
340	Jefferson	Jefferson West	874.0	6,558,223	7,504	7,211,414	2,156,824	2,468	29.91%	32.89%	20.483

107	Jewell	Rock Hills	299.5	2,787,775	9,308	3,070,379	800,000	2,671	26.06%	28.70%	15.303
230	Johnson	Spring Hill	2,743.1	23,371,646	8,520	20,580,106	6,791,435	2,476	33.00%	29.06%	18.294
231	Johnson	Gardner Edgerton	5,818.5	35,987,500	6,185	39,537,649	13,047,424	2,242	33.00%	36.26%	18.592
233	Johnson	Olathe	28,772.7	191,219,199	6,646	210,806,871	69,566,267	2,418	33.00%	36.38%	18.822
512	Johnson	Shawnee Mission Pub Sch	27,446.1	165,932,526	6,046	189,628,208	62,577,309	2,280	33.00%	37.71%	16.058
229	Johnson	Blue Valley	22,241.3	141,616,346	6,367	156,035,068	51,456,901	2,314	32.98%	36.34%	15.403
232	Johnson	De Soto	7,085.1	40,390,202	5,701	44,720,654	14,710,698	2,076	32.89%	36.42%	15.920
216	Kearny	Deerfield	204.0	2,026,635	9,934	2,310,352	693,106	3,398	30.00%	34.20%	19.002
215	Kearny	Lakin	623.5	4,812,341	7,718	5,291,549	1,574,668	2,526	29.76%	32.72%	19.889
331	Kingman	Kingman - Norwich	917.2	7,396,589	8,064	7,991,517	2,397,455	2,614	30.00%	32.41%	19.832
332	Kingman	Cunningham	157.0	1,610,011	10,255	1,783,072	532,228	3,390	29.85%	33.06%	8.693
422	Kiowa	Kiowa County	255.0	2,812,235	11,028	2,518,167	755,450	2,963	30.00%	26.86%	11.404
474	Kiowa	Haviland	103.5	1,133,297	10,950	1,257,060	377,118	3,644	30.00%	33.28%	17.189
505	Labette	Chetopa-St. Paul	438.0	3,605,680	8,232	3,984,650	1,314,935	3,002	33.00%	36.47%	33.407
504	Labette	Oswego	451.0	3,676,306	8,151	4,085,366	1,216,316	2,697	29.77%	33.09%	17.692
506	Labette	Labette County	1,541.5	10,716,851	6,952	11,968,298	3,540,112	2,297	29.58%	33.03%	16.841
503	Labette	Parsons	1,282.9	9,018,500	7,030	10,258,606	3,009,558	2,346	29.34%	33.37%	20.044
468	Lane	Healy Public Schools	74.5	816,823	10,964	900,325	297,107	3,988	33.00%	36.37%	26.140
482	Lane	Dighton	226.5	2,006,205	8,857	2,223,855	630,000	2,781	28.33%	31.40%	16.404
207	Leavenworth	Ft Leavenworth	1,758.5	9,720,559	5,528	10,703,262	3,532,076	2,009	33.00%	36.34%	13.777
449	Leavenworth	Easton	606.0	4,850,064	8,003	5,327,392	1,598,218	2,637	30.00%	32.95%	18.221
453	Leavenworth	Leavenworth	3,721.3	24,865,118	6,682	26,973,603	8,092,081	2,175	30.00%	32.54%	17.314
464	Leavenworth	Tonganoxie	1,943.7	11,411,492	5,871	12,582,439	3,774,732	1,942	30.00%	33.08%	14.803
469	Leavenworth	Lansing	2,629.7	15,240,026	5,795	16,755,440	5,026,632	1,911	30.00%	32.98%	15.745
458	Leavenworth	Basehor-Linwood	2,328.6	14,342,200	6,159	14,916,569	4,448,570	1,910	29.82%	31.02%	14.618
298	Lincoln	Lincoln	355.5	3,099,042	8,717	3,412,684	1,023,805	2,880	30.00%	33.04%	23.768
299	Lincoln	Sylvan Grove	243.8	2,269,399	9,308	2,554,634	575,000	2,358	22.51%	25.34%	15.077
344	Linn	Pleasanton	342.0	2,746,806	8,032	2,933,068	967,912	2,830	33.00%	35.24%	23.453
362	Linn	Prairie View	907.4	7,446,753	8,207	8,172,355	2,591,360	2,856	31.71%	34.80%	13.532
346	Linn	Jayhawk	555.5	4,639,334	8,352	5,140,016	1,542,005	2,776	30.00%	33.24%	21.609
275	Logan	Triplains	71.0	798,796	11,251	879,920	290,374	4,090	33.00%	36.35%	11.845
274	Logan	Oakley	402.1	3,244,776	8,070	3,612,111	1,096,211	2,726	30.35%	33.78%	18.413
251	Lyon	North Lyon County	415.5	3,554,204	8,554	3,932,080	1,289,141	3,103	32.79%	36.27%	12.506
252	Lyon	Southern Lyon County	511.5	4,115,764	8,046	4,542,564	1,362,769	2,664	30.00%	33.11%	24.963
253	Lyon	Emporia	4,497.2	30,169,379	6,708	33,363,762	9,997,949	2,223	29.97%	33.14%	16.544
398	Marion	Peabody-Burns	248.5	2,421,413	9,744	2,649,347	874,285	3,518	33.00%	36.11%	24.492
410	Marion	Durham-Hillsboro-Lehigh	571.0	4,639,745	8,126	5,069,120	1,672,810	2,930	33.00%	36.05%	22.455
411	Marion	Goessel	285.0	2,496,139	8,758	2,741,273	904,620	3,174	33.00%	36.24%	24.374
408	Marion	Marion-Florence	521.5	4,313,441	8,271	4,685,164	1,405,549	2,695	30.00%	32.59%	20.405
397	Marion	Centre	214.5	2,992,870	13,953	2,534,770	755,851	3,524	29.82%	25.26%	14.361
498	Marshall	Valley Heights	398.0	3,246,863	8,158	3,745,097	1,235,882	3,105	33.00%	38.06%	22.979
380	Marshall	Vermillion	565.5	4,050,467	7,163	4,515,310	1,354,593	2,395	30.00%	33.44%	16.947
364	Marshall	Marysville	708.0	5,297,935	7,483	6,105,177	1,811,348	2,558	29.67%	34.19%	17.936
400	McPherson	Smoky Valley	869.3	7,162,460	8,239	7,207,265	2,378,397	2,736	33.00%	33.21%	15.726
418	McPherson	McPherson	2,366.4	15,356,590	6,489	16,723,738	5,518,834	2,332	33.00%	35.94%	20.361
419	McPherson	Canton-Galva	368.4	3,086,623	8,378	3,400,850	1,122,281	3,046	33.00%	36.36%	24.099
423	McPherson	Moundridge	392.3	3,121,475	7,957	3,433,927	1,133,196	2,889	33.00%	36.30%	20.718
448	McPherson	Inman	421.1	3,396,287	8,065	3,738,531	1,225,000	2,909	32.77%	36.07%	21.828
225	Meade	Fowler	143.0	1,491,227	10,428	1,565,790	516,711	3,613	33.00%	34.65%	29.346
226	Meade	Meade	398.0	2,960,033	7,437	3,490,796	1,113,883	2,799	31.91%	37.63%	17.976
416	Miami	Louisburg	1,720.9	9,646,506	5,606	10,556,142	3,483,527	2,024	33.00%	36.11%	15.612
367	Miami	Osawatomie	1,147.0	9,379,648	8,178	10,282,036	3,383,293	2,950	32.90%	36.07%	18.686
368	Miami	Paola	2,009.5	12,581,569	6,261	13,890,859	4,550,497	2,264	32.76%	36.17%	17.119
272	Mitchell	Waconda	309.0	2,623,930	8,492	2,891,104	867,331	2,807	30.00%	33.05%	22.260
273	Mitchell	Beloit	792.0	5,942,500	7,503	6,674,597	1,956,581	2,470	29.31%	32.93%	19.302
436	Montgomery	Caney Valley	751.5	5,480,148	7,292	6,112,939	1,833,882	2,440	30.00%	33.46%	20.204
447	Montgomery	Cherryvale	815.4	6,144,803	7,536	6,812,688	2,043,806	2,507	30.00%	33.26%	16.060
445	Montgomery	Coffeyville	1,730.6	12,201,579	7,050	13,553,108	3,946,454	2,280	29.12%	32.34%	17.512
446	Montgomery	Independence	1,996.7	12,694,613	6,358	14,424,703	4,108,647	2,058	28.48%	32.37%	15.268
417	Morris	Morris County	750.2	5,605,217	7,472	6,195,763	1,854,823	2,472	29.94%	33.09%	21.644
217	Morton	Rolla	162.5	1,592,755	9,802	1,707,064	563,331	3,467	33.00%	35.37%	21.785
218	Morton	Elkhart	479.4	7,484,930	15,613	4,140,837	1,242,251	2,591	30.00%	16.60%	6.595

113	Nemaha	Prairie Hills	1,149.7	7,537,690	6,556	8,642,197	2,587,002	2,250	29.93%	34.32%	17.261
115	Nemaha	Nemaha Central	571.8	4,307,652	7,533	4,822,977	1,210,000	2,116	25.09%	28.09%	14.250
413	Neosho	Chanute Public Schools	1,809.2	12,664,015	7,000	13,915,327	4,174,598	2,307	30.00%	32.96%	14.891
101	Neosho	Erie-Galesburg	521.5	4,558,828	8,742	5,151,572	1,526,344	2,927	29.63%	33.48%	25.340
106	Ness	Western Plains	116.0	1,281,119	11,044	1,464,667	483,340	4,167	33.00%	37.73%	12.120
303	Ness	Ness City	305.1	2,419,624	7,931	2,679,826	803,948	2,635	30.00%	33.23%	15.113
212	Norton	Northern Valley	163.5	1,731,987	10,593	1,953,749	586,125	3,585	30.00%	33.84%	26.919
211	Norton	Norton Community Schools	706.7	5,385,266	7,620	5,967,630	1,778,840	2,517	29.81%	33.03%	20.015
421	Osage	Lyndon	432.5	3,472,994	8,030	3,818,585	1,145,576	2,649	30.00%	32.99%	20.558
434	Osage	Santa Fe Trail	994.2	7,797,195	7,843	8,550,879	2,565,264	2,580	30.00%	32.90%	17.615
454	Osage	Burlingame Public School	301.5	2,476,910	8,215	2,726,595	817,979	2,713	30.00%	33.02%	21.772
420	Osage	Osage City	670.5	5,241,300	7,817	5,733,745	1,719,719	2,565	29.99%	32.81%	21.472
456	Osage	Marais Des Cygnes Valley	234.5	2,484,767	10,596	2,576,184	670,000	2,857	26.01%	26.96%	23.796
392	Osborne	Osborne County	285.1	2,487,726	8,726	2,756,730	824,056	2,890	29.89%	33.12%	22.855
240	Ottawa	Twin Valley	588.0	4,555,623	7,748	5,081,839	1,662,486	2,827	32.71%	36.49%	22.069
239	Ottawa	North Ottawa County	619.4	4,768,342	7,698	5,256,024	1,700,000	2,745	32.34%	35.65%	19.451
496	Pawnee	Pawnee Heights	143.5	1,472,897	10,264	1,615,481	528,664	3,684	32.72%	35.89%	26.744
495	Pawnee	Ft Larned	911.1	7,516,057	8,249	8,268,011	2,480,403	2,722	30.00%	33.00%	19.211
110	Phillips	Thunder Ridge Schools	215.5	2,218,923	10,297	2,503,948	751,184	3,486	30.00%	33.85%	26.051
325	Phillips	Phillipsburg	620.5	4,778,757	7,701	5,259,142	1,574,914	2,538	29.95%	32.96%	18.249
326	Phillips	Logan	155.5	1,646,747	10,590	1,755,697	523,611	3,367	29.82%	31.80%	23.837
321	Pottawatomie	Kaw Valley	1,156.0	8,336,486	7,211	9,140,242	3,016,280	2,609	33.00%	36.18%	9.380
322	Pottawatomie	Onaga-Havensville-Wheaton	307.5	2,499,744	8,129	2,765,150	829,545	2,698	30.00%	33.19%	22.047
323	Pottawatomie	Rock Creek	1,035.1	7,074,195	6,834	7,808,705	2,342,612	2,263	30.00%	33.11%	17.694
320	Pottawatomie	Wamego	1,536.1	9,425,657	6,136	10,315,533	3,078,900	2,004	29.85%	32.67%	15.610
438	Pratt	Skyline Schools	410.0	3,300,143	8,049	3,637,850	1,127,734	2,751	31.00%	34.17%	20.183
382	Pratt	Pratt	1,128.0	8,289,206	7,349	8,943,580	2,683,074	2,379	30.00%	32.37%	17.760
105	Rawlins	Rawlins County	339.4	2,815,016	8,294	3,128,179	883,570	2,603	28.25%	31.39%	20.026
312	Reno	Haven Public Schools	825.0	6,717,104	8,142	7,309,354	2,225,813	2,698	30.45%	33.14%	17.180
308	Reno	Hutchinson Public Schools	4,813.9	31,345,847	6,512	34,525,732	10,357,720	2,152	30.00%	33.04%	17.887
309	Reno	Nickerson	1,119.0	8,509,130	7,604	9,282,065	2,784,620	2,488	30.00%	32.73%	19.670
310	Reno	Fairfield	300.0	2,895,937	9,653	3,198,165	959,450	3,198	30.00%	33.13%	22.178
311	Reno	Pretty Prairie	253.0	2,233,746	8,829	2,464,828	739,448	2,923	30.00%	33.10%	24.197
313	Reno	Buhler	2,287.1	14,145,587	6,185	15,548,441	4,664,532	2,039	30.00%	32.98%	15.964
109	Republic	Republic County	507.6	4,143,999	8,164	4,681,404	1,404,287	2,767	30.00%	33.89%	19.372
426	Republic	Pike Valley	226.5	2,065,894	9,121	2,342,839	685,000	3,024	29.24%	33.16%	23.175
376	Rice	Sterling	519.7	4,038,048	7,770	4,450,939	1,335,282	2,569	30.00%	33.07%	19.885
401	Rice	Chase-Raymond	161.5	1,720,176	10,651	1,902,523	570,757	3,534	30.00%	33.18%	25.800
444	Rice	Little River	320.9	2,637,150	8,218	2,899,922	869,977	2,711	30.00%	32.99%	15.728
405	Rice	Lyons	814.7	6,754,517	8,291	7,441,321	1,675,000	2,056	22.51%	24.80%	12.973
384	Riley	Blue Valley	215.5	2,091,933	9,707	2,304,399	759,859	3,526	32.97%	36.32%	26.394
383	Riley	Manhattan-Ogden	6,184.9	39,431,583	6,375	42,934,273	14,055,405	2,273	32.74%	35.65%	17.620
378	Riley	Riley County	683.9	5,178,556	7,572	5,702,941	1,710,882	2,502	30.00%	33.04%	17.792
269	Rooks	Palco	102.0	1,110,864	10,891	1,328,089	398,427	3,906	30.00%	35.87%	20.890
271	Rooks	Stockton	335.5	2,778,562	8,282	3,062,602	918,781	2,739	30.00%	33.07%	20.897
270	Rooks	Plainville	341.3	2,796,589	8,194	3,076,037	922,138	2,702	29.98%	32.97%	16.756
395	Rush	LaCrosse	291.0	2,448,067	8,413	2,801,745	838,000	2,880	29.91%	34.23%	22.014
403	Rush	Otis-Bison	225.3	2,269,243	10,072	2,465,518	731,035	3,245	29.65%	32.21%	23.488
399	Russell	Paradise	111.5	1,231,616	11,046	1,343,664	443,409	3,977	33.00%	36.00%	18.619
407	Russell	Russell County	830.1	6,181,659	7,447	6,866,214	2,252,219	2,713	32.80%	36.43%	20.856
307	Saline	Ell-Saline	461.5	3,652,448	7,914	4,016,194	1,325,344	2,872	33.00%	36.29%	24.781
305	Saline	Salina	7,167.8	48,280,143	6,736	53,084,793	15,925,438	2,222	30.00%	32.99%	16.380
306	Saline	Southeast Of Saline	699.5	5,116,864	7,315	5,651,893	1,695,568	2,424	30.00%	33.14%	18.511
466	Scott	Scott County	986.5	6,809,049	6,902	7,519,783	2,255,935	2,287	30.00%	33.13%	18.618
263	Sedgwick	Mulvane	1,752.0	10,383,151	5,926	11,428,745	3,771,486	2,153	33.00%	36.32%	18.274
267	Sedgwick	Renwick	1,883.5	10,860,667	5,766	11,945,058	3,941,869	2,093	33.00%	36.29%	16.469
259	Sedgwick	Wichita	48,706.9	347,413,655	7,133	381,626,679	114,488,004	2,351	30.00%	32.95%	17.553
260	Sedgwick	Derby	6,782.1	40,920,832	6,034	45,080,416	13,524,125	1,994	30.00%	33.05%	17.170
261	Sedgwick	Haysville	5,500.1	35,783,595	6,506	39,473,901	11,842,170	2,153	30.00%	33.09%	21.023
265	Sedgwick	Goddard	5,584.1	33,326,964	5,968	36,645,334	10,993,600	1,969	30.00%	32.99%	15.995
266	Sedgwick	Maize	6,776.4	41,891,628	6,182	44,082,370	13,224,711	1,952	30.00%	31.57%	14.788
262	Sedgwick	Valley Center Pub Sch	2,786.7	17,380,169	6,237	18,907,559	5,665,398	2,033	29.96%	32.60%	14.913

264	Sedgwick	Clearwater	1,131.5	7,501,636	6,630	8,260,884	2,456,795	2,171	29.74%	32.75%	16.257
268	Sedgwick	Cheney	780.9	5,844,353	7,484	6,513,326	1,850,500	2,370	28.41%	31.66%	19.048
483	Seward	Kismet-Plains	694.5	6,770,941	9,749	7,510,354	1,900,000	2,736	25.30%	28.06%	22.173
480	Seward	Liberal	4,878.0	36,383,694	7,459	40,460,584	10,150,000	2,081	25.09%	27.90%	17.152
501	Shawnee	Topeka Public Schools	13,456.9	97,911,531	7,276	107,461,572	33,600,000	2,497	31.27%	34.32%	16.609
345	Shawnee	Seaman	3,751.0	24,056,033	6,413	26,387,975	7,916,393	2,110	30.00%	32.91%	16.457
372	Shawnee	Silver Lake	691.5	4,780,360	6,913	5,344,150	1,603,245	2,319	30.00%	33.54%	16.140
437	Shawnee	Auburn Washburn	6,243.9	37,360,757	5,984	41,158,192	12,347,458	1,978	30.00%	33.05%	14.796
450	Shawnee	Shawnee Heights	3,494.5	21,577,899	6,175	23,734,889	7,120,467	2,038	30.00%	33.00%	14.799
412	Sheridan	Hoxie Community Schools	383.5	2,902,748	7,569	3,254,921	976,476	2,546	30.00%	33.64%	20.160
352	Sherman	Goodland	919.7	7,168,725	7,795	7,589,244	2,276,773	2,476	30.00%	31.76%	17.922
237	Smith	Smith Center	395.0	3,385,070	8,570	3,755,077	1,239,175	3,137	33.00%	36.61%	23.452
350	Stafford	St John-Hudson	335.4	2,826,634	8,428	3,145,768	1,028,028	3,065	32.68%	36.37%	21.880
351	Stafford	Macksville	234.5	2,379,564	10,147	2,625,320	787,596	3,359	30.00%	33.10%	15.000
349	Stafford	Stafford	244.4	2,286,625	9,356	2,529,410	757,745	3,100	29.96%	33.14%	25.071
452	Stanton	Stanton County	440.2	3,538,900	8,039	3,931,440	1,179,432	2,679	30.00%	33.33%	21.566
209	Stevens	Moscow Public Schools	173.5	1,748,619	10,078	1,955,713	645,385	3,720	33.00%	36.91%	21.866
210	Stevens	Hugoton Public Schools	1,086.9	7,752,797	7,133	8,601,280	2,580,384	2,374	30.00%	33.28%	18.196
360	Sumner	Caldwell	232.0	2,222,514	9,580	2,439,410	805,005	3,470	33.00%	36.22%	27.160
509	Sumner	South Haven	200.5	1,961,738	9,784	2,166,113	714,817	3,565	33.00%	36.44%	27.194
353	Sumner	Wellington	1,595.5	11,097,421	6,955	12,184,683	3,655,405	2,291	30.00%	32.94%	18.625
356	Sumner	Conway Springs	485.5	3,690,728	7,602	4,074,995	1,222,499	2,518	30.00%	33.12%	19.420
358	Sumner	Oxford	297.5	2,931,949	9,855	2,940,967	882,290	2,966	30.00%	30.09%	15.719
359	Sumner	Argonia Public Schools	187.5	1,830,341	9,762	2,021,305	606,392	3,234	30.00%	33.13%	23.342
357	Sumner	Belle Plaine	608.5	4,920,940	8,087	5,530,841	1,630,000	2,679	29.47%	33.12%	14.996
315	Thomas	Colby Public Schools	895.4	6,123,972	6,839	7,142,335	2,138,929	2,389	29.95%	34.93%	17.966
316	Thomas	Golden Plains	178.1	1,921,278	10,788	2,211,497	660,351	3,708	29.86%	34.37%	23.996
314	Thomas	Brewster	147.5	1,291,134	8,753	1,536,418	444,627	3,014	28.94%	34.44%	15.637
208	Trego	Wakeeney	390.0	3,103,448	7,958	3,498,093	1,031,917	2,646	29.50%	33.25%	20.160
329	Wabaunsee	Mill Creek Valley	440.0	3,690,451	8,387	3,989,772	1,316,625	2,992	33.00%	35.68%	20.966
330	Wabaunsee	Mission Valley	491.5	4,307,652	8,764	4,732,664	1,419,799	2,889	30.00%	32.96%	21.769
242	Wallace	Weskan	103.0	1,069,201	10,381	1,183,397	390,521	3,791	33.00%	36.52%	28.143
241	Wallace	Wallace County Schools	200.5	1,774,257	8,849	2,012,042	592,433	2,955	29.44%	33.39%	20.163
223	Washington	Barnes	367.4	3,085,021	8,397	3,398,030	1,019,409	2,775	30.00%	33.04%	21.254
224	Washington	Clifton-Clyde	318.5	2,609,508	8,193	2,927,363	878,209	2,757	30.00%	33.65%	20.243
108	Washington	Washington Co. Schools	353.5	2,965,642	8,389	3,446,626	1,025,502	2,901	29.75%	34.58%	23.295
467	Wichita	Leoti	404.0	3,214,414	7,956	3,601,506	1,175,000	2,908	32.63%	36.55%	22.798
461	Wilson	Neodesha	715.5	5,332,387	7,453	5,942,475	1,961,017	2,741	33.00%	36.78%	24.836
484	Wilson	Fredonia	654.8	4,975,524	7,599	5,672,266	1,701,680	2,599	30.00%	34.20%	21.724
387	Wilson	Altoona-Midway	185.5	1,918,073	10,340	2,165,436	600,000	3,235	27.71%	31.28%	17.937
366	Woodson	Woodson	451.5	3,991,533	8,841	4,479,118	1,310,330	2,902	29.25%	32.83%	22.377
203	Wyandotte	Piper-Kansas City	2,164.2	13,265,766	6,130	14,673,853	4,470,000	2,065	30.46%	33.70%	17.475
202	Wyandotte	Turner-Kansas City	4,090.2	28,248,640	6,906	31,108,006	9,332,402	2,282	30.00%	33.04%	19.123
204	Wyandotte	Bonner Springs	2,696.0	17,948,104	6,657	19,421,203	5,826,361	2,161	30.00%	32.46%	16.478
500	Wyandotte	Kansas City	21,159.0	155,796,964	7,363	172,040,529	51,612,159	2,439	30.00%	33.13%	13.533
			37,985.1								

KANSAS OFFICE of
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LEGISLATURE of THE STATE of KANSAS
Legislative Attorneys transforming ideas into legislation.

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MEMORANDUM

To: Senate Select Committee on Education Finance
From: Office of Revisor of Statutes
Date: March 20, 2018
Subject: Senate Bill 422—Local Option Budget

SB 422 would: (1) Require all school districts to adopt a local option budget (LOB) equal to 30% of the school district's total foundation aid; (2) determine supplemental state aid based on the current year's LOB; (3) continue the protest petition process for LOB, but void any existing LOB resolution adopted by a school district prior to July 1, 2017, that was not subject to an election or protest petition process; (4) require local school boards to notify the State Board of Education of their intent to raise their LOB authority in the succeeding school year; and (5) require each school district to transfer from the LOB an amount that is proportional its total foundation aid attributable to its at-risk weighting to its at-risk fund.

Mandatory Local Option Budget of 30%

Currently, school districts may adopt an LOB up to 30% of the total foundation aid of the school district. School districts can adopt an LOB greater than 30%, up to 33%, by adopting a resolution subject to protest petition. SB 422 would require school districts to adopt an LOB of 30% of their total foundation aid. School districts could still increase their LOB authority up to an additional 3% above the required 30% through the same resolution process.

Supplemental State Aid

Under SB 19, the State Board is directed to determine the amount of supplemental state aid received by a school district based on the amount of LOB of the district for the immediately preceding school year. SB 422 would strike the phrase "for the immediately preceding school year" allowing the State Board to determine the amount of supplemental state aid school districts are to receive based on the current year's LOB.

LOB Protest Petition

In school year 2014-2015, the School District Finance and Quality Performance Act allowed certain districts to increase their LOB authority up to 33% upon local school board action alone without a protest petition or election process. The Classroom Learning Assuring Student Success Act maintained LOBs as they were, which allowed certain school districts to maintain the maximum 33% LOB authority, without any additional action. Under SB 19, the Kansas School Equity and Enhancement Act, school districts that desire to increase their LOB authority above 30% are subject to a protest petition and election process, while school districts who do not desire to increase their LOB may maintain their LOB, even if they are above 30%.

SB 422 would continue to require a protest petition process for school districts that desire to increase their LOB authority above the mandatory 30%. Additionally, SB 422 would void any existing LOB resolution adopted by a school board prior to July 1, 2017, that was not subsequently approved at an election by a majority of the voters of the school district. Any such resolution would expire on June 30, 2018.

Notice of Intent to Increase LOB Authority

If a school district desires to increase its LOB authority in the immediately succeeding school year, SB 422 new subsection (g) would require local school boards to notify the State Board of their intent to increase their LOB authority by March 15 of the current year. The State Board would then compile such notices and submit a report to the legislature on or before March 25 of each year.

At-Risk Funds

SB 422 would require each school district to transfer an amount proportional to its total foundation aid attributable to the at-risk weighting from the LOB fund to the school district's at-risk fund.

Effective Date

The bill would take effect upon publication in the Kansas register.

SB 450 – Transportation Weighting

Edward Penner, Kansas Legislative Research Department

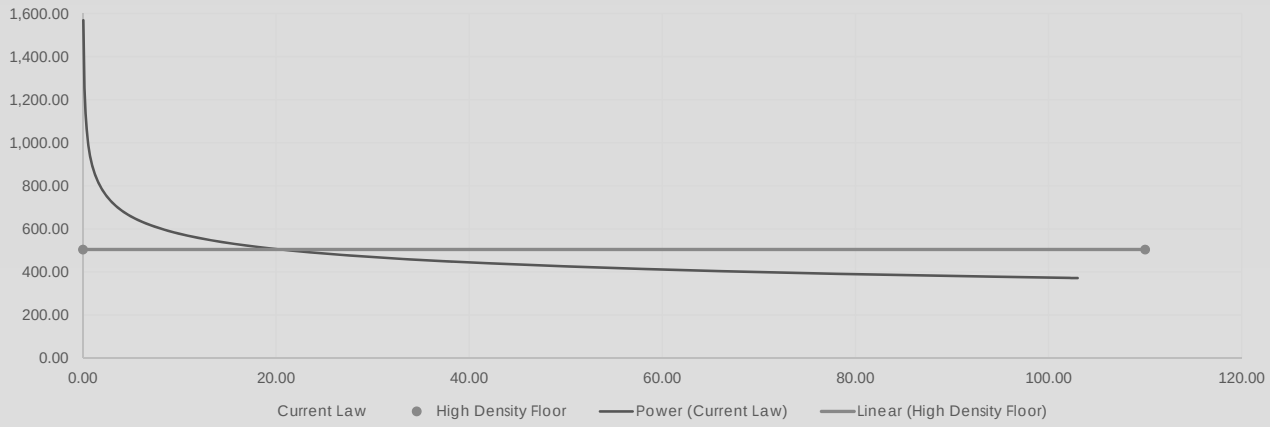
Senate Select Committee on Education Finance

March 21, 2018

Current Transportation Weighting

- Density Cost Per Pupil / BASE x Number of Eligible Pupils = Transportation Weighted FTE
- Transportation Weighted FTE x BASE = Transportation Aid (a component of state foundation aid)

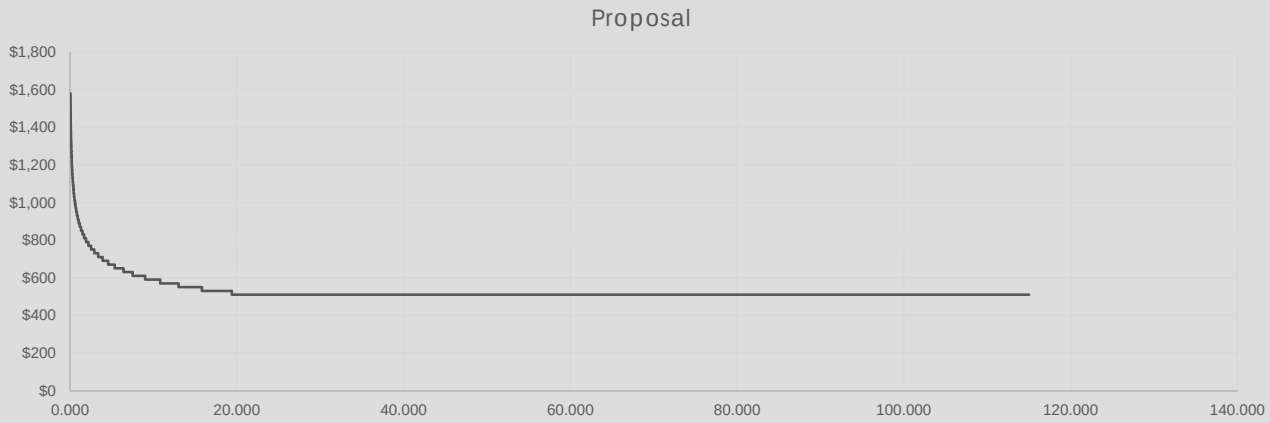
Current Transportation Weighting



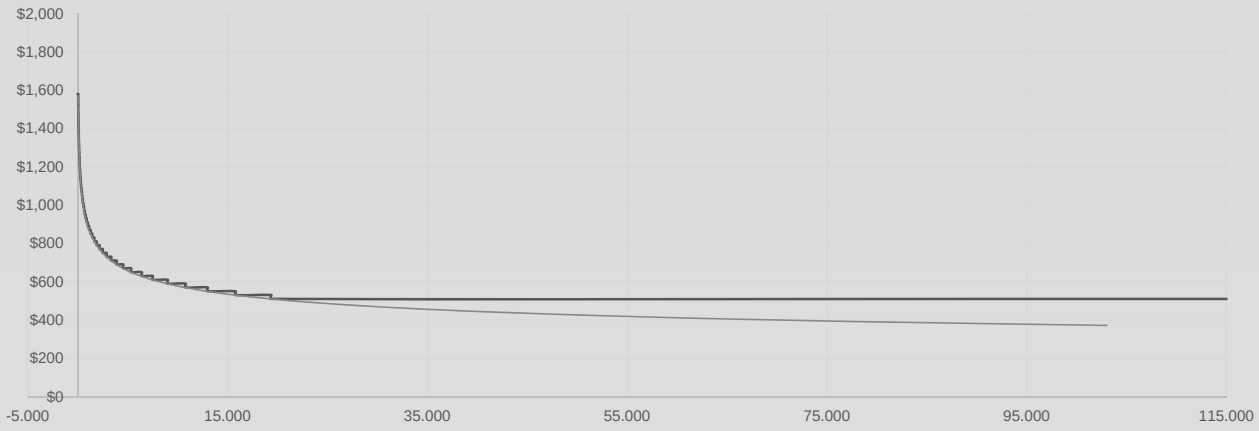
Proposed Transportation Weighting

- Per Capita Allowance x 1.00 x (Current Year BASE/FY 2019 BASE) x Number of Eligible Pupils = Transportation Aid (still a component of state foundation aid)
- Transportation Aid / BASE = Transportation Weighted FTE

Proposed Transportation Weighting



Current vs. Proposal



Important Notes

- Because of 2017 SB 19 changes to cost allocation formula, every USD currently has a grandfather clause through school year 2020-21.
- If grandfather clause is retained, there are no losers. 17 USDs are get more under this approach for a total statewide increase of about $168,000.
- After grandfather ends, this approach costs $1.3 million more per year.
- Almost all districts gain by a very small amount. One district loses $10 (believed to be rounding error).
- As a note, the bill does currently strike this grandfather clause, but that was not intentional.

Responsive • Affordable • Accessible
Quality Learning Opportunities

March 21, 2018

Chair Baumgardner, Members of the Senate Select Committee on Education Finance,

John Masterson, President of Allen County Community College, and I, Jackie Vietti, as former President of Butler Community College and Acting President of Kansas City Kansas Community College are here today to present testimony on concurrent enrollment – those forms of college courses provided to high school students. Our testimony on behalf of KACCT is in support of the concurrent proposal offering with some recommended adjustments for your consideration. Thank you for this opportunity to testify today.

First and foremost, we two, and the other 17 community colleges in KACCT fully support the value of concurrent enrollment of eligible students at community colleges for credit. As you may know, we have been providing concurrent courses for several years and have witnessed firsthand the difference it makes for our concurrent students and their parents. We agree that getting a head start on a college education affords a tested trajectory for completing postsecondary credentials and degrees.

Background:

Currently students younger than a junior can also take these courses if they are approved by their principal as ready to take them. Every community college in the Kansas community college system provides concurrent courses now.

Out of necessity, each community college negotiates with the local school districts in its service area to provide the needed courses, because no two school districts are exactly alike. Some school districts provide books, some do not. Some school districts ask the colleges to pay them directly or to pay their qualified teacher for teaching the courses. Some require other forms of compensation, i.e. materials, use of space, etc.

In addition, each community college, just like each state university, sets its tuition. In the case of community colleges, the tuition and fees are set by a locally elected Board of Trustees, per state

statute. In the case of state universities, tuition is set by the Board of Regents, after providing parameters for the universities to develop and bring forward their requests.

Thus, you will see an actual differing cost of delivery per credit hour for courses, and that the cost of delivery is dependent upon the number of students, whether Higher Learning Commission qualified teachers are working at the high school or whether the college must utilize its own Higher Learning Commission college qualified instructors, what the local school districts charge the community college for things like space, materials, books, transportation, etc.

To reiterate, we are fully supportive of the concept of universal access for high school students to postsecondary general education coursework. In order to ensure the sustainability of such a noteworthy initiative, from our perspective, we respectfully bring forward some adjustments for thoughtful consideration. Attached are the 8 statements KBOR and KSDOE have endorsed so that you can see the key elements that we believe merit further conversation as we work together to enact this difference-making legislation.

While a very few community colleges within our system have indicated the ability to deliver the 5 designated courses at the proposed cost of $175 per course, or $58.33 per credit hour, because of geography and student demographics, others have stated they do not, as has been noted during various work group conversations.

Colleges know that the cost of concurrent courses for them is dependent upon:
(1) the size of the class, full classes being harder to achieve in rural areas than urban;
(2) whether there are available Higher Learning Commission qualified high school teachers, or whether the college must provide its own Higher Learning Commission qualified faculty or adjuncts (often there are not many HLC qualified high school teachers in rural areas and there are in more urban areas);

And, all nineteen colleges realize that:
(3) if books are to be open sourced, faculty must be involved in that decision per collective bargaining master agreements/contracts and/or formalized faculty senates;
(4) school districts would need to assume the cost of providing books, if the colleges cannot charge the students for them, as $58.33 per credit hour or $175 per course would not cover the costs for tuition, books and fees.

Again, with full support of the proposed concept of universal access to postsecondary credit for students while still in high school in our state, other thoughts we encourage you to consider to ensure the sustainability of this effort:

* Expansion of the initiative to include exceptions to eligibility for sophomores, based upon objective standards, or other junior and high school students who demonstrate the aptitude, ability and/or motivation to succeed despite previous education track records, decided at the local level. We do not believe any of us want this to become perceived as an elitist undertaking.

* Reimbursement to the community colleges at $90 per credit hour to alleviate the negative impact of state aid that was cut by 4% in 2017 and to alleviate local mill levy increases that our tax payers cannot bear, while an actual cost study based on actual expenses is conducted.

* Reliance on existing processes and procedures that allow colleges with contiguous service areas to offer the courses if the home colleges cannot or choose not to do so in their services areas at the prescribed rate of reimbursement. Current guidelines allow colleges to approve other colleges coming into their service areas. If they choose not to do so, then an appeal process is in place per KBOR written procedures. This precludes the creation of a shadow system that, from our perspective, is not necessary.

* Faculty engagement in the selection of course materials, including textbook options, curriculum decisions, as it should be, which means the cost will need to be adjusted to accommodate course material options, as necessary, in lieu of open source materials. Actual course materials are an institutional faculty decision.

* Recognizing and adhering to decisions that previously have been made and endorsed by KBOR and its officially appointed groups. For context, faculty credentials, placement scores, student eligibility, course materials all play into the transferability of these courses across the system. There are standards that have been agreed upon through the transfer and articulation council and the KCOG groups and those decisions need to be respected because they have involved lots of voices from every institution in the system.

* Assumption of school districts for textbook costs, if the pilot reimbursement rate stays at $58.33 or slightly higher and the funding goes to the local school districts to pay the providing college for tuition, while an actual cost study is conducted.

Our concerns have been shared with the Kansas Board of Regents and now with you. That said we remain committed to working with beside you in the launch of this difference-making initiative, not only for our state, but also for its individual residents. We bring forward our recommendations within the context of our shared interest in perpetuating the sustainability of this model, which has the potential to serve as a best practice for other states.

Respectfully submitted
On behalf of Kansas Association of Community College Trustees,

Jackie Vietti John Masterson

Attachment

Senate Education Committee
Presentation on Proposed Concurrent Enrollment Program for General Education Courses
Blake Flanders, President and CEO, Kansas Board of Regents
Randy Watson, Commissioner, Kansas State Department of Education
March 8th, 2018

When drafting legislation regarding Statewide Concurrent Course Offerings for Academic Year 2019 (July 1, 2018 through June 30, 2019), the following statements are recommended for consideration:

Statement 1: In Year 1, a pilot program is recommended involving only one course (Composition I) so that any outstanding details and unforeseen issues can be defined and resolved before launching the full program. Institutions may choose whether or not to participate in the program.

Statement 2: The Board's policy on service areas will continue to apply. If an institution chooses not to participate in the pilot, but a high school within the institution's service area does participate, the Board will assign a participating postsecondary institution to the high school.

Statement 3: The following minimum eligibility standards apply to high school students enrolled in this program. Students must be:
- juniors or seniors; and
- have attained a cumulative GPA of 3.0 or better; and

(i) for American History I, Introduction to Psychology, and Public Speaking, earned an ACT composite score of at least 20 or an equivalent score on another valid assessment; or
(ii) for College Algebra and English Composition I, earned a college-ready ACT sub-score or equivalent on another valid assessment relevant to the offered concurrent enrollment course or courses.
The Board will convene a committee to identify other valid assessments and the required score students must meet for program eligibility.
Institutions expressed a need for alternative eligibility requirements for students who do not meet the GPA and assessment score requirements, but who institutions believe can be successful. A state committee comprised of representatives from two community colleges, one university, one technical college and Board staff will review institutional requests to admit such students and make a final determination.

Statement 4a: To be eligible for state funding designated to support this program, institutions must participate in the program.

Statement 4b: For the two-year sector, concurrent courses are eligible for funding through the nontiered funding line. It is recommended the Board advocate for full funding of the portion of funding supporting concurrent enrollment credit hours in the nontiered line item. It is recommended program funding be distributed in proportion to the amount of concurrent enrollment being offered through the program.

Statement 4c: If the program is not fully funded, institutions may charge tuition to students enrolled in the program up to $175 a course.

Statement 5: The state-funded tuition of the student portion of the course is $175. This includes tuition, fees, and educational materials.

Statement 6: The Board will convene a working group to recommend open source materials for courses that are part of the program. Use of identified materials is optional.

Statement 7: The Board will conduct a cost-study specific to the types of concurrent enrollment delivery options to identify direct costs for each sector.

Statement 8: The Board will continue to track the number of concurrent enrollment faculty meeting and not meeting the Higher Learning Commission's faculty qualifications by institution and will maintain a list of online graduate degrees offered by public universities in Kansas in the most common concurrent enrollment subject areas taught in the state. The report of faculty qualifications will be made available to the Board and, if requested, to the Kansas Legislature.

KANSAS TECHNICAL COLLEGES

To: Senate Select Committee on Education Finance

Date: March 22, 2018

Re: Testimony regarding Concurrent Enrollment Act for High School

Senator Baumgardner and members of the committee. I am Jim Genandt, President of Manhattan Technical College and am here presenting on behalf of the Kansas Association of Technical Colleges. KATC is a consortium of colleges promoting career and technical education in Kansas.

I want to start by thanking you for the energy and deliberation that you have put into this concept. The member colleges of the Kansas Association of Technical Colleges support the intent of the proposed initiative for concurrent education in Kansas. We believe that a strong higher education system in Kansas needs to have broad access to college-level courses and be affordable to high school students regardless of their socio-economic status.

We recognize the challenges you are facing include:

1) The current state of tuition rates for concurrent courses in Kansas is varied with inconsistent tuition rates across the state.
   a) Rates range from free, offset by local mill levy and/or other means, to several hundred dollars per credit hour.
2) Inconsistent practices for placement scores from college to college with mild variance on what a student must achieve to gain entry to a course.
3) The possibility that there are areas around the state where students may or may not have broad access to concurrent coursework.
4) Recruiting and retaining faculty to teach the courses.

Course Placement

The Kansas Board of Regents has already been working on a multi-measures approach to course placement to create consistency in course placement across the state. We would recommend using the course placement guidelines already being developed by KBOR to avoid additional inconsistency for students across the state before you enact legislation.

Access

In the modern era of higher education online classes have allowed colleges and universities across the state to deliver high quality concurrent courses to every high school in the state. Is access to concurrent enrollment a broad problem in Kansas? We would propose KBOR work with the local colleges to expand offerings to ensure students have the opportunities they need, having first gathered necessary data to show where concurrent shortages exist. Then KBOR expand offerings by local colleges in those service areas in a targeted fashion to meet those locales needs.

Cost Study

We understand that this initiative proposes to conduct a cost study for concurrent enrollment after launching the program. This seems counterintuitive and should be completed prior to beginning the program rather than after the fact. Having this information before implementation would provide you as policy makers, KBOR and the participating colleges insight into the costs, which vary significantly, as well as the multiple delivery methods (online, hybrid, face-to-face) colleges are currently using to deliver CEP and dual-credit classes.

Rural Impact

We have significant concern this program could negatively impact access in rural communities in Kansas. Currently, many rural high school faculty are paid extra for teaching college level coursework either through the local college or through supplemental pay in the school districts. In many cases, these faculty are adjunct faculty for the local college. If the appropriations received by the colleges cannot be used to pay school district faculty for their instruction, then the responsibility to pick up supplemental pay will fall to the local school district. Should the district be unable to pay, we fear that the net affect will be current instructors will stop teaching the CEP course(s). That practical affect then will be the shift of the cost burden back to the local college, whose only choice will be to hire an adjunct faculty member to teach the course (likely online). This will effectively remove a face-to-face concurrent course from rural high schools across the state.

Reimbursement Rate

The initiative as proposed seeks to reimburse colleges at $175 per course per student. Our members believe generally that the proposed amount is likely inadequate. Unless it is based on the data on cost yet to be collected, it is virtually impossible to know with any degree of certainty. If how colleges are limited in how they can use the reimbursement, then $175 per credit hour may fall even shorter.

Timing

The addition of this program comes on the heels of a 4% reduction in state aid to higher education two years ago, 38% underfunding of the Excel in CTE program, and a $20 million plus shortfall of funding to fully fund the two-year college funding model. While we acknowledge this program will be funded through the K-12 funding stream, our concern is what affect will this have on already successful, but thus far underfunded programs.

We respectfully suggest that you utilize the Kansas Board of Regents as the coordinating body to pilot this endeavor and only employ legislative action if your expectations or goals are not being met. We further recommend waiting on implementation of this initiative until a cost study has been conducted to evaluate the cost of deliver for concurrent education, as well as data collected evaluating access to concurrent education around the state.

Thank you and I would be happy to answer any questions.

Senate Select Committee on Education Finance
Proposed Concurrent Enrollment Program for General Education Courses
Blake Flanders, President and CEO, Kansas Board of Regents
March 22, 2018

Good afternoon Chair Baumgardner and Members of the Committee, I am here to discuss a proposal for concurrent enrollment for general education courses.

In Academic Year 2017, 14,983 students (headcount) enrolled, on average, in two general education college courses (30,989 enrollments) through concurrent enrollment partnerships for a total of 100,659 credit hours. A Concurrent Enrollment Partnership (CEP) is an agreement between a college or university and a school district to provide eligible high school students with college courses taught by approved high school faculty during the normal high school day. The student receives both high school and college credit.

These 14,983 high school students took courses on the Board's systemwide transfer list, and they will be able to transfer these courses to any Kansas public college or university offering an equivalent course. In Academic Year 2012, the Board prioritized systemwide transfer and, to date, has approved 84 courses available for guaranteed transfer systemwide. The pass rate for CEP students enrolled in systemwide transfer courses in AY 2017 was 96.7%.

According to research compiled by the Education Commission of the States[1], a wealth of data "underscores the benefits of dual enrollment programs, particularly for students traditionally underrepresented in higher education in the United States. Data suggest that dually enrolled students share the following characteristics:

- More likely to meet college-readiness benchmarks.
- More likely to enter college, and enter shortly after high school graduation.
- Lower likelihood of placement into remedial English or math.
- Higher first-year grade point average (GPA).
- Higher second-year retention rates.
- Higher four- and six-year college completion rates.
- Shorter average time to bachelor's degree completion for those completing in six years or less."

[1] Education Commission of the States. (2015). *State Approaches to Funding Dual Enrollment.* Denver, CO. Jennifer Zinth.

Concurrent Enrollment Taskforce

In June 2017, the Board received a letter from Senator Baumgardner, encouraging the Board to create a taskforce to identify opportunities to expand concurrent enrollment in the state. Also in June 2017, the Board received a report from its First Generation Taskforce recommending expansion of concurrent enrollment programs (CEP) in the state to open access and reduce costs for first generation students to give them an early start and realize academic success at the postsecondary level. At the 2017 retreat, the Board prioritized the review of concurrent enrollment as one of its goals for this year, and asked the Kansas Board of Education and the Kansas Board of Regents Coordinating Council to serve as the taskforce to take up this issue.

The Coordinating Council comprises two Board of Regents members, two Board of Education members, as well as President Flanders and Commissioner Watson, both of whom serve as ex-officio members. In 2017, the Council met on September 19, October 25, and November 30. The Council last met on January 8, 2018.

At its first meeting, the Taskforce reviewed the letter from Senator Baumgardner, and a background paper that outlined existing avenues for high school students to earn college credit, institutional service areas, Higher Learning Commission (HLC) faculty qualifications, professional development opportunities for high school faculty, financial models, and student qualifications. The group also heard from representatives from three community colleges, one technical college, and one state university about their respective CEP programs. The community and technical college representatives noted that their CEP programs were a service and not a significant source of revenue. The state university representative noted his institution no longer offers a CEP program due to the costs.

During the October meeting the Taskforce reviewed several research reports that documented the success of CEP and dual enrollment programs in terms of student matriculation, retention, and completion of postsecondary credentials. They also heard from representatives of four school districts about the benefits and challenges associated with the CEP programs at their respective high schools. The primary obstacles they face are the lack of access to such programs in some areas, particularly rural parts of the state, the variance in testing or admissions requirements among colleges, differing tuition rate among colleges, and the lack of HLC qualified instructors. The lack of qualified instructors is the greatest challenge for all of the schools.

The Taskforce met again on November 30. At that meeting, the group reviewed the goals of dual and concurrent coursework/programs and also reviewed the avenues Kansas high school students have to earn college credit before they graduate from high school. These avenues include Concurrent Enrollment Partnership (CEP) courses, dual enrollment courses, Advanced Placement (AP) courses and examinations, the College Level Examination Program (CLEP), the International Baccalaureate (IB) diploma programme, and the Freshman Year for Free program. Staff also reviewed CEP courses with the greatest number of students enrolled.

At its January 8, 2018 meeting, the Taskforce voted to form working groups to make recommendations to the Board President and CEO and the Commissioner of Education on the following issues:

- Identification of five courses offered for statewide delivery,
- Establishment of standardized eligibility requirements for students,
- Agreement on a common rate for tuition/fees, and
- Identification of alternative delivery methods.

Representatives from two technical colleges, four community colleges, and two universities agreed to serve on each working group, as well as two superintendents representing secondary education. The groups met twice in January 2018, and developed a set of recommendations. Those recommendations were sent to institutions for a public comment period, and the recommendations and public comments were then reviewed by Commissioner Watson and President Flanders. The final recommendations are detailed below, and have been shared with the Taskforce, the Kansas Board of Education and the Kansas Board of Regents.

Recommendations to the Concurrent Enrollment Taskforce
Concurrent enrollment opportunities are effective in increasing the percentage of students who enroll in college and these programs are linked to increases in college retention and completion rates. Low-income, first-generation and other underserved populations, in particular, benefit from concurrent enrollment programs.

Given that the Kansas Board of Education has defined a successful high school graduate as someone who has completed postsecondary education without remediation, and given that the Kansas Board of Regents has a strategic goal to increase higher education attainment, expansion of concurrent enrollment programs is critical to meet these goals.

Kansas has a strong concurrent enrollment culture where all community colleges and technical colleges offer concurrent enrollment programs. While every community has at least one assigned higher education provider, it is apparent that high school students in Kansas do not have access to the same level of concurrent enrollment opportunities. Student eligibility requirements and course tuition vary widely by institution. For instance, some institutions offer full tuition waivers, while others charge full price. In addition, students eligible for a course in one service area may not meet the eligibility requirements in a neighboring service area. Some institutions purchase textbooks for students, while other institutions require students to buy educational materials supporting the course. In short, concurrent opportunities are more closely tied to where a student resides in Kansas as opposed to the right to choose a postsecondary institution.

Because the Board's service area requirement restricts high schools to using the assigned postsecondary provider for concurrent enrollment, high school students do not have the option to choose a provider. Because of these market restrictions, it is essential to eliminate the variance in costs and eligibility requirements.

The Coordinating Council is recommending concurrent enrollment programs be defined as any of the following:

- CEP (Concurrent Enrollment Programs): A college course offered at the high school using a high school instructor.

- College Provided Instruction: A college course offered either at the high school or at the college using a full-time or adjunct instructor provided by the college.
- Online Courses: A college course offered completely online using a full-time or adjunct instructor provided by the college.
- Hybrid Courses: A college course offered at the high school that combines online instruction from a full-time or adjunct instructor provided by the college and additional face to face instruction by either a high school instructor or the college instructor.

When drafting legislation regarding Statewide Concurrent Course Offerings for Academic Year 2019 (July 1, 2018 through June 30, 2019), the following statements are recommended for consideration:

Statement 1: In Year 1, a pilot program is recommended involving only one course (Composition I) so that any outstanding details and unforeseen issues can be defined and resolved before launching the full program. Institutions may choose whether or not to participate in the program.

Statement 2: The Board's policy on service areas will continue to apply. If an institution chooses not to participate in the pilot, but a high school within the institution's service area does participate, the Board will assign a participating postsecondary institution to the high school.

Statement 3: The following minimum eligibility standards apply to high school students enrolled in this program. Students must be:

- juniors or seniors; and
- have attained a cumulative GPA of 3.0 or better; and
  (i) for American History I, Introduction to Psychology, and Public Speaking, earned an ACT composite score of at least 20 or an equivalent score on another valid assessment; or
  (ii) for College Algebra and English Composition I, earned a college-ready ACT sub-score or equivalent on another valid assessment relevant to the offered concurrent enrollment course or courses.

The Board will convene a committee to identify other valid assessments and the required score students must meet for program eligibility.

Institutions expressed a need for alternative eligibility requirements for students who do not meet the GPA and assessment score requirements, but who institutions believe can be successful. A state committee that includes representatives from two community colleges, one university, one technical college and Board staff will review institutional requests to admit such students and make a final determination.

Statement 4a: To be eligible for state funding designated to support this program, institutions must participate in the program.

Statement 4b: For the two-year sector, concurrent courses are eligible for funding through the nontiered funding line. It is recommended the Board advocate for full funding of the portion of funding supporting concurrent enrollment credit hours in the nontiered line item. It is recommended program funding be distributed in proportion to the amount of concurrent enrollment being offered through the program.

Statement 4c: If the program is not fully funded by legislative appropriation, institutions may charge tuition to students enrolled in the program up to $175 a course.

Statement 5: The state-funded tuition of the student portion of the course is $175. This includes tuition, fees, and educational materials.

Statement 6: The Board will convene a working group to recommend open source materials for courses that are part of the program. Use of identified materials is optional.

Statement 7: The Board will conduct a cost-study specific to the types of concurrent enrollment delivery options to identify direct costs for each sector.

Statement 8: The Board will continue to track the number of concurrent enrollment faculty meeting and not meeting the Higher Learning Commission's faculty qualifications by institution and will maintain a list of online graduate degrees offered by public universities in Kansas in the most common concurrent enrollment subject areas taught in the state. The report of faculty qualifications will be made available to the Board and, if requested, to the Kansas Legislature.

The Board of Regents appreciates Senator Baumgardner's request to study concurrent enrollment and we are ready to work with you on the pilot program. These proposed guidelines are recommended to best position the pilot to ensure success.

Thank you for the opportunity to present this proposal. I am happy to stand for questions.

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- Total cost is $2.8 million

FY 2018 - KANSAS PARENT EDUCATION PROGRAM					
				3/30/2018	
			D0	Anticipated Payment Dates:	
USD #				District/Program Name	Original Grant
204	**204**	0	D0204	Bonner Springs	10,500
210	**210**	0	D0210	Hugoton	27,676
229	**229**	0	D0229	Blue Valley	471,861
231	**231**	0	D0231	Gardner Edgerton	90,000
232	**232**	0	D0232	De Soto	103,953
233	**233**	0	D0233	Olathe	1,173,023
239	**239**	0	D0239	North Ottawa	25,252
240	**240**	0	D0240	Twin Valley	23,898
259	**259**	0	D0259	Wichita	230,000
260	**260**	0	D0260	Derby	147,858
261	**261**	0	D0261	Haysville	127,000
263	**263**	0	D0263	Mulvane	22,750
265	**265**	0	D0265	Goddard	71,160
266	**266**	0	D0266	Maize	142,283
273	**273**	0	D0273	Beloit	100,541
305	**305**	0	D0305	Salina	79,283
306	**306**	0	D0306	Southeast of Saline	36,667
308	**308**	0	D0308	Hutchinson/Buhler	139,438
320	**320**	0	D0320	Wamego	26,635
321	**321**	0	D0321	Kaw Valley	26,557
323	**323**	0	D0323	Rock Creek	38,680
333	**333**	0	D0333	Concordia	55,846
335	**335**	0	D0335	North Jackson	8,830
337	**337**	0	D0337	Royal Valley	40,606
348	**348**	0	D0348	Baldwin City	84,483
349	**349**	0	D0349	Stafford	17,971
359	**359**	0	D0359	Argonia Consortium	64,615
361	**361**	0	D0361	Chapparral Schools	9,968
368	**368**	0	D0368	Paola Consortium	187,116
373	**373**	0	D0373	Newton	60,120
379	**379**	0	D0379	Clay Center	49,809
380	**380**	0	D0380	Vermillion	24,236
382	**382**	0	D0382	Pratt Consortium	18,970
383	**383**	0	D0383	Manhattan/Ogden	217,690
394	**394**	0	D0394	Rose Hill	33,563
405	**405**	0	D0405	Lyons/Rice County Special Services Coop	45,581
410	**410**	0	D0410	Hillsboro/Marion County PAT	80,849
428	**428**	0	D0428	Great Bend	27,510
435	**435**	0	D0435	Abilene	73,531
437	**437**	0	D0437	Auburn-Washburn/Shawnee H	98,592
443	**443**	0	D0443	Dodge City	39,705
445	**445**	0	D0445	Coffeyville	72,005
457	**457**	0	D0457	Garden City	205,689
458	**458**	0	D0458	Basehor-Linwood	40,596
465	**465**	0	D0465	Winfield	64,788
469	**469**	0	D0469	Lansing	37,853
473	**473**	0	D0473	Chapman	37,151
475	**475**	0	D0475	Geary County	139,922
482	**482**	0	D0482	Dighton	20,000
487	**487**	0	D0487	Herington	46,686

FY 2018 - KANSAS PARENT EDUCATION PROGRAM					
				3/30/2018	
			D0	Anticipated Payment Dates:	
USD #				District/Program Name	Original Grant
489	**489**	0	D0489	Hays	65,751
490	**490**	0	D0490	El Dorado	21,000
495	**495**	0	D0495	Fort Larned	24,047
497	**497**	0	D0497	Lawrence	141,538
498	**498**	0	D0498	Valley Heights/Marysville	63,000
501	**501**	0	D0501	Topeka	498,946
512	**512**	0	D0512	Shawnee Mission	367,936
602	**602**	0	D0602	Northwest KS Ed Serv Ctr	36,983
608	**608**	0	D0608	Keystone (aka Northeast KS Ed Serv Ctr)	392,000
609	**609**	0	D0609	Southeast Ks Ed Serv Ctr	501,569
636	**636**	0	D0636	North Central KS Sp Ed Coop	53,846
				TOTAL	**7,185,912**

KANSAS LEGISLATIVE RESEARCH DEPARTMENT

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March 28, 2018

To: Representative Ron Ryckman

From: J.G. Scott, Assistant Director for Fiscal Affairs
Lauren Mendoza, Principal Research Analyst
Edward Penner, Principal Research Analyst
John Hess; Fiscal Analyst

Re: State Expenditures on School Readiness

The attached report is in response to your request dated March 23, 2018, for information on programs existing in Kansas that provide services to children and their families to assist in preparation of children for school readiness. The main report includes a summary of all programs and the funding included in the Governor's budget recommendation for FY 2018 and FY 2019. As the report notes, most of this funding is already included in the approved budgets for these programs. Attached to this main report are two documents: one that summarizes expenditures in this report and one that lists expenditures for all programs for children.

Attachment A. This document summarizes all recommended expenditures for FY 2018 and FY 2019 for programs that were included in the main report. Total expenditures for K-12 school finance are included at the bottom of the spreadsheet and a grand total of statewide education-related expenditures is provided. This document organizes programs by agency, which are organized by function of government. Expenditures for both fiscal years are summarized by all funds and State General Fund moneys.

Attachment B. This document summarizes the Children's Budget included in Volume 1 of *The FY 2019 Governor's Budget Report*. The Children's Budget presents information concerning the State's efforts to meet the needs of children in Kansas, including all state expenditures for all child-related programming. This document organizes programs by agency, which are organized by function of government. Expenditures for both fiscal years are summarized by all funds and State General Fund moneys.

JDH/mkl

STATE OF KANSAS EXPENDITURES FOR SCHOOL READINESS (Excluding K-12 School Finance)

The following report summarizes programs that assist in preparing Kansas children for school readiness. All dollar figures recommend the Governor's budget recommendation. The majority of funding is already included in the approved budgets for FY 2018 and FY 2019.

TOTAL EXPENDITURES

FY 2018—All Funds: $186,139,890; SGF: $61,864,776
FY 2019—All Funds: $188,678,870; SGF: $62,105,834

GENERAL GOVERNMENT

HUMAN SERVICES

GENERAL GOVERNMENT

Attorney General

DARE Program
FY 2018—All Funds: $25,000; SGF: $0
FY 2019—All Funds: $25,000; SGF: $0

The Drug Abuse Resistance Education (DARE) Program assists local law enforcement agencies and schools to create local programs, provide training of the curriculum, and provide material and information.

HUMAN SERVICES

Department for Children and Families (DCF)

Child Care Quality
FY 2018—All Funds: $5,083,046; SGF: $0
FY 2019—All Funds: $5,083,046; SGF: $0

The majority of Child Care Quality expenditures are devoted to resource and referral services. Resource and referral programs serve as a central component of the state's child care infrastructure. While their core role is to provide information to parents about child care available in their communities and referrals to other programs in response to family needs, they also maintain databases on child care programs, build the supply of child care by providing training and technical assistance to new and existing providers, and improve child care quality by offering training for family child care providers, center staff, and directors.

Independent Living & Life Skills Services
FY 2018—All Funds: $1,969,886; SGF: $393,977
FY 2019—All Funds: $1,969,886; SGF: $393,977

Youth ages 15 and older in out-of-home placement are provided life skills services by the Child Welfare Community-Based Service providers. Providers assist youth to prepare for adulthood and self-sufficiency by providing an array of services and support, including daily living skills; housing, transportation, and community resources; money management; self-care; social development; and work and study skills. These services are provided by the local DCF offices to all youth who are eligible for Chafee or Education and Training Voucher funding and were in DCF, Department of Corrections juvenile, or tribal custody. Financial assistance is also available to eligible youth for post-secondary education, certified training programs, and monthly independent living subsidies.

Kansas Early Head Start
FY 2018—All Funds: $9,238,642; SGF: $0
FY 2019—All Funds: $9,238,642; SGF: $0

The Kansas Early Head Start Program is designed to meet the individual needs of children and their families by focusing on quality early education, parent education, and other family support services. The program focuses support on low income, pregnant women, and families with infants, toddlers, and/or children with disabilities in the home.

Vocational Rehabilitation Case Services
FY 2018—All Funds: $4,900,967; SGF: $1,043,906
FY 2019—All Funds: $5,717,131; SGF: $1,217,749

Vocational Rehabilitation Case Services helps secondary students with severe disability prepare for employment through the Vocational Rehabilitation Program. Without these services, research has demonstrated that most special education students leaving high school will not acquire appropriate employment, and many of the functional abilities gained through special education would be lost.

Smartmoves
FY 2018—All Funds: $219,435; SGF: $0
FY 2019—All Funds: $219,435; SGF: $0

Smartmoves is a comprehensive teen pregnancy prevention and education program provided by the Boys and Girls Club to at-risk youth in Coffeyville, Wyandotte County, Hutchinson, White Cloud, Horton, Mayetta, Leavenworth, Abilene, Manhattan, Wichita, Topeka, and Lawrence. Curriculums are utilized to develop skills to resist alcohol, tobacco, and other drugs, as well as pregnancy prevention and premature sexual activity through abstinence-based curriculum. Other curriculum includes skill-building regarding healthy relationships, career exploration, job readiness, and placement and career decision-making support.

EPIC Skillz
FY 2018—All Funds: $188,583; SGF: $0
FY 2019—All Funds: $188,583; SGF: $0

EPIC Skillz provides an expanded learning opportunity for middle school students by offering an alternative path to earning high school credit. The program is designed to build workforce skills, promote innovative thinking, increase engagement, and motivate experiential learning in at-risk youth. Youth in the program build essential skills for college and career readiness through hands-on learning activities in and out of the classroom.

Urban Scholastic Center
FY 2018—All Funds: $109,253; SGF: $0
FY 2019—All Funds: $109,253; SGF: $0

The Urban Scholastic Center serves inner-city children and youth by offering a wide array of services, including literacy, after-school, and evening educational programs. The program mainly services children from low-income families living in Wyandotte County. The program aims to increase a child's desire to read and develop a love for reading and learning.

Project Impact
FY 2018—All Funds: $0; SGF: $0
FY 2019—All Funds: $189,317; SGF: $0

Project Impact targets minority youth in the age range of 14 through 17 who reside in the state's high-risk, low-protective counties. The program seeks to lower risk factors in those children who may be affected by antisocial behavior issues, drug use, gang involvement, and a variety of at-home challenges.

Kansas Reading Roadmap
FY 2018—All Funds: $9,790,050; SGF: $0
FY 2019—All Funds: $9,790,950; SGF: $0

Reading proficiently by the third grade is considered one of the most important predictors of high school graduation. As such, the program works with low-income schools in rural and urban communities to increase reading proficiency among the schools' at-risk children.

Kidzlit
FY 2018—All Funds: $877,725; SGF: $0
FY 2019—All Funds: $877,725; SGF: $0

Kidzlit is part of the Kansas Reading Roadmap project.

Jobs for America's Graduates
FY 2018—All Funds: $4,400,000; SGF: $0
FY 2019—All Funds: $5,750,000; SGF: $0

Jobs for America's Graduates is a program that targets children at risk of failing in schools. The program offers in-class instruction, mentoring, leadership development, and job and postsecondary placement to participants.

Communities in Schools
FY 2018—All Funds: $1,453,467; SGF: $0
FY 2019—All Funds: $1,489,520; SGF: $0

Communities in Schools partners with public schools to improve high school graduation rates. The program primarily focuses on schools with the highest drop-out rates and surrounds at-risk students with services to better their chances of graduating. This goal is achieved by intensive case management, academic tutoring, and mentoring services.

Parsons State Hospital and Training Center

Special Purpose School
FY 2018—All Funds: $350,000; SGF: $350,000
FY 2019—All Funds: $350,000; SGF: $350,000

Special education services are provided to school-aged residents of Parsons State Hospital through a contract with the Southeast Kansas Regional Education Service Center.

Kansas Department of Health and Environment—Health

School Health
FY 2018—All Funds: $691,907; SGF: $375,376
FY 2019—All Funds: $691,907; SGF: $375,376

This grant program is to implement strategies that promote school health in 12 target Local Education Agencies. The main goals of the five-year project were to: (1) facilitate the planning, development, and implementation of the revised local wellness policies; (2) support school environment that encourage physical activity and healthy food choices and meet the daily needs of students with chronic conditions; and (3) meet HK2020 objectives related to school health as set out by partners across the state. The Healthy Kansas Schools program, a partnership between the Kansas Department of Health and Environment-Bureau of Health Promotion and the Kansas State Department of Education-Child Nutrition and Wellness, coordinated these efforts.

Infant and Toddler Services
FY 2018—All Funds: $10,153,186; SGF: $0
FY 2019—All Funds: $10,151,104; SGF: $0

This program provides funding to 36 local networks that provide services to infants and toddlers who have developmental delays.

Newborn Hearing Aid Loaner Program
FY 2018—All Funds: $41,346; SGF: $0
FY 2019—All Funds: $40,602; SGF: $0

The goal of this program is to provide small children with temporary hearing assistance devices until they receive their permanent devices.

Newborn Metabolic & Hearing Screening
FY 2018—All Funds: $766,200; SGF: $16,700
FY 2019—All Funds: $773,868; SGF: $16,700

This program provides screening of all Kansas newborns for 29 conditions recommended by the national panel for state screening programs. This assures early diagnosis and treatment to prevent serious disability or death. The agency has laboratory tests at the KDHE Lab and nursing follow-up services through the Division of Health.

EDUCATION

Department of Education

Parent Education Program (Parents as Teachers)
FY 2018—All Funds: $7,237,635; SGF: $0
FY 2019—All Funds: $8,237,635; SGF: $0

The Parent Education Program provides expectant parents and parents of infants and toddlers with advice and resource materials related to parenting skills, positive approaches to discipline, and development of self-esteem.

Pre-K Program
FY 2018—All Funds: $4,132,317; SGF: $0
FY 2018—All Funds: $4,132,317; SGF: $0

This program prepares four-year-old children for success in school. All classrooms in the program are required to meet teacher qualification requirements, implement a research-based curriculum, maintain low teacher-to-child ratios, complete at least 15 hours of teacher training annually, and provide referrals to additional community services for families that need them.

Kansas Reading Success
FY 2018—All Funds: $2,100,000; SGF: $2,100,000
FY 2019—All Funds: $2,100,000; SGF: $2,100,000

Refer to program description under the Department for Children and Families.

Communities in Schools
FY 2018—All Funds: $50,000; SGF: $0
FY 2019—All Funds: $50,000; SGF: $0

Refer to program description under the Department for Children and Families.

Children's Cabinet Programs
FY 2018—All Funds: $15,607,840; SGF: $0
FY 2019—All Funds: $18,018,476; SGF: $0

Early Childhood Block Grants send money to school districts, Early Head Start sites, Head Start sites, and community-based programs that provide research-based child development services for at-risk infants, toddlers and their families, and preschool for three- and four-year-old children. The grant process is driven by accountability measures and research-based programming, as well as a focus on at-risk children and underserved areas. At least 30.0 percent of all block grant funds are set aside for infant and toddler programs.

Programming also includes the Child Care Quality Initiative and the Autism Diagnosis Program.

School for the Blind

Education of Blind Children
FY 2018—All Funds: $7,043,445; SGF: $5,368,299
FY 2019—All Funds: $6,767,521; SGF: $5,435,726

The School for the Blind provides educational, residential, and outreach services for children with visual and other impairments until the age of 21. In addition to extra hours of academic work, students residing in the dormitory receive instruction in life skills to foster independent living in adulthood. The school expects to serve additional students through its statewide outreach program and provide them with books, instructional material, and specialized technology. Also in the school's budget is funding for the Accessible Arts, which provides technical assistance to enhance the arts for visually impaired students.

School for the Deaf

Education of Deaf Children
FY 2018—All Funds: $11,044,447; SGF: $8,831,258
FY 2019—All Funds: $10,798,266; SGF: $8,899,869

The School for the Deaf offers instructional and residential programs for students who are deaf and hard-of-hearing so that they may have total accessibility to language and educational needs in a visual environment. Included in the school's curriculum are all academic subjects necessary for accreditation by the Kansas State Department of

Education. In addition to classroom and life skills instruction at the Olathe campus, outreach services, early intervention assistance, and auditory training units are provided to school districts statewide.

Kansas Board of Regents

Excel in Career Technical Education Initiative (2012 SB 155)
FY 2018—All Funds: $28,050,000; SGF: $28,050,000
FY 2019—All Funds: $28,050,000; SGF: $28,050,000

This program encourages high school students to earn technical college credit without paying tuition and, at the same time, earn an industry credential recognized by employers. The program provides for diverse career pathway options which will give high school graduates the flexibility to either enter the workforce in high-demand, high-wage jobs after graduation, or earn high wages as they work their way through college, minimizing debt for Kansas students and families.

Emporia State University

Center for Early Childhood Education
FY 2018—All Funds: $480,489; SGF: $12,023
FY 2019—All Funds: $480,489; SGF: $12,023

The Center for Early Childhood Education provides care for children of Emporia State University students, faculty, staff, and the community members.

Reading Related Services
FY 2018—All Funds: $26,450; SGF: $26,450
FY 2019—All Funds: $26,450; SGF: $26,450

This program provides reading and science instruction to school-age children, ages six through eight. Pre-service teachers provide individual and small group lessons. Practicum students also test, diagnose, and remediate children with reading problems.

Enhancing Your Future
FY 2018—All Funds: $16,790; SGF: $12,690
FY 2019—All Funds: $16,790; SGF: $12,690

This one-day conference is attended by girls in grades six through eight with their parents and teachers on the campus of Emporia State University. Goals of the conference include: increasing girls' interest in science and mathematics; fostering awareness of career opportunities for women in mathematics- and science-related fields; and providing girls with the opportunity to meet and form personal contacts with successful women.

Sonia Kovalevsky Mathematics Day
FY 2018—All Funds: $1,500; SGF: $1,500
FY 2019—All Funds: $1,500; SGF: $1,500

Funding for this program is provided through a corporate grant. The Sonia Kovalevsky Mathematics Day conference, named for a famous 19th-century mathematician, is designed to honor and encourage high school women in their junior year to continue in their math studies.

MASTER-IT
FY 2018—All Funds: $20,721; SGF: $16,721
FY 2019—All Funds: $20,721; SGF: $16,721

The Mathematics and Science to Explore Careers—Investigating Together (MASTER-IT) is a one-week summer residential program for young women at Emporia State University. Participants live in a residence hall chaperoned by college women and have the opportunity to interact with University faculty, women professionals, and other participants.

Family Literacy Program
FY 2018—All Funds: $30,458; SGF: $360
FY 2019—All Funds: $30,470; SGF: $372

The Family Literacy Program provides reading and mathematical tutorial help for children in 8 of the 11 local public and private schools in Emporia. The program uses college students in the University's Teacher Education Program as tutors. The majority of the program's funding comes from special revenue funds paid as stipends to the tutors.

Yes, I Can Do Science & Mathematics (Sí Se Puede Hacer Ciencia y Matemáticas)
FY 2018—All Funds: $5,750; SGF: $5,750
FY 2019—All Funds: $5,750; SGF: $5,750

This program is for sixth to eigth grade Hispanic students and is held every year on a Saturday in October. Students participate in four hands-on workshops taught by Hispanic professionals from all over the State of Kansas. The workshops allow students to explore STEM topics, such as engineering, physics, medicine, chemistry, and veterinary medicine.

Students also hear words of encouragement from Hispanic professionals during a formal luncheon in Emporia State University's Memorial Union. Parents and teachers are encouraged to attend the program as well. The adult sessions focus on how to encourage Hispanic students to study STEM subjects and advice on how to succeed in college.

Fort Hays State University

Herndon Speech, Language, and Hearing Clinic
FY 2018—All Funds: $777,523; SGF: $586,319
FY 2019—All Funds: $777,523; SGF: $586,319

This clinic provides comprehensive diagnostics and treatment to children of Western Kansas. It is administered by Fort Hays State University personnel in local offices throughout Western Kansas.

Tiger Tots Nurtury Center
FY 2018—All Funds: $103,452; SGF: $0
FY 2019—All Funds: $103,452; SGF: $0

The Fort Hays State University's Tiger Tots Nurtury Center provides child care and pre-school for children of the University's students and staff.

Kansas State University

Hoeflin Stone House Child Care Center
FY 2018—All Funds: $395,869; SGF: $65,000
FY 2019—All Funds: $475,000; SGF: $65,000

Stone House provides full-day, full-year, early education for three groups of children: infants and toddlers, aged 6 weeks through 3 years; toddlers, ranging from 15 to 30 months of age; and preschoolers, aged 2-and-a-half to 5 years. Only children eligible for Early Head Start services are enrolled in the infant-toddler program.

Early Childhood Laboratory
FY 2018—All Funds: $110,160; SGF: $65,000
FY 2019—All Funds: $125,000; SGF: $65,000

The Early Childhood Laboratory is located in the Hoeflin House Child Care Center. The program integrates children who have identified developmental delays and disabilities with children who are typically developing. Kansas State University sponsors the child care programs for the education of teachers, the observation and interpretation of human growth and development, and research in a natural setting for faculty and students. This program is operated in collaboration with the public school system (USD 383) and serves as a major resource to the community.

KSDE Food Program
FY 2018—All Funds: $7,000; SGF: $0
FY 2019—All Funds: $7,000; SGF: $0

The Food Program provides nutritious meals and snacks to all children in the Early Childhood Lab program and the Hoeflin Stone House Child Care program. These meals and snacks meet the Child and Adult Care Food Program guidelines.

Speech & Hearing Center
FY 2018—All Funds: $343,579; SGF: $168,474
FY 2019—All Funds: $345,474; SGF: $168,474

The Speech and Hearing Center serves children with speech, language, and hearing disorders from birth to adulthood. Services include evaluation and intervention for children with conditions resulting from communication disorders such as cleft palate, cerebral palsy, autism, deafness, vocal misuse/abuse, and retardation.

Kansas State University—ESARP

4-H Program
FY 2018—All Funds: $1,098,416; SGF: $417,167
FY 2019—All Funds: $1,098,416; SGF: $417,167

The mission of the 4-H Program is to provide educational strategies and opportunities for youth and adults to work in partnership as they develop life skills to become healthy, self-directed, contributing members of society. This program focuses on the development among youth of five life skills: a positive self-concept, an inquiring mind, a concern for the community, healthy interpersonal relationships, and sound decision-making skills by creating nearly 1,000 ongoing program sites across the state.

Youth Leadership & Community Involvement Initiative
FY 2018—All Funds: $255,109; SGF: $94,620
FY 2019—All Funds: $255,109; SGF: $94,620

In partnership with the Kansas 4-H Foundation, this leadership and service initiative establishes leadership training opportunities for the young adult. Participants master small and large group facilitation skills, the intricacies of public policy development through democratic government, understanding diversity, and how to serve on public boards and in communities as advocates for youth perspective.

Army Youth & Teen Center Technical Assistance
FY 2018—All Funds: $115,295; SGF: $20,914
FY 2019—All Funds: $115,295; SGF: $20,914

This U.S. Army initiative establishes 4-H clubs on army posts throughout the world. The program provides high-quality, predictable environments for youth dependent in an

increasingly mobile, all-volunteer army. Technical assistance is provided by Kansas State University staff including the development of army personnel and management strategies for youth centers that go beyond recreation to support social skills, and workforce development. Staff also provides and supports curriculum at the army sites as well as establishing of computer labs for homework and general learning at each youth center.

Community Youth Development & Training
FY 2018—All Funds: $114,745; SGF: $26,998
FY 2019—All Funds: $114,745; SGF: $26,998

This program provides opportunities for teen leaders, organizational leaders, and others from non-affiliated community youth development groups to increase their individual and organizational skills. Many communities have local youth organizations that lack affiliation with larger youth organizations. Kansas State University Extension Systems holds a unique position with expertise in paid and volunteer staff development, experiential learning curricula, leadership, and establishing effective adult-youth partnership as well as management skills to establish and maintain youth groups.

Learning & Social Readiness
FY 2018—All Funds: $43,423; SGF: $12,450
FY 2019—All Funds: $43,423; SGF: $12,450

Kansas State Research and Extension conducts community-based implementation of social competency and learning readiness curricula. Kansas State University students provide activities and learning experiences for pre-school children, in partnership with other organizations. Activities include reading to children and performing science experiments for children in a variety of settings.

Improve Parenting Skills & Family Relationships
FY 2018—All Funds: $1,371,609; SGF: $707,299
FY 2019—All Funds: $1,371,609; SGF: $707,299

Kansas State Research and Extension Family and Consumer Sciences are committed to developing and delivering educational programs that contribute to effective parenting and successful family relationships. It provides programs throughout the state on Basic Living Skills, Families and Divorce, Stepping Stones for Stepfamilies, Parents Universities, and Family Financial Management. It also provides a financial planning program for high school students.

Pittsburg State University

Pre-School Lab
FY 2018—All Funds: $34,694; SGF: $17,587
FY 2019—All Funds: $35,350; SGF: $17,636

This is a learning laboratory conducted by the Department of Family and Consumer Sciences for children three-and-a-half to five years old. It serves as a training facility for students majoring in Early Childhood Development and Early Childhood Education. The pre-school laboratory provides opportunities to interact with young children under the guidance of skilled instructors.

Yes Program
FY 2018—All Funds: $35,350; SGF: $17,636
FY 2019—All Funds: $35,350; SGF: $17,636

This program is conducted in cooperation with area school systems to provide tutorial assistance to school children.

America Reads Challenge
FY 2018—All Funds: $35,350; SGF: $834
FY 2019—All Funds: $35,350; SGF: $834

This program is a federally funded work-study program designed to provide support to communities and schools to improve local reading programs. America Reads Challenge provides reading tutorial help for children in area public and private schools. The goal is to have all children read well and independently by the end of third grade. The program uses college students as tutors.

Science Day
FY 2018—All Funds: $984; SGF: $0
FY 2019—All Funds: $984; SGF: $0

The Physics, Biology, and Chemistry departments at Pittsburg State University sponsor a secondary student competition in science to promote awareness of physical concepts. In addition to traditional testing, students compete in a variety of events that require hands-on science. For example, student will put physics principles to work in the Paper Tower, Mousetrap Car, and a variety of competitions.

Career Exploration
FY 2018—All Funds: $2,727; SGF: $0
FY 2019—All Funds: $2,727; SGF: $0

Secondary students participate in Technology Days, Nursing Career Day, and Opportunities in the Business Profession, which introduces them to careers in these areas.

University of Kansas

Hilltop Child Development Center
FY 2018—All Funds: $2,509,000; SGF: $0
FY 2019—All Funds: $2,552,000; SGF: $0

The Center's mission is to provide quality child care services to the University community. In addition to providing child care, Hilltop provides on-the-job training to 75 to 85 students each semester. Students earn course credit by volunteering or observing at the Center. University faculty and students conducting research involving young children often use Hilltop as a study site. The center is accredited by the National Academy of Early Childhood Programs.

Edna A. Hill Child Development Center
FY 2018—All Funds: $495,000; SGF: $0
FY 2019—All Funds: $503,000; SGF: $0

The Child Development Center serves children ages one to six years. The Center operates six programs: Sunnyside Infants; Sunnyside Toddlers; Educare I; Educare II; KEAP, an intervention program for children with autism; and Little Steps, a program for children with severe behavior problems. All programs are full-day and serve children with disabilities and at risk for developmental delays, as well as normally developing children, together in the same classroom. The children's classrooms serve as research and teacher training sites for the University, and contribute to high-quality education for both university students and young children. The University of Kansas states that the Center has successfully attained a national and international reputation for its research and approach to early childhood educational and teacher training.

Lied Center of Kansas: School Performance Series
FY 2018—All Funds: $52,000; SGF: $0
FY 2019—All Funds: $60,500; SGF: $0

These school-only performances support classroom curriculum and arts-in-education for schools in Lawrence and the region. The performances take place during the school day and study guides are developed for both student and teachers for each school performance. Performances are presented for kindergarten through second grade, third through fifth grades, middle school, and high school. Every student in USD 497 attends free of charge for a total of over 10,000 students in attendance each year.

School of Architecture, Design, and Planning Design Camp
FY 2018—All Funds: $27,000; SGF: $0
FY 2019—All Funds: $27,000; SGF: $0

KU Design Camp is a pre-college summer program offered to high school students who are entering their sophomore, junior, or senior year and are interested in design. Campers

live on KU's Lawrence campus, learn in hands-on studios taught by KU Design faculty, hear keynotes from leaders in the design industry, and work alongside current KU Design students. Campers are charged either a $750 fee that includes all meals, materials, and the matriculation fee or a $900 fee, which also includes housing in a KU Residence Hall.

School of Journalism/Mass Communications: Media Workshop
FY 2018—All Funds: $55,000; SGF: $0
FY 2019—All Funds: $57,000; SGF: $0

For more than 50 years, the University of Kansas has hosted summer journalism camps for high school students. Over a five-day period, students learn about many types of media: web, yearbook, news publications, video, and photography.

School of Music: International Institute for Young Musicians
FY 2018—All Funds: $74,617; SGF: $0
FY 2019—All Funds: $74,617; SGF: $0

The International Institute for Young Musicians (IIYM) L.L.C. is an American organization dedicated to creating world-class opportunities for young musicians from around the globe. IIYM assists participants in translating artistic vision into high performance through direct, practical, and fully involved guidance from internationally renowned professionals. The IIYM Summer Music Academy is an internationally recognized course of intensive study for young musicians, offering instruction to students from around the world who wish to improve their mastery of performance.

Spencer Museum of Art: Children Programming
FY 2018—All Funds: $146,825; SGF: $48,000
FY 2019—All Funds: $113,850; SGF: $45,100

Each year, all third-grade students in USD 497 participate in "Art Museum Stories," which introduces them to the Spencer Museum of Art and museum practices. Students in fourth grade in USD 497 learn about regional art and artists in "Art of Kansas and the region" through two classroom presentations and a guided tour of the Spencer Museum. Fifth-grade students learn about intersections of STEM fields through "The Detective's Eye" program that takes place in local classrooms and the Museum's galleries. On weekends, the Spencer hosts The Art Cart, a drop-in activity station where children enjoy hands-on art projects taking inspiration from original works of art. In addition, the Museum's staff and docents regularly lead gallery tours for K-12 students from across Kansas. Offerings include a full program of family programs that target children in the community.

Wichita State University

Speech-Language-Hearing Clinic
FY 2018—All Funds: $503,300; SGF: $94,300
FY 2019—All Funds: $503,300; SGF: $94,300

The Clinic provides diagnosis and treatment for children and adults who have speech, language, and hearing problems. Services are available on a fee-for-services basis to University students, staff, and faculty, as well as residents of surrounding communities. Recommendations are provided to the parents/families of the children evaluated so that proper services can be implemented.

School of Nursing—Health Screenings
FY 2018—All Funds: $9,300; SGF: $9,300
FY 2019—All Funds: $9,300; SGF: $9,300

University nursing faculty and students provide health screenings for elementary age children at selected schools each year. In addition, health education presentations are provided for children at elementary schools. They also provide primary care in a variety of clinics, including not-for-profit and free clinics.

School of Nursing—Services Provided by Nursing Students
FY 2018—All Funds: $17,250; SGF: $17,250
FY 2019—All Funds: $17,250; SGF: $17,250

Children hear presentations made by nursing students on health topics at high schools and community groups. The students also provide assistance in school health rooms in the Wichita area.

Physician Assistants—West High School Health Science Program
FY 2018—All Funds: $9,500; SGF: $9,500
FY 2019—All Funds: $9,500; SGF: $9,500

Wichita State University's College of Health Professions Physician Assistant Department provides instruction and support to junior and senior students enrolled in the Health Sciences Program at West High School in Wichita. The University's faculty and students provide instruction in basic health topics for the high school's students as a service learning project.

Upward Bound
FY 2018—All Funds: $391,255; SGF: $0
FY 2019—All Funds: $391,255; SGF: $0

Upward Bound is designed to generate the skills and motivation necessary for success in education beyond secondary school. This program provides secondary school students with limited income, first generation, and persons with disabilities an opportunity to

improve their academic, social, and personal skills while preparing for a postsecondary education. Services include tutoring, test preparation, study skills, campus visits, and summer residential program. The program serves students in grades 9 through12 in the Wichita area.

Upward Bound Regional Math/Science Program
FY 2018—All Funds: $320,124; SGF: $0
FY 2019—All Funds: $320,124; SGF: $0

For high school students in grades eight to twelve, this Upward Bound federally funded program advances interest in mathematics, science, and computer technology. The program includes a six- to eight-week summer residential program at Wichita State University. Participants receive academic instruction, research opportunities, tutorial support, career counseling, and computer instruction during their time in the program.

Upward Bound Communication
FY 2018—All Funds: $245,723; SGF: $0
FY 2019—All Funds: $245,723; SGF: $0

The program is designed to generate the skills and motivation necessary for success in education beyond secondary school for students who have an interest in communication.

TRIO Talent Search—Project Discovery
FY 2018—All Funds: $559,200; SGF: $0
FY 2019—All Funds: $559,200; SGF: $0

This federally funded program by the U.S. Department of Education provides assistance to middle and high school students whose families have not typically attended postsecondary education. Assistance is offered in pre-college course planning and selection, completing college admission applications and financial aid forms, and preparing for entrance examinations. It also provides mentoring, tutoring, and summer school enrichment for middle school students.

GEAR UP (Gaining Early Awareness & Readiness for Undergraduate Programs)
FY 2018—All Funds: $3,500,000; SGF: $0
FY 2019—All Funds: $3,500,000; SGF: $0

GEAR UP serves students who are first generation, foster, or adoptive care with limited income. Services include tutoring, mentoring, college preparation workshops for students and parents, workshops for teachers and counselors, college campus tours, and cultural activities.

Teacher Education Majors
FY 2018—All Funds: $23,758; SGF: $0
FY 2019—All Funds: $23,758; SGF: $0

The Wichita State University Cooperative Education Project for Teacher Education Majors is designed to provide financial assistance to university students by providing work as tutors and teaching assistants working with disadvantaged students in the Wichita public schools. The university students provide tutoring sessions to students struggling to learn reading and math.

WSU Child Development Center
FY 2018—All Funds: $690,041; SGF: $0
FY 2019—All Funds: $690,041; SGF: $0

This child care facility is a non-profit organization, operated with restricted use funds. The Center provides day care services for the children of Wichita State University students, faculty, staff, and alumni. Children from the community attend on a space available basis.

America Reads Challenge
FY 2018—All Funds: $85,850; SGF: $0
FY 2019—All Funds: $85,850; SGF: $0

A dedicated portion of the federal work-study program pays college students to tutor children in kindergarten through second grade in reading.

Partnership with Communities in Schools
FY 2018—All Funds: $16,681; SGF: $0
FY 2019—All Funds: $16,681; SGF: $0

The Wichita State University Cooperative Education Partnership with Communities in Schools provides university students the opportunity to work with at-risk children in a school setting. The program supports community efforts already in place to effectively intervene with at-risk students.

Historical Society

Educational Programming
FY 2018—All Funds: $26,200; SGF: $16,584
FY 2019—All Funds: $26,200; SGF: $16,584

Through its Education-Outreach Division, the Kansas State Historical Society provides educational programs for children throughout Kansas. Curricula used by Kansas schools in teaching Kansas history is developed by staff at the Society, and Society-sponsored traveling resource trunks provide historical materials relating to Kansas history and culture in classrooms throughout the state. The Society participates in seasonal special events for children, and programs for children are conducted at State-owned historic sites,

such as the Museum of History and Discovery Place, a hands-on gallery. In addition, the Society provides summer workshops on Kansas history at the Kansas Museum of History for students in kindergarten through sixth grade.

State Library

Summer Reading Program
FY 2018—All Funds: $40,500; SGF: $0
FY 2019—All Funds: $40,500; SGF: $0

The State Library sponsors a summer reading program for every public library in the state.

Kansas Reads to Preschoolers
FY 2018—All Funds: $3,800; SGF: $0
FY 2019—All Funds: $3,800; SGF: $0

Kansas Reads to Preschools is an annual event that promotes reading to all Kansas children from birth through age five. Through the statewide program, parents, librarians, and caregivers are encouraged to read the chosen title during November. Each year the chosen title features a theme. Past themes include safety, wellness, learning colors, and being active. The State Library purchases a copy of the chosen book for each public library.

Children's Ebooks
FY 2018—All Funds: $47,000; SGF: $0
FY 2019—All Funds: $50,000; SGF: $0

The State Library subscribes to two early learning resources for children: *Scholastic BookFlix* and *Britannica E-Stax*. Both allow unlimited simultaneous use so no reader has to wait for a book to be available. *BookFlix* is an online resource for children in grades Pre-K through third grade that pairs classic video storybooks with related nonfiction e-books. *Briannica E-Stax* is a resource for children in grades Pre-K through sixth grade and features nonfiction books covering science, math, history, art, language, and literature.

Learning Foreign Language
FY 2018—All Funds: $0; SGF: $0
FY 2019—All Funds: $0; SGF: $0

The State Library subscribes to Mango Languages, a database providing learning modules for more than 70 languages. Mango is available via the Internet and is accessible via mobile devices.

PUBLIC SAFETY

Department of Corrections

Lawrence Gardner High School
FY 2018—All Funds: $2,528,374; SGF: $2,451,425
FY 2019—All Funds: $2,528,374; SGF: $2,407,805

Beginning July 1, 2014, the Department of Corrections contracted with Smoky Hill/Central Kansas Education Service Center for educational services provided at Lawrence Gardner High School (LGHS) on the facility grounds. The contract includes the costs of salaries, administrative fees, supplies, and equipment to operate the school program. LGHS is an accredited high school program that requires skill mastery based on standardized grading systems.

The education program at LGHS consists of several different components designed to meet the needs of all students at the facility. The academic program consists of high school coursework and remedial coursework geared toward helping a student earn a high school diploma or the GED. LGHS is required to meet all the Quality Performance Accreditation requirements set for schools in Kansas by the Kansas State Department of Education. LGHS operates an institution-wide Title I program designed to help students struggling in reading, writing, and math to improve their academic skills. Special education services are offered for all exceptional students with a current individual education plan (IEP).

Adjutant General's Department

Starbase
FY 2018—All Funds: $1,586,000; SGF: $0
FY 2019—All Funds: $1,650,000; SGF: $0

This program provides fourth-, fifth-, and sixth-grade students a better understanding of math, science, and technology concepts during the summer months.

TRANSPORTATION

Kansas Department of Transportation

Safe Routes to Schools
FY 2018—All Funds: $855,496; SGF; $0
FY 2019—All Funds: $855,496; SGF: $0

This program provides federal funding to local governments for projects that make walking and bicycling to school safe for kids. Funds are available for a variety of projects that benefit elementary and middle school children in grades kindergarten through eighth. Projects include improvements to sidewalks, traffic calming, pedestrian and bicycle

crossing, on and off-street bicycle facilities, secure bicycle parking, and traffic diversions. Funds can also be used for traffic education and enforcement and training students on bicycle and pedestrian safety.

State of Kansas Education-Related Expenditures (Excluding K-12 School Finance)

	FY 2018 Governor's Recommendation		FY 2019 Governor's Recommendation	
	State General Fund	All Funds	State General Fund	All Funds
General Government				
Attorney General				
DARE Program	-	25,000	-	25,000
Total--General Government	**$ -**	**$ 25,000**	**$ -**	**$ 25,000**
Human Services				
Department for Children & Families				
Child Care Assistance	10,429,859	39,428,376	10,429,859	36,491,520
Child Care Quality	-	5,083,046	-	5,083,046
Independent Living & Life Skills Svcs.	393,977	1,969,886	393,977	1,969,886
KS Early Head Start	-	9,238,642	-	9,238,642
Vocational Rehabilitation Case Svcs.	1,043,906	4,900,967	1,217,749	5,717,131
Smartmoves	-	219,435	-	219,435
EPIC Skillz	-	188,583	-	188,583
Urban Scholastic Center	-	109,253	-	109,253
Project Impact	-	-	-	189,317
Kansas Reading Roadmap	-	9,790,950	-	9,790,950
Kidzlit	-	877,725	-	877,725
Jobs for America's Graduates	-	4,400,000	-	5,750,000
Communities in Schools	-	1,453,467	-	1,489,520
Subtotal--Children & Families	*$ 11,867,742*	*$ 77,660,330*	*$ 12,041,585*	*$ 77,115,008*
Parsons St. Hospital & Training Ctr.				
Special Purpose School	350,000	350,000	350,000	350,000
Health & Environment--Health				
School Health	375,376	691,907	353,061	691,907
Infant & Toddler Services	-	10,153,186	-	10,151,104
Newborn Hearing Aid Loaner Prog.	-	41,346	-	40,602
Newborn Screening Metabolic/Hearing	16,700	766,200	16,700	773,868
Subtotal--KDHE--Health	*$ 392,076*	*$ 11,652,639*	*$ 369,761*	*$ 11,657,481*
Total--Human Services	**$ 12,609,818**	**$ 89,662,969**	**$ 12,761,346**	**$ 89,122,489**
Education				
Department of Education				
Parent Education Program	-	7,237,635	-	8,237,635
Pre-K Program	-	4,132,317	-	4,132,317
Kansas Reading Success	2,100,000	2,100,000	2,100,000	2,100,000
Communities in Schools	-	50,000	-	50,000
Children's Cabinet Programs	-	15,607,840	-	18,018,476
Subtotal--Department of Education	*$ 2,100,000*	*$ 29,127,792*	*$ 2,100,000*	*$ 32,538,428*
School for the Blind				
Education of Blind Children	5,368,299	7,043,445	5,435,726	6,767,521
School for the Deaf				
Education of Deaf Children	8,831,258	11,044,447	8,899,869	10,798,266
Kansas Board of Regents				
Excel in Career Tech. Ed. (SB 155)	28,050,000	28,050,000	28,050,000	28,050,000
Emporia State University				

Ctr. for Early Childhood Ed.	12,023	480,489	12,023	480,489
Reading Related Services	26,450	26,450	26,450	26,450
Enhancing Your Future	12,690	16,790	12,690	16,790
Sonia Kovalevsky Math Day	-	1,500	-	1,500
MASTER-IT	16,721	20,721	16,721	20,721
Family Literacy Program	360	30,458	372	30,470
Yes, I Can Do Science & Mathematics	-	5,750	-	5,750
Subtotal--Emporia State University	*$ 68,244*	*$ 582,158*	*$ 68,256*	*$ 582,170*
Fort Hays State University				
Herndon Clinic	586,319	777,523	586,319	777,523
Tigers Tots Nursery Center	-	103,452	-	103,452
Subotal--Ft. Hays State University	*$ 586,319*	*$ 880,975*	*$ 586,319*	*$ 880,975*
Kansas State University				
Hoeflin Stone House	65,000	395,869	65,000	475,000
Early Childhood Laboratory	65,000	110,160	65,000	125,000
KSDE Food Program	-	7,000	-	7,000
Speech & Hearing Center	168,474	343,579	168,474	345,000
Subtotal--Kansas State University	*$ 298,474*	*$ 856,608*	*$ 298,474*	*$ 952,000*
Kansas State University--ESARP				
4-H Program	417,167	1,098,416	417,167	1,098,416
Youth Leadership Program	94,620	255,109	94,620	255,109
Army Youth & Teen Center	20,914	115,295	20,914	115,295
Community Youth Dev. & Training	26,998	114,745	26,998	114,745
Learning & Social Readiness	12,450	43,423	12,450	43,423
Improve Parenting Skills	707,299	1,371,609	707,299	1,371,609
Subtotal--KSU--ESARP	*$ 1,279,448*	*$ 2,998,597*	*$ 1,279,448*	*$ 2,998,597*
Pittsburg State University				
Pre-school Lab	17,587	34,694	17,587	34,694
Yes Program	17,636	35,350	17,636	35,350
America Reads Challenge	834	35,350	834	35,350
Science Day	-	984	-	984
Career Exploration	-	2,727	-	2,727
Subotal--Pittsburg State University	*$ 36,057*	*$ 109,105*	*$ 36,057*	*$ 109,105*
University of Kansas				
Hilltop Child Dev. Center	-	2,509,000	-	2,552,000
E.A. Hill Child Dev. Center	-	495,000	-	503,000
School Performance Series	-	52,000	-	60,500
Architecture Design Camp	-	27,000	-	27,000
Media Workshop	-	55,000	-	57,000
Institute for Young Musicians	-	74,617	-	74,617
Museum of Art Programming	48,000	146,825	45,100	113,850
Subtotal--University of Kansas	*$ 48,000*	*$ 3,359,442*	*$ 45,100*	*$ 3,387,967*
Wichita State University				
Speech Language-Hearing Clinic	94,300	503,300	94,300	503,300
Nursing Health Screenings	9,300	9,300	9,300	9,300
Nursing Students Services	17,250	17,250	17,250	17,250
PA Health Sciences Program	-	9,500	-	9,500
Upward Bound	-	391,255	-	391,255
Regional Math/Science Program	-	320,124	-	320,124

Upward Bound--Communications	-	245,723	-	245,723
TRIO Talent Search--Proj. Disc.	-	559,200	-	559,200
GEAR UP	-	3,500,000	-	3,500,000
Teacher Education Majors	-	23,758	-	23,758
Child Development Center	-	690,041	-	690,041
America Reads Challenge	-	85,850	-	85,850
Communities in Schools	-	16,681	-	16,681
Subtotal--Wichita State University	*$ 120,850*	*$ 6,371,982*	*$ 120,850*	*$ 6,371,982*
Historical Society				
Educational Programming	16,584	26,200	16,584	26,200
State Library				
Summer Reading Program	-	40,500	-	40,500
KS Reads to Preschoolers	-	3,800	-	3,800
Children's Ebook Collections	-	47,000	-	50,000
Learning Foreign Language	-	-	-	-
Subtotal--State Library	*$ -*	*$ 91,300*	*$ -*	*$ 94,300*
Total--Education	**$ 46,803,533**	**$ 90,542,051**	**$ 46,936,683**	**$ 93,557,511**
Public Safety				
Department of Corrections				
Lawrence Gardner High School	2,451,425	2,528,374	2,407,805	2,528,374
Adjutant General				
Starbase	-	1,586,000	-	1,650,000
Total--Public Safety	**$ 2,451,425**	**$ 4,114,374**	**$ 2,407,805**	**$ 4,178,374**
Transportation				
Kansas Department of Transportation				
Safe Routes to Schools	-	855,496	-	855,496
Total--Transportation	**$ -**	**$ 1,795,496**	**$ -**	**$ 1,795,496**
TOTAL--Excluding K-12 School Finance	**$ 61,864,776**	**$ 186,139,890**	**$ 62,105,834**	**$ 188,678,870**
TOTAL--K-12 School Finance	**$ 3,300,196,713**	**$ 4,762,177,654**	**$ 3,374,300,225**	**$ 4,891,622,272**
GRAND TOTAL	**$ 3,362,061,489**	**$ 4,948,317,544**	**$ 3,436,406,059**	**$ 5,080,301,142**

Estimated Expenditures for Children's Programs by Agency and Activity

Programs	Type	FY 2018 Estimate Number Served	FY 2018 Estimate State General Fund	FY 2018 Estimate All Funds	FY 2019 Estimate Number Served	FY 2019 Estimate State General Fund	FY 2019 Estimate All Funds
Department of Revenue							
Child Support Enforcement	N		--	$ 60,000	--	--	$ 60,000
Office of the State Bank Commissioner							
Credit Counseling	F		--	$ 175,000	$ 37,170	--	$ 175,000
Office of the Governor							
Child Advocacy Centers	C		$ 813,657	$ 997,005	$ 3,900	$ 801,338	$ 951,338
Domestic Violence Prevention	C		4,951,292	5,651,635	3,600	4,613,069	5,163,069
Total--Office of the Governor			*$ 5,764,949*	*$ 6,648,640*		*$ 5,414,407*	*$ 6,114,407*
Attorney General							
Child Visitation Centers	F		--	390,100	1,010	--	390,100
Child Death Review Board	C		--	111,100	400	--	111,100
Child Abuse & Neglect Program	C		--	276,360	2,100	--	276,360
Domestic Abuse Programs	F		--	973,600	35,350	--	973,600
DARE Program	C		--	25,000	12,120	--	25,000
Consumer Protection	C		--	15,150	404	--	15,150
Total--Attorney General			*$ --*	*$ 1,791,310*		*$ --*	*$ 1,791,310*
Secretary of State							
Safe-at-Home Program	F		--	$ 30,000	$ 249	--	$ 30,000
State Treasurer							
Learning Quest	F		--	$ 294,342	$ 70,359	--	$ 269,494
K.I.D.S. Matching Grant	C		375,000	375,000	625	375,000	375,000
Total--State Treasurer			*$ 375,000*	*$ 669,342*		*$ 375,000*	*$ 644,494*
Judiciary							
Child Support Enforcement	C		--	$ 866,125	$ 137,015	--	$ 866,125
Child Welfare	N		--	344,028	--	--	351,519
Court Services Officers--Civil	C		8,496,037	10,761,425	25,788	8,496,037	10,761,425
Permanency Planning	C		--	605,568	2,452	--	606,607
Total--Judiciary			*$ 8,496,037*	*$ 12,577,146*		*$ 8,496,037*	*$ 12,585,676*
Department for Children & Families							
Adoption Support	C		$ 20,947,941	$ 38,077,061	$ 9,476	$ 21,132,876	$ 39,149,286
Child Care Assistance	F		10,429,859	39,428,376	4,794	10,429,859	36,491,520
Child Care Quality	N		--	5,083,046	--	--	5,083,046
Child Support Enforcement	F		800,000	35,982,358	147,168	800,000	35,636,907
Community Services Funding	F		1,000,000	1,000,000	274	1,000,000	1,000,000
Disability Determination Svcs.	C		--	4,839,056	7,219	--	4,960,032
Low Income Energy Assistance	F		--	11,921,133	16,533	--	11,921,133
Family Preservation	F		705,206	10,340,792	2,394	704,746	12,421,537
Family Services	F		775,347	1,651,881	--	775,347	1,651,881
Human Trafficking	C		324,370	324,370	--	324,370	324,370
Independent Living & Life Skills Svcs.	C		393,977	1,969,886	901	393,977	1,969,886
KS Early Head Start	C		--	9,238,642	936	--	9,238,642
Permanent Custodianship	C		682,425	682,425	186	646,815	646,815
Reintegration/Foster Care	C		124,837,347	185,937,745	6,815	123,179,730	185,073,456
Foster Care Licensing	N		1,942,294	2,443,443	3,831	1,797,384	2,261,144
Temporary Assistance for Families	F		117,616	12,463,200	3,519	105,035	10,750,000
Vocational Rehabilitation Case Svcs.	C		1,043,906	4,900,967	1,530	1,217,749	5,717,131
Smartmoves	C		--	219,435	1,650	--	219,435
EPIC Skillz	C		--	188,583	265	--	188,583
Urban Scholastic Center	C		--	109,253	1,500	--	109,253
Project Impact	C		--	--	982	--	189,317
Kansas Reading Roadmap	C		--	9,790,950	23,076	--	9,790,950
Kidzlit	C		--	877,725	2,640	--	877,725
Jobs for America's Graduates	C		--	4,400,000	3,100	--	5,750,000
Healthy Families Initiative	F		--	3,100,000	370	--	3,200,000
Communities in Schools	C		--	1,453,467	14,749	--	1,489,520
Total--Children & Families			*$ 164,000,288*	*$ 386,423,794*		*$ 162,507,888*	*$ 386,111,569*
Department for Aging & Disability Services							
SUD--Women & Children	C		$ 10,123	$ 2,050,311	$ 1,020	--	$ 2,050,311
SUD--Youth Programs	C		8,545	540,000	5,000	--	500,000
SUD--Prevention	C		250,000	719,119	250,000	--	1,000,000
Mental Health Grants	C		2,207,681	7,158,024	4,909	2,207,681	7,158,024
Total--Aging & Disability Services			*$ 2,476,349*	*$ 10,467,454*		*$ 2,207,681*	*$ 10,708,335*
Parsons St. Hospital & Training Ctr.							

Special Purpose School	C	$	350,000	$	350,000	$	28	$	350,000	$	350,000
Health & Environment--Health											
Child Care Licensing	F	$	572,597	$	4,212,474	$	138,000	$	575,073	$	4,223,651
School Health	C		375,376		691,907		--		353,061		691,907
Child. with Special Health Care Needs	F		457,535		1,864,236		3,800		426,160		1,818,668
Immunizations	C		1,053,851		3,762,522		72,734		727,025		3,196,855
Infant & Toddler Services	C		--		10,153,186		10,150		--		10,151,104
Cerebral Palsy Posture Seating	C		130,621		155,705		825		130,621		155,705
Children's Health Insurance	C		9,140,000		108,540,000		55,200		9,080,000		121,990,000
Migrant & Refugee Health Services	F		12,669		1,776,932		2,222		12,896		1,756,185
Newborn Hearing Aid Loaner Prog.	F		--		41,346		40		--		40,602
Newborn Screening Metabolic/Hearing	C		16,700		766,200		39,000		16,700		773,868
Women, Infants, & Children (WIC)	C		--		57,224,347		99,000		--		56,536,896
Maternal & Child Health	N		2,218,439		10,267,564		80,120		2,171,486		8,763,745
KanCare Medical	F		471,760,000		1,050,940,000		238,500		497,310,000		1,143,500,000
Black Infant Mortality	C		13,913		13,913		--		13,913		13,913
Total--KDHE--Health		*$*	*485,751,701*	*$*	*1,250,410,332*			*$*	*510,816,935*	*$*	*1,353,613,099*
Department of Labor											
Child Labor Enforcement	C	$	1,187	$	1,187	$	682	$	1,187	$	1,187
Child Labor Education	C		505		505		5		505		505
Total--Department of Labor		*$*	*1,692*	*$*	*1,692*			*$*	*1,692*	*$*	*1,692*
Department of Education											
State Foundation Aid	C	$	2,001,591,131	$	2,803,289,524	$	476,800	$	2,162,421,996	$	3,005,795,109
Supplemental General State Aid	C		454,500,000		454,500,000		458,217		483,923,000		483,923,000
Capital Improvement Aid	C		--		190,000,000		458,217		--		200,000,000
Nutrition Services	C		2,510,486		204,048,703		540,000		2,510,486		209,003,541
Special Education Services	C		435,981,646		548,674,206		83,000		452,980,455		560,673,015
Vocational Ed.-Title II	C		--		4,750,000		21,210		--		4,750,000
Parent Education Program	N		--		7,237,635		--		--		8,237,635
Pre-K Program	C		--		4,132,317		--		--		4,132,317
Safety Education	C		--		1,682,000		16,000		--		1,682,000
Kansas Reading Success	C		2,100,000		2,100,000		--		2,100,000		2,100,000
Communities in Schools	C		--		50,000		20,200		--		50,000
Children's Cabinet Programs	C		--		15,607,840		--		15,543,866		18,018,476
Total--Department of Education		*$*	*2,896,683,263*	*$*	*4,236,072,225*			*$*	*3,119,479,803*	*$*	*4,498,365,093*
School for the Blind											
Education of Blind Children	C	$	5,265,749	$	6,746,832	$	1,903	$	5,303,512	$	6,534,350
School for the Deaf											
Education of Deaf Children	C	$	8,620,992	$	10,527,127	$	2,000	$	8,694,468	$	10,299,411
Emporia State University											
Ctr. for Early Childhood Ed.	C	$	12,023	$	480,489	$	104	$	12,023	$	480,489
Reading Related Services	C		26,450		26,450		415		26,450		26,450
Enhancing Your Future	C		12,690		16,790		222		12,690		16,790
Sonia Kovalevsky Math Day	C		--		1,500		54		--		1,500
MASTER-IT	C		16,721		20,721		17		16,721		20,721
Family Literacy Program	C		360		30,458		875		372		30,470
Yes, I Can Do Science & Mathematics	C		--		5,750		63		--		5,750
Total--Emporia State University		*$*	*68,244*	*$*	*582,158*			*$*	*68,256*	*$*	*582,170*
Fort Hays State University											
Herndon Clinic	C	$	586,319	$	777,523	$	485	$	586,319	$	777,523
Tigers Tots Nursery Center	C		--		103,452		26		--		103,452
Total--Ft. Hays State University		*$*	*586,319*	*$*	*880,975*			*$*	*586,319*	*$*	*880,975*
Kansas State University											
Hoeflin Stone House	C	$	65,000	$	395,869	$	44	$	65,000	$	475,000
Early Childhood Laboratory	C		65,000		110,160		15		65,000		125,000
KSDE Food Program	C		--		7,000		70		--		7,000
Family Center	C		50,000		60,157		42		50,000		65,000
Speech & Hearing Center	C		168,474		343,579		65		168,474		345,000
Total--Kansas State University		*$*	*348,474*	*$*	*916,765*			*$*	*348,474*	*$*	*1,017,000*
Kansas State University--ESARP											
4-H Program	C	$	417,167	$	1,098,416	$	97,650	$	417,167	$	1,098,416
Youth Leadership Program	C		94,620		255,109		42,058		94,620		255,109
Army Youth & Teen Center	C		20,914		115,295		5,676		20,914		115,295
Community Youth Dev. & Training	N		26,998		114,745		31,879		26,998		114,745
Learning & Social Readiness	C		12,450		43,423		43,856		12,450		43,423
Improve Parenting Skills	F		707,299		1,371,609		75,750		707,299		1,371,609
Promote Healthier Lives	F		444,542		3,122,531		252,500		444,542		3,122,531
Health Education	F		--		217,115		10,100		--		217,115
Build Strong, Healthy Communities	F		429,887		804,410		10,100		429,887		804,410
Total--KSU--ESARP		*$*	*2,153,877*	*$*	*7,142,653*			*$*	*2,153,877*	*$*	*7,142,653*
Pittsburg State University											

Pre-school Lab	C		$ 17,587	$ 34,694	$ 35	$ 17,587	$ 34,694
Yes Program	C		17,636	35,350	535	17,636	35,350
America Reads Challenge	C		834	35,350	606	834	35,350
Science Day	C		--	984	492	--	984
Career Exploration	C		--	2,727	1,256	--	2,727
Kansas Council on Fitness	C		--	22,725	17,170	--	22,725
Total--Pittsburg State University			*$ 36,057*	*$ 131,830*		*$ 36,057*	*$ 131,830*
University of Kansas							
Hilltop Child Dev. Center	C		--	$ 2,509,000	$ 314	--	$ 2,552,000
E.A. Hill Child Dev. Center	C		--	495,000	60	--	503,000
Assistive Technology	C		--	407,561	1,323	--	407,561
School Performance Series	C		--	52,000	10,200	--	60,500
Natural History/Biodiversity	C		57,133	221,026	15,700	57,113	221,026
Respite Care for Families	C		--	66,100	336	--	66,100
Architecture Design Camp	C		--	27,000	32	--	27,000
Media Workshop	C		--	55,000	130	--	57,000
Institute for Young Musicians	C		--	74,617	38	--	74,617
Museum of Art Programming	C		48,000	146,825	4,000	45,100	113,850
Total--University of Kansas			*$ 105,133*	*$ 4,054,129*		*$ 102,213*	*$ 4,082,654*
University of Kansas Medical Center							
Cystic Fibrosis Grant	F		--	$ 40,000	$ 206	--	$ 40,000
Pediatric Consultation Services	C		--	--	205	--	--
Center for Child Health/Dev't.	F		--	20,000	3,791	--	20,000
Special Health Care Services	F		--	172,000	1,610	--	172,000
Project EAGLE	C		--	2,800,000	250	--	2,850,000
Sutherland Institute	C		--	45,000	75	--	45,000
Audiology Clinic	F		--	--	1,717	--	--
Feeding Clinic	F		--	--	227	--	--
Hartley Family Center	F		--	--	48	--	--
Total--KU Medical Center			*$ --*	*$ 3,077,000*		*$ --*	*$ 3,127,000*
Wichita State University							
Speech Language-Hearing Clinic	C		$ 94,300	$ 503,300	$ 2,250	$ 94,300	$ 503,300
Dental Hygiene Clinic	C		39,000	43,486	1,900	39,000	43,486
Nursing Health Screenings	C		9,300	9,300	2,000	9,300	9,300
Nursing Students Services	C		17,250	17,250	6,000	17,250	17,250
PA Health Sciences Program	C		--	9,500	70	--	9,500
Upward Bound	C		--	391,255	152	--	391,255
Regional Math/Science Program	C		--	320,124	74	--	320,124
Upward Bound--Communications	C		--	245,723	105	--	245,723
TRIO Talent Search--Proj. Disc.	C		--	559,200	1,165	--	559,200
GEAR UP	C		--	3,500,000	2,500	--	3,500,000
Teacher Education Majors	C		--	23,758	540	--	23,758
Heskett Center	C		--	3,000	190	--	3,400
Child Development Center	C		--	690,041	190	--	690,041
America Reads Challenge	C		--	85,850	200	--	85,850
Communities in Schools	F		--	16,681	300	--	16,681
Total--Wichita State University			*$ 159,850*	*$ 6,418,468*		*$ 159,850*	*$ 6,418,868*
Historical Society							
Educational Programming	C		$ 16,584	$ 26,200	$ 996,609	$ 16,584	$ 26,200
State Library							
KS Talking Books Services	C		$ 339,942	$ 581,594	$ 165	$ 327,062	$ 587,702
Summer Reading Program	C		--	40,500	89,000	--	40,500
KS Reads to Preschoolers	C		--	3,800	20,500	--	3,800
Children's Ebook Collections	C		--	47,000	578,478	--	50,000
Learning Foreign Language	C		--	--	73,785	--	--
Total--State Library			*$ 339,942*	*$ 672,894*		*$ 327,062*	*$ 682,002*
Department of Corrections--Juvenile Justice							
Community Case Mgt.	C		$ 7,074,117	$ 7,074,117	$ 219	$ 7,074,117	$ 7,074,117
Intake & Assessment	C		5,850,117	5,850,117	12,727	5,850,117	5,850,117
Intensive Supervision	C		5,698,591	5,698,591	559	5,698,591	5,698,591
Juvenile Accountability Block Grant	C		--	25,000	--	--	25,000
Delinquency Prevention	C		--	666,667	150	--	407,423
Prevention/Intervention	C		1,761,049	1,761,049	7,100	1,761,049	1,761,049
Total--Department of Corrections			*$ 20,383,874*	*$ 21,075,541*		*$ 20,383,874*	*$ 20,816,297*
Kansas Juvenile Correctional Complex							
Facility Operations	C	210	$ 19,215,405	$ 20,591,190	$ 210	$ 20,224,334	$ 20,760,903
Adjutant General							
Starbase	C	5,200	$ --	$ 1,586,000	$ 5,200	$ --	$ 1,650,000
Department of Wildlife, Parks & Tourism							
Archery in the Schools	C	37,760	--	$ 30,171	$ 38,940	--	$ 30,171
Hunter Education	C	10,000	--	203,000	10,000	--	203,000

Boating Safety	C	2,500		--	60,000	2,500		--	60,000
Fishing Clinics	C	62,000		--	89,000	62,000		--	89,000
Wildlife Education Service	C	220,000		--	294,792	220,000		--	294,792
Furharvester Education	C	1,400		--	7,000	1,400		--	7,000
Pass It On Program	C	3,800			60,000	3,800		--	60,000
Total--Wildlife, Parks & Tourism			*$*	--	*$ 743,963*		*$*	--	*$ 743,963*
Kansas Department of Transportation									
Child Passenger Safety	C	5,555		--	$ 100,000	$ 5,555		--	$ 100,000
Safe Routes to Schools	C	60,628		--	855,496	60,628		--	855,496
Teen Safe Driving	C	1,515		--	15,000	1,515		--	15,000
Traffic Safety Res. Office	C	75,000		--	600,000	75,000		--	600,000
Teen Driving Study	C	1,900			225,000	1,900		--	225,000
Total--Dept. of Transportation		*144,598*	*$*	--	*$ 1,795,496*		*$*	--	*$ 1,795,496*
Total--Children's Programs			**$**	**3,621,199,779**	**$ 5,992,646,156**		**$**	**3,868,054,323**	**$ 6,357,242,447**

In The Matter Of:

State of Kansas v.

Senate Select Committee on Education Finance

March 29, 2018

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T R A N S C R I P T

O F

J O I N T M E E T I N G

of the House K-12 Education Budget Committee

and

Senate Select Committee on Education Finance

Chair Fred Patton, Presiding

Held on the
29th day of March, 2018

Commencing at
12:45 p.m.

Kansas Statehouse
Supreme Courtroom
Southwest 8th & Van Buren Streets
Topeka, Kansas

COMMITTEE MEMBERS PRESENT:

Representative Helgerson
Representative Smith
Representative Hoffman
Representative Trimmer
Representative Huebert
Representative Vickrey
Representative Johnson
Representative Winn
Representative Jones
Senator Baumgardner
Representative Karleskint
Senator Denning
Representative Landwehr
Senator Estes
Representative Lusk
Senator Goddard
Representative Patton, Chair
Senator Hensley
Representative Rooker
Senator Kerschen
Representative Aurand
Senator Pettey
Representative Schwab

CHAIR PATTON: Good afternoon. We're going to get started with what I at least scheduled as our final joint committee hearing. We can keep our fingers crossed that it is our final one but we'll see what the next couple weeks have in store. Today we have Dr. Levin here to present to us a review of the Dr. Taylor study. As you recall, he reviewed the two prior studies.

The senate actually met with you via telephone. This is the first opportunity for the house to be present with you whether in person or via phone. Welcome. I'm just going to turn it over to you at this point.

(THEREUPON, a series of documents were displayed overhead).

DR. LEVIN: Thanks so much for having me. So I'm here to talk about the report that we all got not so long ago by Dr. Lori Taylor, Jason Willis and his colleagues at WestEd. Let me just jump right in. So what I wanted to do first was just give a very quick overview of the study as I see it by Taylor et al. and then describe some of the main concerns that I had

with the paper. And then just really touch very briefly on some of the differences in the findings of this study from the last study that was done in 2006 by LPA.

So, as most of you know, this was a cost function approach, which is one of the four major approaches that's used to cost out an adequate education. However, the cost model approach used in the LPA study was different from this one. This was what we call a stochastic cost frontier model. The cost frontier model is really interesting because it allows one to estimate the efficiency of individual units of observation. In the case of the Taylor et al. paper this was schools. And in the cost function approach, what we're trying to do is, we try to, I would say let's call it describe the variation, is what we say, or estimate spending as a function of various cost factors including input price levels, scale of operations usually functionalized as district enrollment, other environmental factors including student needs, controls for efficiency, and outcomes. And then what it does is, it also adds an inefficiency term to

the equation which allows you to identify which units are more or less efficient. And then, finally, there are random factors that occur. And that's the stochastic in the stochastic cost frontier model.

It's a little easier to see what's going on from a picture like this. So on the Y axis, what you're going to see is the per-pupil cost of providing a given level of student outcome. Okay. And on the X axis we have economies of scale or size of district, if you will. And the line that curves down that all these nice little schoolhouses are on is really the minimum cost frontier. What we'll see is that some schools are going to be above that cost frontier. And this is going to be due to those two factors: The inefficiency that we can identify with each of these units and also the stochastical random factors that might happen. A lot of times in the literature they'll say, it was a rainy day when they were doing testing, or there might have been a natural disaster, things like that. So there's a combination of this inefficiency that we can identify within individual schools or districts

and then this truly random factor.

Here -- so that's sort of the model that she ran. I don't want to go into it too much because you probably all read the report and you already had a briefing by Dr. Taylor. Here's really the results that she came up with. And what we find is a base per-pupil cost. And this is to deliver a 95 percent graduation rate. And I did this for her scenario B, which is to ensure that within five years 75 percent of students will be performing at levels 3 or 4 on the KAP ELA and math tests.

The next three columns that you see here are really the cost factor adjustments or indices. One is for our regional index which includes that difference in the cost of the price level inputs, such as teacher salary. There is also pupil density that's in there and a few other factors. The economy of scale index is merely just, it's just really a size factor, district size. And then the student needs index is really a composite factor telling you how much more it would cost to provide an adequate education for students that are in poverty, English learners or special

education. So she put together compensatory factors as well, one under the old standards and the new standards.

So I realize I'm mistaken: The base per-pupil cost here actually is a set base and there are different weighting factors for whether you want to consider adequacy based on the old standards or the new standards.

And so these numbers here in the index columns, what do they tell us? Well, they tell us really what is the relative increase in funding necessary to provide an adequate education for districts with these different cost factors or needs. So, for instance, the student needs index really says it's going to be the raw average across districts is 1.35. The weighted average is what I would look at. And that is really 1.39. So it's about 40 percent more per student to educate students that are at-risk above and beyond a student with no additional needs. Okay. And in addition there are these compensatory factors and that is there to reduce the gap between those districts that are performing below the threshold and those that are meeting the

threshold. So over, the right-hand-most four columns gives you the per-pupil dollar figures that really were generated by their analysis. The 9,313 that is the current per-pupil spending that they calculated for 16-17. And then we have the projected per-pupil costs considering, considering just the regional scale and needs adjustments only. And then if you also add on top of that the compensatory, under the old standards and new standards, you've got those last three columns. For instance, I'm just going to point to that weighted average row. So statewide, the group said that, you know, you were currently spending 9,313. In order to provide adequacy under the old standards, it would cost you about 13,204 per student. And under the new standards it would go up to 13,767 because the new standards are more rigorous. What does this mean in terms of the bottom line? This is copied directly from the report. Really what we're looking at here is, with the compensatory support, under the old standards, it would be 38 percent more. And for the new standards, that's the scenario B, it's about 44.4 percent

more. Without that compensatory support, it would be about just under 10 percent more to fund.

So what are my main concerns with the study? First of all, I thought it was a very very good study, just to let you know. I thought it was fairly cutting edge and done very very well. There were some places that things weren't documented as well as they could have been so I don't have a lot to say about those parts of it. But all that being said, I do have some concerns. One is the scale index. And so that economies of scale index, for the smaller to medium sized districts it really works very well, as we might expect. However, when we get to the medium to much larger districts, it really produces uncharacteristically large funding adjustments for the bigger districts. And really this result seems to be a function of how she modeled it. And specifically, for those of you who are mathematically inclined, she put into the model enrollment and enrollment square to give a curvilinear relationship between the enrollment variable and spending. What that

does is it creates a function that looks like this. Also note, again for those mathematically inclined, she modeled it as log of enrollment and of enrollment square. So what we have on the X axis here is the log of enrollment and then on the Y axis is that scale index. That is what is the relative amount more that you have to spend on a district with a certain size compared to the optimally-sized district. And as we can see - I'll use my cursor here - the optimally-sized district is right here, a little above the 1,000 range. Note this is a logarithmic scale. So this is 1,000 to 10,000. This is 10,000 to 100,000. Think of it as you move to the right on the scale, it becomes more compressed. Okay. What we have here is we have the locus of all points for every district's enrollment and what the model will fund based on the scale index. And what we see is, as you go from a very low enrollment district, up until this optimally-sized district, we call it, the one that minimizes costs, you really have these scale index factors coming down until they hit 1. So the minimum cost is 1.0. After that it

almost goes symmetrically goes back up - again this is in logs - until we hit this number right here, which is around 20-something thousand. And this is where Dr. Taylor and her partners top coded, basically cut off and set that enrollment, set enrollment at sort of a maximum factor at 20-some-odd thousand. That's why you see this leveling out. So why this is a little bit, a little bit concerning is that the numbers up here for the cost factor are about 1.97. So it's saying that it costs, all other things being equal, it costs about 1.97, almost two times as much to adequately fund a student in a district that is 20,000 or more than it does for the optimally-sized district. And some of these districts are actually pretty affluent up there as well. So that's a little concerning. I put a little animation in here so you can see the three areas. So the first area on your left is really the decrease in cost with enrollment. Then you have, around the optimally-sized district, really a leveling off of costs. And then you see a steep increase in costs with respect to enrollment there.

This is the same graphic except for what I have done is I have taken out those higher poverty districts. So this represents only the districts in the lower half of the poverty distribution. In other words, the lowest 50 percent of districts with respect to poverty. Okay. So we call those poverty quartile 1. Those are the most affluent, if you will, or the least impoverished districts, and poverty quartile 2. And what you see is, up here there are some relatively low-need districts in terms of their poverty and that makes it a little scary. So you might have a very affluent district that's up here that's getting two -- would get two times as much as another district that's down in the optimally sized. And it could be a district that's in extreme poverty in the fourth quartile. Up here there are about 11 districts that are in this quadrant that I've pointed out. That's roughly above 5,700 in terms of enrollment. That's the vertical line. And the horizontal line makes the cutoff at about 1.2, so those districts which start off getting 20 percent more than the optimally-sized district. What we see up

here, there are 11 districts up there. Out of those, I think five of them have cost factors that are 1.35. So they would get 35 percent more per pupil, all else being equal. And three of them up here would get 1.97, almost two times as much. So there is a bit of a concern there. This is very different than the modeling specification that was used by Duncombe & Yinger for the LPA study back in 2006. This is a bit of a different take on how to look at this. But it tells you the same type of information. In that study they broke up, they coded their variables into discreet categories of enrollment. So down here we have very small districts of up to 100 students. It goes 100 to 150, 150 to 300, etcetera, etcetera. And these bars here are telling you how much less funding in relative terms districts of increasing size get relative to the smallest district. So, for instance, if you go down to a district of 751 to 1,000, Duncombe & Yinger found their per-pupil funding should be approximately 45 percent less than the funding of a district that was in the smallest category. This really represents this

part of the graphic here. Okay. It's telling the same story. That is per-pupil costs are decreasing as enrollment goes up, as one would expect. What Duncombe & Yinger do in this is they really top code theirs at about 5,000. And what we see is that there is a little bit of a jump when they get to 1,700 to 2,500 that is the optimal size in the model where costs are at minimum and then the costs start bumping up a little bit. But it's a very different type of modeling exercise that they did to take this into account. Now, that's not saying that some districts that have much higher enrollment don't have other needs. But those other needs should be also caught. Let's say Duncombe & Yinger found an interaction between poverty and pupil density. So they really said there was a separate independent effect of being in a highly impoverished urban district basically. And that should pick up that effect. That's obviously going to be very highly correlated or related to these high enrollment districts. But the concern here is there are other districts that might not have some of those component needs that might get funded under the

Taylor et al. study.

So the next concern that I have is really one of the costs of meeting the achievement thresholds. And it's not saying that there's anything wrong with their paper at all. It's just the study documentation was a bit lacking and it really didn't tell me how the national curve equivalents they calculated translated into proficiency rate gains, which is very key because the threshold is in a metric which is proficiency rates. And what they are usually in their model are these national curve equivalents, which is sort of a normal typical progression or growth on test score by students. Moreover, I wasn't really sure how the calculations behind the compensatory indices were made. So I know we all received a memo this morning that may have some of that. I still haven't made it through the whole thing, unfortunately. So that might answer some of these questions. But when I was reviewing the paper, I did not have this information.

So another concern that I had was hold harmless. Now, what is hold harmless? Well,

usually when a new funding formula is enacted, some people will call them winners and losers. But really what it is, some districts are projected more funding than they currently are spending and others might be projected less funding than they need that are currently being spent. Right? And hold harmless specifically says, for those districts that are currently spending more than the funding formula projects for them, we're going to hold them at their current funding levels. Okay. Now, this rule implies that there are some districts, the hold harmless districts, that are spending more than they need to to be sufficient, adequate, whatever you want to call it. Different states call it different things. Now, there is a logical reason for a limited application of hold harmless policies when you're phasing in a new funding formula. That is schools take time to build up their programs and you don't want to just cut them off immediately. You want them to have a smooth transition if they have to decrease their spending. However, that being said, there's two good reasons not to hold districts harmless indefinitely. And the

first is that there is a very real cost. That is here is money that is above and beyond what a district might need to provide an adequate education and that money could be spent actually helping other districts that are not getting or have not been getting the funding that they needed. So there is sort of a distributional reason why you would not want to hold districts harmless indefinitely. And really at the end of the day, it undermines the whole equity intent of the funding formula. Here we've tried to develop a funding formula that's very equitable and adequate and if you don't have districts on the formula, that is the districts that are being held harmless, you're really undermining the equity intent of the formula. So I just want to strongly urge that you consider this when you're developing policy.

My recommendation is that, first of all, the study should be the following. They should certainly calculate the additional cost of holding districts harmless and next they should suggest some sort of plan for tapering down the hold harmless, I'm going to call them subsidies

because that's pretty much what they are, as the funding formula is being phased in. For instance, when I did work previously in New Mexico I suggested a three-year phasein where the hold harmless would be tapered down over that three years. Okay.

My next concern was one of validity checks. And I think it's just best practice that every costing-out study should have some sort of validity checks. So there was nothing in this study but there is a simple check that I've done before and I took it upon myself to do it for this study based on the data that I had at my disposal. So what I did here is this. You want to make sure that the funding that is being projected from your formula is being targeted to districts appropriately. That is, those districts that really have the -- tend to have lower outcomes are going to have money targeted to them because that's what this money is for, it's to try to control for all the needs but to promote student achievement up to some adequate level. So what I do is I define a measure of relative shortfall funding as follows. It's very

simple. It's just the ratio of the adequate per-pupil cost that comes out of a funding formula for each district and you divide it by their actual cost. This is simply a measure of relative shortfall in funding. The numerator says what the formula dictates they need to provide the adequate education. The denominator is what they're currently spending. A number of 1.2 would be something like this district needs 20 percent more per-pupil to provide an adequate education compared to what they're getting.

So you can use this measure to evaluate how achievement might vary by the funding gap. And what would we expect? Well, if we've done our jobs right and we've created a funding formula that targets dollars appropriately to those districts that need it, we should see a negative relationship between the size of the funding shortfall, that is that adequacy gap, and the achievement level.

So I've done some graphics here. I'm going to just go through this. I didn't have all of the data from the study so I did capture data from appendix E to get the adequate

projected costs. I had to go to federal data to grab the actual cost because that was not in any appendix. And I went to your state website for the Kansas State Department of Education website and grabbed the data on student outcomes. And it was great, a great website. And I put it together and I created graphics that look like this. This is a scatter plot. On that X axis is the funding shortfall and the Y axis is the percent of students that are -- well, were achieving at a level of 2 or above. This is really scenario A, the metric in scenario A from the Taylor study. Each one of these dots or circles is a different district and the size of the circle is proportional to how many students that are in that district. So the larger circles are going to be larger districts. And the red line shows the line of best fit through the districts. So it shows the relationship between the outcome measure we're looking at, which is the percentage of students at level 2 or above, and the funding shortfall. And lo and behold we do see that the results are quite valid in terms of there is a negative relationship. Those districts

with larger projected shortfalls tend to have lower achievement. Okay. Now, I've done this for ELA scenario A and also scenario B. Now, the Y axis is the more stringent measure which is the percentage of students that are passing, that are scoring a level 3 or above on the KAP. I've also done this for math for both these measures. Now, the one thing that I did not mention to all of you was the horizontal dashed line. Those are the threshold benchmarks that are used in the Taylor et al. study. So for scenario A, it's 90 percent of students should be passing at levels 2 or above. And for B, 60 percent of students should be passing at levels 3 or above. Now, what are the main conclusions that we get from this? Well, I already told you the first, the relationship between student achievement and relative funding shortfall is consistently negative. In addition, I ran correlation coefficients, which I'm not going to present here, but show that the correlation coefficients are negative and strong and highly highly significant. But the second thing is that there are really very few districts currently that are meeting the outcome

thresholds used in the study. Simply put, I can take any one of these graphics and there are very few districts that lie above the dashed horizontal line. So there is work to be done. It's not just the needy districts or the relatively more needy districts, it's all of the districts that need a push.

So the last thing I wanted to talk to all of you about is really the differences in the cost study findings. And as we all know, there was a very large difference in the reported costs in both studies and any normal reader would be scratching their head saying, how can this be? The LPA study came up with a measure that was about 400 million, just under 400 million, while the Taylor et al. study came up with a 1.79 billion and a 2.1 billion, depending on what scenario you're talking about. So how can we explain the differences here? And I just did a very simple investigation here. Well, the first thing is you're going to want to adjust for inflation because the LPA study was done back in 2006. The second thing is that the LPA study did not include a large portion of federal dollars.

About, I believe it was 205 million in 2006 dollars that they did not include in their estimates. They backed those out. And so then, finally, the Taylor study did not include food services or transportation. So these are differences in the two studies that we might be able to do something about. All right. Once we adjust for inflation and we adjust for inflation and add back in that federal funding, the LPA study figure increases by over 50 percent from that 400 million to about 719 million. And I just used the inflation, that CPO for the midwest states. Easily available downloadable from the Bureau of Labor Statistics website. So the -- I was not able to back out the food services and the transportation from the LPA figures. But this would work in the opposite direction where -- oh sorry -- add the food services and the transportation back into the Taylor figures. But that would cause to increase the differences some more. So there is no help there. But, you know, the adjustments to the LPA got a little closer, the increases that Taylor would increase the difference here.

Here is just a picture of what I have done here. The big action here is really, this is the current spending in 2016-17 dollars. This was -- these were the dollars that the LPA study said were necessary. This is if we inflate those dollars to 2016. This is if we add the inflated federal funding back into that. And then these are just the numbers straight from Taylor et al. So we've come a little closer. You know, these percentage differences are how much in relative terms you would have to spend above the current spending. Based on the LPA results with the adjustments, it would be about 15 and a half percent more. The Taylor scenario A, which is sort of the closest outcome standard to that, is still double that amount. So there's still a big difference here. So there are remaining explanations. One explanation is, even though Taylor and her colleagues did their best to try to equate the standards from 2006, that is by sort of cross-walking the old standards to 90 percent of students are going to score at a level of 2 or above on the KAP tests, it might not be exact. Okay. So that could account for

some difference. And I don't have any answers for you on this. These are just remaining explanations that could be the case. Finally, this is a huge explanation and this is my contention, that the LPA study was not a pure costing out study. Okay. The work that Duncombe and Yinger did was a cost study that was in a larger study that had many many components that were what I would call a spending analysis, just an analysis of spending of those lower-spending districts. And that was coupled with the funding weights, or the cost weights rather, from Duncombe and Yinger study. So the LPA study I would -- it's what I would expect. I mean, it's going to an underestimate of what, you know, of what the true cost of providing adequacy is. And I think that's the main culprit here in terms of why we see such a big difference. I know these differences shock people but you really have to understand what went into the studies to make sense of the results before you can come to a conclusion. And these are the conclusions that I came to. So that's what I have for you.

CHAIR PATTON: Do we have questions?

Representative Bollier -- or Senator, excuse me, Bollier.

SENATOR BOLLIER: We knew each other by different names. Thank you, Mr. Chairman. Could you repeat what you said about there are not winners and losers?

DR. LEVIN: Yeah. So from a district's perspective, they would certainly consider themselves winners or losers. However, if we have developed a funding formula that appropriately distributes an adequate amount of money, there aren't winners and losers. There are districts that have historically been getting more than what they've needed to provide adequacy and other districts that have traditionally been getting less than what is necessary. You could almost flip the winners and losers labels around for those districts and put a, historically, in front of that. Right? So there are historic losers and historic winners and we are trying to even the playing field. Is that helpful?

SENATOR BOLLIER: Thank you.

CHAIR PATTON: Representative Johnson.

REPRESENTATIVE JOHNSON: Thank you, Mr. Chair. I'm trying to grapple with a few of the things here. You mentioned LPA used an investigation of the existing spending. Was that not part of the Taylor study?

DR. LEVIN: No. When I say spending, I mean spending as it is, not looking at the relationship between student needs or even outcomes or other cost factors. So they literally, what they did was, they went to -- well, they did a lot of things. But they went to different samples of districts and they basically looked at what the average resource utilization, the staffing per -- that number of FTEs per student were for different staffing categories, and then took the average of the lowest third of those. Then they costed that out. Right? They determined what that spending was. So it's basically taking a subset of the lowest spending, taking a subset of districts that were the lowest spenders or resource utilizers and then saying that that is -- interpreting that as an adequate, a measure of adequate cost. Which it's not. So a large portion of their study was based on that. The

portion that wasn't was based on the sub-study by Duncombe and Yinger. And that was a cost function approach. So they adopted the cost function approach to get weights for poverty and English learners and applied those to spending figures, basically. Is that helpful?

MR. JOHNSON: It helps me feel better about when I attempt to explain something, I'll say that. It is hard to explain so I would still want to relate it to the student needs and outcomes. I wouldn't want to ignore that as I come up with that average utilization.

DR. LEVIN: Yeah. Well, so the student needs and outcomes were not considered at all. So think of it this way, we're going to this subset of districts that we know are the lowest resource utilizers. There might be some high achievers or low achievers. There might be a big range of outcomes in there as well. We just don't know. But you're basically taking the spending of those lowest spenders and then saying that would be adequate. And that's not -- there is nothing wrong with doing that. What's wrong is interpreting that as a cost figure. When we

say cost, economists, we always talk about cost of purchasing what, what are you getting for it? So there should be some sort of achievement attached to that. And ideally it should be conditioned on cost factors that are outside of the district's control.

MR. JOHNSON: And if I may continue in a little different direction. On the -- in any model, I can build a great model but the key is the assumptions that will drive it. Right? So the box is working correctly, I know what I think some of the key drivers are of the outcomes. And perhaps you would have a better handle on that. But the 95 percent that we've discussed is one that certainly comes up and would seem to be a large driver of that outcome. Is that a level that's commonly employed in other states? Do the consultants typically help us to set that? Do they work with, if the legislature is working to set an objective to figure out and test those assumptions?

DR. LEVIN: So this is a very difficult issue and it's one of your big jobs that's very difficult to do and that is setting

standards. As economists, we have to cost out some kind of standard that defines adequacy. We are not in the role of determining those standards at all. Okay. It's really up to the policy maker in the state, namely the Board of Education, the state department of education and the legislature to determine that. We're put in kind of a difficult position because we have to functionalize a definition, otherwise we can't do our work. Now, in this case, in this case I think that, you know, Taylor et al. did a very good job. And they took three kinds of approaches. One is they looked at districts that were high performing, that is in the 90th percentile. The second thing they did was to try to look at historical figures that on performance that was in the years when schools were appropriately funded. There was a few years back then. Right? But the third thing they did is they looked at your ESSA plans, the plans your state department sent to the federal department of education and pretty much pulled those. So in your state ESSA plan it's saying by 2030, you should have 75 percent of your students at levels 3 or 4. As to whether

that's a good standard or not, I can't, I can't tell you guys what an appropriate standard is for you, if that's the question.

MR. JOHNSON: If I may be a little clearer on that. My first attempt at humor I won't try to repeat. But the 95 percent, as you review peers, is this generally where we are working on across the county as funding at a 95 percent outcome-based model?

DR. LEVIN: I can't say. I don't even know most of the states. I mean, I know some of the states I've worked in. But the rate -- yeah. I can't say. I can't say. I would have to actually go to the books and look across the states to give you --

MR. JOHNSON: Thank you. I'm sure both the committee and the folks in the audience will want to give me the hook quickly. As I try to get a handle on how to use it and I look at, okay, as I apply this, and I look at what it does perhaps for Wichita and Winfield, where there is a clear increase and a clear decrease, I say, okay, how do I get this data to useful, how do I get a model, how do I deal with the 95 percent? And in the history, when

I would build models, we would spend weeks building a model and in ongoing years forever working on assumptions because that was the key in testing, trying to bring those back. So in some ways, I feel we may have built a really great engine to get us to Columbia, Missouri, but our goal may have been to get to Kansas City. So that's what I'm trying to get a sense for. And it would seem, as we try and test that model, we might look the other way around as well and say, not only do dollars -- we're going to look at the outcome we want and the output from the model is dollars, how do we turn that around and say, if we put $1,000 into the base, what are the range of outcomes we would expect to be driven across these models? That would seem to be how I turn that to something that might give us kind of more off ramps to say, how do I appropriately implement in a Wichita, in a Winfield? Is there any way we can work with the data to get closer to that?

DR. LEVIN: Well, I think what you're describing is what we call in economics is the dual to the problem. And that is really a

production function as opposed to a cost function. Right? So where you're trying to model production as a function of costs, well, as a function of costs and all of these other things. So you can try to take the models that we've looked at and put outcomes on the left-hand side. That being said, I think that the think the memo today provided some sensitivity analyses and bottom line dollar figures under different assumptions of what the threshold would be. So I think that's in the memo that we all got from Dr. Taylor today. So that would help you, using the same model, you know. And then basically it's just changing the outcome threshold, saying, well, maybe we don't need that. I'm not sure if I followed you in terms of comparing two districts. I mean, they have all of their observable characteristics. And one thing that I do put in my review is there could have been a little more digging into looking at the efficiency metrics that were estimated to see which district, well, which schools were operating more efficiently. And a next step would be to dig into those schools and say, okay, what's

going on there. If you have two schools that were operationally similar but one is operating more efficiently than the other, well, one school can learn from the other or we can learn from the school that's doing things more efficiently. And maybe that can tell us something. And you can put a dollar term on that as well on what the efficiency gain is in terms of dollars.

MR. JOHNSON: Thank you for the committee and you for indulging my questions.

CHAIR PATTON: Senator Pettey.

SENATOR PETTEY: Thank you, Mr. Chairman. I was just -- and thank you, Dr. Levin, for being here. I'm just going to the back of your presentation. So to me that last paragraph says a lot because you say that both studies point to a need significantly to -- for significant additional funding to support an adequate education in the state. Is that valid? That's what I'm reading from your --

DR. LEVIN: I think that's what both studies -- that's why I'm comparing the LPA study to the --

SENATOR PETTEY: And then in your

very last line, I'm trying to then use table 9 at the very back of your presentation to understand, I guess, the methodology, methodological differences in how to figure and calculate.

DR. LEVIN: So -- I'm sorry. I'm just getting with you here. So table 9 there?

SENATOR PETTEY: Uh-huh.

DR. LEVIN: That's showing you that while there might be a large absolute difference in the results of the LPA study and the Taylor et al. study, the numbers move in the same direction. That is, if one, if one district tends to be, tends to have higher projected adequate funding in one study, it will also tend to have higher projected adequate funding in the other study. They're telling you the same thing. The two series, if you have two sets of adequate per-pupil funding projections, one from each study, they move very closely to one another.

SENATOR PETTEY: So in both studies you're saying that they're pretty parallel to each other in how they --

DR. LEVIN: Yes. The absolute values

change for the various reasons that I talked about. Namely, the last reason I said was I really think the LPA study was not a true cost study. So because so much of that was based on actual spending of low-spending districts, that that's going to be a real underestimate of what the true cost of adequacy is. I don't know what it is but the -- you know, a better comparison actually would be the new study by Taylor et al. to what Duncombe and Yinger did back in the day. Right? And just that portion of the study. Because they did a full cost study but only pieces of that study were used in the full LPA calculations. Does that make sense?

SENATOR PETTEY: I'm not a mathematician.

DR. LEVIN: Namely, Duncombe and Yinger came up with these index indices for things like student needs and those were applied to a base funding figure that was more, that was more of a spending study, not a cost study. Okay. So anyway I think that the bottom line is my opinion is that the LPA numbers were underestimated, yet they move - I

don't want to say perfectly and parallel - but they move very closely with what the newest study came out with. So both studies are telling you the same qualitative story. I think that's how I termed it. Is that helpful?

SENATOR PETTEY: It is.

CHAIR PATTON: Representative Rooker.

REPRESENTATIVE ROOKER: Thank you, Mr. Chairman, and thank you, Mr. Levin. In the section of your report pertaining to the scatter plots, there's a statement I want to clarify that I'm understanding correctly. You say, first, the relationships between funding shortfall and student outcomes prove to be negative. Which means there is a connection that has been proven between student outcomes and the funding invested?

DR. LEVIN: I have shown a statistically significant relationship. It is a correlation. It is not causation. Okay. So there is a difference there. All right. I mean, causation implies that, you know, the shortfall in funding right directly drives achievement.

REPRESENTATIVE ROOKER: But is it

fair to interpret that if we want to change those outcomes and improve them, what both of these studies are telling us is that we need to invest more resources?

DR. LEVIN: Yes. Absolutely.

REPRESENTATIVE ROOKER: Thank you.

CHAIR PATTON: Representative Landwehr.

REPRESENTATIVE LANDWEHR: Thank you, Mr. Chairman. I think one of the things we've been trying to get our arms around is whether or not we actually have a clear understanding of what is meant by efficiency within her study.

DR. LEVIN: Okay. So, basically, I know it can seem rather abstract and hopefully this will help clear it up a little bit. I'm going to go with the picture is worth a thousand words here. I'm not sure what I just did here. So this picture right here, what this model does is, it assumes that there is a minimum cost at which districts of different sizes and of different characteristics can operate to produce a given level of student achievement. Right? That's what that line is

here. Okay. Now, the degree to which a school is spending more than that minimum cost frontier can be broken up into a random effect. Right? And an effect that's due to their own operations, their own choices. And what the efficiency, I think Dr. Taylor and colleagues come up with this distribution, they say on average there is 4 percent inefficiency. Or the way they put it, there is an average of 96 percent efficiency. Basically they are saying that schools could be operating a bit more efficiently. Four percent. It's trying to quantify the amount of inefficiency based on the data that's here. And the best way I can explain it here -- because I can explain it in mathematical terms but that is a statistical function and that's not going to help. But really how far off the line? So if you look at the picture again, we can break out how far off the minimum cost curve a school is and break that out into something that's random, completely outside of their control, and something that we call inefficiency that's inside their control. Now, there is a caveat here. Of course there has to be. Right? And

I want everybody to be aware, efficiency is only measured with respect to the outcomes you are controlling for. So you might have some inefficiency associated with a school where they are spending on something that you're not measuring in your model. So all we're measuring are test scores and graduation rates. But if the school might be, might have a great science program or a band program or something like that, that might be spending that is not going to be captured in -- that's not entered as variables in the model and, therefore, that spending could be interpreted by the model as inefficiency. They are choices that were made by the school or district to spend money on these things. It's not things that are invaluable or undesirable investments. It's just we are not controlling for those outcomes in the model. Is that helpful?

REPRESENTATIVE LANDWEHR: Somewhat.

DR. LEVIN: I tried.

CHAIR PATTON: Senator Bollier.

SENATOR BOLLIER: Thank you, Mr. Chairman. And again thank you for all this great analysis. As we were discussing inputs

and outputs, or results, I have heard many in the legislature thinking we can assume that if we spend this input, put in enough money, then now it is just totally up to the teachers. And if they don't get the results then somehow we have to hold them accountable that they haven't done their job right. And is that something we can assume from all of this study? Or are there many factors that they have no control over that affect output that we aren't necessarily able to identify as we work on our funding?

DR. LEVIN: I mean, it's very difficult to say that everything is under the control of school practitioners or district practitioners. Right? There is always going to be some things that are outside the control. Wholly -- I think your question may be getting to what can you hold them accountable for. And that's a very difficult question. And there -- in my view, this is all my opinion, what I have seen is, there is a big tradeoff between being too proscriptive and allowing for innovation, flexibility and local control. I think you do have to have local control but you also do have

to have some accountability system. Usually when we talk about accountability we talk about just for outcomes. Well, how do you get to outcomes? By wisely using resources. So I would argue there has to be some form of input accountability to check. So I've done work on districts that have put in place weighted student formulas. Right? That's where they provide money for funding to schools directly based on their student needs but then they also try to be involved in the planning of the schools and vetting the school plans, making sure the money is spent wisely. And it's a narrative process and if something in the plan doesn't work out, you have to change it. But the idea is to provide local control but with oversight and accountability as well, without constraining. Is that helpful?

SENATOR BOLLIER: Sort of. If I could use an analogy, in medicine - I'm familiar with that world - physicians, by insurance companies, are held accountable for doing the tests and making sure someone is getting their hemoglobin A1C checked and that they are prescribing X medicines and whatever.

But we still have people that aren't well. And so we hold them accountable by making sure they are following certain protocols or procedures or teaching but that doesn't ensure that the outcome, the result is going to be accomplished.

DR. LEVIN: Sure.

SENATOR BOLLIER: Would that be the same with schools essentially?

DR. LEVIN: It's an interesting analogy. And I never really thought of that in that way. But, yeah. I mean, to the extent that the tests are not necessary or, you know, it's more of doing a lot of tests to, to hedge against being sued for not quite doing something, then, you know, that could be inefficient, I guess. I mean, that's where I think you're going with this.

SENATOR BOLLIER: Right. If I may, so what I think what you're referring to earlier, about things like band and the like, fit into our Rose capacities more than our testing. And in order to meet our Rose capacities, we do need to spend that money.

DR. LEVIN: Yeah. Okay. Well, so

one of the limitations of the cost function approach is that you have to have quantifiable measures to include in a statistical function. In a professional judgment panel model, which is what the old study from 2002 done by Augenblick and Myers did, in that case you can actually include these less - I don't want to say tangible - less easily measurable outcomes in a goal statement. And then you have professional educators tell you what it's going to take to achieve these outcomes with different populations if they are operating at a minimum cost. So that's what professional judgment does. So that would be more well-suited unless you had some quantifiable measures of band performance across all schools. You have to have them across all schools. So that's just one of the limitations of the cost function.

SENATOR BOLLIER: Thank very much.

CHAIR PATTON: Senator Denning.

SENATOR DENNING: Thank you, Mr. Chairman. Did the Taylor study, when she used her assumption for I think it was 75, 90 percent proficiency in math and reading, did

she apply that assumption by every single district must hit that achievement level?

DR. LEVIN: I believe it was a universal assumption, that it was not on average across the state. It was every district. Yes.

REPRESENTATIVE DENNING: That was part of her financial adequacy recommendation, using that assumption.

DR. LEVIN: That was the threshold, the threshold they used. Yeah.

SENATOR DENNING: And what if she would have used the assumption on a statewide average? What effect would that have resulted in an adequacy number?

DR. LEVIN: I can't say. I mean, I'm not -- I didn't do the study so I can't say. I'm not even sure she could say because there are arguably an infinite number of possibilities combinations of districts that would -- I'm not a mathematician. It might not be infinite but there would be a lot of combinations of districts that would average to 75 percent or 95 percent. Right?

SENATOR DENNING: So if she would

have taken that approach, would this study have reported a material difference?

DR. LEVIN: I can't answer that. I just don't know. I'm sorry.

SENATOR DENNING: Thank you.

CHAIR PATTON: Representative Aurand.

REPRESENTATIVE AURAND: Thank you, Mr. Chairman. I guess one of the questions I have, I think in terms of some number of studies out there, and you talked about how the correlation on outcomes and spending, there is -- I think, some studies would show there is a threshold effect. Clearly when you have no education, you know, in poor countries you give them education, you ramp it up real quickly. But when you get to a certain level, it becomes very very difficult to move the bar. And where that threshold hits in and the line starts to go across, piling more -- you know, I guess everybody wants to use anecdotes. I farm. It's like fertilizer. The first hundred pounds, the second hundred pounds, after you get to 400 pounds, you're not doing anything. So I guess my question is, how does that tie in with the linear kind of model that it seems

that is in here to some degree? And how do you gauge that threshold effect? And I guess then you said a couple things on -- I don't know how you square them completely -- how, yes, indeed more money will move you down the road. You also said causation and correlation are not the same thing. So at what point do those two differ, I guess, and where in this study does that threshold effect is that looked at in the study and to what degree?

DR. LEVIN: So let me just break out what we all learned in econ 101 which is the law of diminishing returns, which is what you're talking about here. That is, you know, in order to, for instance, get that the 93rd percent of graduation, it's going to cost you more than the 53rd. Right? It's exactly like the farming yield that you're talking about. So, yes, that's apparent. I believe the memo that we got today, one of the questions from the committee, one of the committees, was at that very question: What would happen if you put a curve, a quadratic term or tried to put a nonlinear relationship in place in the model. And I haven't looked at it. I literally

glanced at it for like three minutes before walking over here from the hotel so I'm not sure what they found. But I believe it's in the memo today. In terms of the correlation versus causation, there are no guarantees that spending will directly result in an increase in achievement. Now, if money is spent wisely, then we're much closer to a guarantee. So I think this goes back to what Senator Bollier said and sort of brought up is that, you know, you have to have some sort of accountability in place and I would argue input accountability in place to ensure you get outcomes. Is that helpful?

REPRESENTATIVE AURAND: Yes. I guess a second question I have, I guess isn't talked about a lot, how is academic ability or to what extent is that baked in? We hear a lot of things in our education venues about the youth and the problems of the youth and how that environment, and not hearing enough words affects that child for a lifetime. And how do those abilities of what their potential is that maybe have been diminished through environmental reasons or some people would

argue genetic reasons, where does that play into the measurement of what we can expect versus district versus district? And also, in terms of what parental involvement and all the things that go into a child, how does the study play into some of those type of issues that haven't been talked about a lot?

DR. LEVIN: So the study doesn't directly talk to inherent ability of students. I mean, we usually don't have, unless it's a psychological study, we usually don't have those measurements on hand for all students. What it does do, is it controls for -- it tries to do the next best thing which is controlling in a sense for the historical achievement of students through what they call a conditional national curve equivalent. So that's in the report and basically it tries to estimate the natural progression or the typical progression of a student growth based on their last year's, how well they did last year. And in a sense you can think of it as an experimental study where the, the student who is being observed has a control who is him or herself a year ago. If that makes any sense. Right? So usually

randomized controls are at the same time and you have, you randomly allocate students that are in treatment versus control. Here the treated student is the student being observed this year, the control student is that same student the year before. So it does do that. Now, moving on very quickly to the socioeconomic status. That is controlled for in this model. And, in fact, there are cost indices that are based just on that for some of these things which are very very good indicators. I mean, socioeconomic status is really our best indicator of how well a student does academically. Of course, usually we're looking at free or reduced-priced lunch but some studies look at mother's and father's education. Mother's education is a great indicator of a student's academic ability.

CHAIR PATTON: Representative Rooker.

REPRESENTATIVE ROOKER: Thank you, Mr. Chair. You did just touch on one topic I wanted to explore and that's the difference between arbitrary benchmarks in student growth. All right. So that normative curve equivalent that she built in, you say is an accommodation,

an acknowledgment of typical student growth?

DR. LEVIN: It tries to. Yeah. I think as she puts it, it tries to figure out what the typical student growth is for different types of students based on their performance last year. So those students -- this also gets to Representative Aurand's -- did I get that right?

REPRESENTATIVE AURAND: Close enough.

DR. LEVIN: Okay. His mention back then is -- how shall I put this? You know what? I lost it. Never mind. I'm sorry.

MS. ROOKER: Well, he spoke to, there's certain inherent differences --

DR. LEVIN: I'll tell you why I put it in there. And one of the things -- oh, yes, of course. This is it. Your yield problem and the diminishing returns. It kind of gets to that because it acknowledges that some students might be lower on the curve than other students. So it's going to be easier for them to make up that real estate, if you will. You think that if you're starting at a lower level, your rate of progression might be higher given proper inputs than those that are close to a

ceiling, that ceiling or that top threshold.

REPRESENTATIVE ROOKER: So I guess to sum up your body of work for us as a state, you've looked at three different cost studies at different points in time along the way. When you look at the sum total of the work that's been done, is it reasonable for us as policy makers to think, to have the expectation that we can expect our students to perform better, that our teacher quality can improve without investing resources into the system to help make those outcomes a reality?

DR. LEVIN: I mean, I think systemically, I'm really not sure. I think in certain pockets you might be able to increase efficiency.

REPRESENTATIVE ROOKER: I'm asking about the relationship. I'm getting back to conclusions --

DR. LEVIN: Can I finish that?

REPRESENTATIVE ROOKER: Yeah.

DR. LEVIN: So I think all three studies are telling you, qualitatively, a similar story. As you read in my first report, I had some serious issues with, you know, with

a very old, you know, a very old professional judgment approach. I -- you've heard today that I've had some problems with the LPA study. I really think that's an underestimate. I really liked the Taylor et al. study and thought that that was really top quality. There were some things that were not documented that I would like to know more about. What I'd really like, this is my dream in this engagement here, is if I could go back in time and get the pure results from the Duncombe and Yinger cost study and compare those to the Taylor et al. study. And I would argue, I mean I would hypothesize that the results of those two are probably a lot closer together than -- I mean I know they would be. I think they would be closer together than the overall LPA study. So in terms of I think that spending -- if you want my opinion? If you want to meet the thresholds that are in place, you probably cannot do that without spending more.

REPRESENTATIVE ROOKER: Thank you.

DR. LEVIN: Was that your question?

REPRESENTATIVE ROOKER: That's my question. Thank you. Well, I guess even if we

adjusted thresholds to move the bar higher in terms of expectations for the achievement levels of our students will take some degree of new investment.

DR. LEVIN: That's my opinion.

REPRESENTATIVE ROOKER: Thank you.

CHAIR PATTON: Representative Lusk.

REPRESENTATIVE LUSK: Thank you, Mr. Chairman. My question is related to some of the things you said already but you made the comment that you thought Dr. Taylor's study was cutting edge. And I would like you to further elaborate on why you said that.

DR. LEVIN: Because it's a stochastic frontier cost function. She actually has measures of efficiency. And I think that could be delved into a greater extent. That's one thing. In other words, she can identify schools that are relatively more efficient. And there is a wealth of knowledge. There is something going on at those schools that we all deserve to understand. So ideally I would like to be able to meld different approaches so you can use this cost function approach to identify those most efficient pockets of schools or

districts. And then you could do deeper dives and do professional judgment in there and understand what are the resources and the combinations of resources they are using. So that's -- I see it as a stepping off point for more, for more research in this area.

REPRESENTATIVE LUSK: In a conversation I had with Dr. Taylor she talked about striving to be more and more nuanced. Is that kind of a way to summarize what you just said?

DR. LEVIN: Yeah. Yeah. I mean, it's allowing you to drill down. I'm not sure if you had a similar discussion to this or if it was just taken out of context. More nuanced could be a lot of things. But in this case this would be one way that it could be much more nuanced. So I can imagine finding a set of schools that are efficient and going in there and understanding -- oh. Senator Bollier left. And trying to figure out what they are doing and trying to give us some information as to what practices tend to be more effective. Is that helpful?

CHAIR PATTON: Representative

Landwehr.

REPRESENTATIVE LANDWEHR: Thank you, Mr. Chairman. And this may not be for you but I look at these numbers, the numbers you provided and what Dr. Taylor did. We are doing a lot with measuring the student. But I don't see how this tells us how to measure our teachers. And one of the things that she highlighted was that teachers are a crucial resource on page 35 in her document. So how do we measure our students or figure out how to measure our students out of this study as well as how do we know that money is being spent that improves the education of a child versus just the environment of the facility?

DR. LEVIN: So in terms of the teacher quality there are studies that talk about the relationship between teacher quality achievement. And I have not authored those nor reviewed those for this. Moving to sort of -- I think your question is how do we know the money is working, the money is doing what it's supposed to. Some of the evidence that we have are a couple of papers that have just come out that looked at decades worth of finance reform

across states and has come up with a very rigorous method to look, a quasi-experimental method to look at whether achievement can be related and we're talking about actually causally relating, not just a simple correlation, but causally related to student outcomes. And the paper is by Rucker Johnson and Persico. There are a couple papers. And then there is another paper by a Berkeley economist called Jesse Rothstein. (Reporter interruption). So the authors would be Rucker Johnson and then another one by Jesse Rothstein. And there is a Lafortune. Lafortune is another author of that paper. So these papers not only look at student outcomes but also look at what the effects on poverty are, how it will lift -- basically how much poverty it alleviates. Right? It lifts families out of poverty in the long run. And it looks at funding state school finance funding reforms over decades to do that. That's probably our best causal evidence of whether money matters. That's what everybody wants to know. Right? That's my best answer. I think you might have put your question in

terms of how do we in Kansas or how are we going to know if we spend this money. And it's difficult. You know. The scientific purist would say, well, you have to do a randomized control trial. Well, we are not going to randomly allocate dollars to students and toy with their lives and say, oh, well, Johnny didn't do so well because we didn't spend so much money on him and Julie did much better because we spent money. It's just not a reality that we can do. The best we can do is try to do these quasi-experimental studies that make use of observational data rather than randomly allocated data. It's a very difficult question. A very good question but a very difficult question. There is some good evidence out there, though, that spending more actually does work.

REPRESENTATIVE LANDWEHR: Because I think one of the things that has been questioned over the years is that, you know, the way we pay teachers in Kansas is number of years.

DR. LEVIN: Uh-huh.

REPRESENTATIVE LANDWEHR: Versus

whether or not they are able to achieve the outcomes that we are trying to measure.

DR. LEVIN: So there's huge literature out there on teacher value added, which I'm not an expert on. But there is a lot out there. And there's arguments on both ends saying that it's a very valuable measure of teacher, of teacher quality. But, you know, a lot of literature out there says it should not be used for high stakes, especially for hiring and firing decisions.

REPRESENTATIVE LANDWEHR: Right. Right.

DR. LEVIN: Or even, you know, there is also a lot of literature out there on pay for performance or merit pay. I'm not an expert in this field so I'm not going to tell you what's right or wrong. But there is quite a lot of literature out there on this and I'm not sure how you think it might play into your policy here. But I'm sure you and your colleagues are going to talk about that.

REPRESENTATIVE LANDWEHR: Well, I think, Mr. Chairman, some of the discussion

that we've had over the last couple weeks is, you know, with all the different weightings that we try to target to handle different things, how do we measure, how do we know that the money is actually going to those purposes and what it's doing or whether or not we need more, you know, in certain areas. And then, of course, I've still been bothered by all the testimony we have had here the last couple weeks that you can't get a good education in an old building. So that's just a comment.

CHAIR PATTON: And with our final question because we are about out of time, Representative Aurand.

REPRESENTATIVE AURAND: All right. Thank you. You talked about studies that you can't do, random studies to test theories. Because I'm just sitting here thinking, looking at the dots in the charts and I'm thinking, what if we took different school districts similarly situated and we couldn't do the bigger ones because of the costs and just say, okay, we are going to randomly assign A, B to both of these, clear to the point of the high level of spending? What is your level of

confidence that those districts would reach the stated outcomes purported to be achievable because of the money in her study? Is that level of confidence as much as mine would be that I'm willing to put side bets on? And would that be a good thing to do? Has any state done something similar to that to randomize school districts to see what actually would happen?

DR. LEVIN: None that I know of and I wouldn't advise it. And I also wouldn't have a lot of confidence. Remember, if you do something like that, we can pretend that we're in a laboratory but we're not in a laboratory. A district is not a laboratory. So you would have to really try to control for any what we would call internal threats to validity which make sure that -- the only difference between the control and the treatment groups is the treatment itself. And I would argue, I will say it is impossible to do that in such a setting.

REPRESENTATIVE AURAND: Which then gets very hard to -- how you ever decide that this study is indeed correct in some way. And

we look at dollar amounts and what we are trying to achieve in moving forward. We have a long-term history with, ACT is probably the perfect example. We look and track our scores. And the study didn't use ACT because they didn't think it fit. But the cohort that takes the ACT doesn't change that much over time and kids across the state know they need to do that and want to get better. And it's really hard to move that plateau. So it seems to me this also would be hard to move. Clearly, more money, you can do more things and get more places. But I'm really struggling to see how you can put a test case. And I just didn't know if there's any place that had done any sort of testing. Because the numbers look good, my gut tells me it would difficult to move the needle as much as the assumptions allow it to move under the study. And I guess that's your response to that.

DR. LEVIN: I couldn't tell you one way or the other, to tell you the truth. I mean, the correlations look good. The results of Taylor et al.'s regression, everything is, most everything is statistically significant.

That is, the effects that she's giving are different from zero. And, moreover, they are in the direction that you would expect. Right. We always -- and there is nothing that is of a crazy magnitude. So we always look at these three things: Precision, is it significant; what direction are the effects, are they what you would hypothesize; and what are the magnitudes of the effects. So it all looks very tight to me. But I can't, I can't bet money on -- you know. Nobody can be perfectly certain.

REPRESENTATIVE AURAND: I understand. Thank you, Mr. Chairman. Thank you.

CHAIR PATTON: Thank you for being here today and thank you for your report, answering our questions, even some of us who have not had econ 101 in many years and maybe didn't pay as much attention as we now wish we did. But thank you for being here.

DR. LEVIN: Thank you very much.

CHAIR PATTON: It was referenced a couple times. I just want to make sure you know that there was a supplemental piece of information from West Ed at your places. So

take that and make sure you read through that. With that, we are adjourned.

C E R T I F I C A T E

STATE OF KANSAS)
)
COUNTY OF SHAWNEE)

I, Denise M. Haas, a Certified Shorthand Reporter of the State of Kansas, do hereby certify that I was present at and reported in machine shorthand the proceedings had on the 29th of March, 2018, at the Kansas Statehouse, Old Supreme Courtroom, Southwest Eighth and Van Buren Streets, City of Topeka, County of Shawnee, State of Kansas.

I further certify that the foregoing transcript is a true, correct and complete transcript of all the testimony and proceedings aforesaid.

IN TESTIMONY WHEREOF, I have hereunto set my hand at my office in Topeka, Kansas, this day of , 2018.

Denise M. Haas,
Certified Shorthand Reporter

Kansas state department of Education

Division of Fiscal and Administrative Services

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March 29, 2018

FROM: Dale M. Dennis, Deputy
Commissioner of Education

Craig Neuenswander, Director, School Finance

SUBJECT: House Bill 2445 as Approved by the K-12 Education Budget Committee--UPDATED

Attached is an **updated** computer printout (SF18-078) which provides the estimated effects of 2018 House Bill 2445 as approved by the K-12 Education Budget Committee. We have also provided a summary of the major provisions of this bill.

This computer printout does not reflect changes in supplemental general state aid (local option budget).

COLUMN EXPLANATION

Column 1 -- Estimated adjusted enrollment

2 -- 2018-19 Estimated weighted enrollment excluding special education
The new facilities weighting is based on the same weighting for 2018-19 as 2017-18.

3 -- 2018-19 Estimated virtual state aid

4 -- 2018-19 Estimated computed general fund budget with BASE of $4,006

5 -- 2018-19 Estimated computed general fund budget with BASE of $4,170

6 -- 2018-19 Estimated general fund difference (Column 5 – 4)

7 -- 2018-19 Estimated special education state aid increase

8 -- 2018-19 Estimated general fund increase including special education

PROPOSED SCHOOL FINANCE PLAN AS APPROVED BY
K-12 EDUCATION BUDGET COMMITTEE
MAJOR POLICY PROVISIONS
Computer Printout SF18-078 -- UPDATED

- Base aid for student excellence (BASE) will increase from $4,006 to $4,170 in 2018-19. Current law provides a BASE of $4,128 for 2018-19. Beginning in 2019-20, the BASE will increase to $4,307.

- Career and technical education (CTE) weighting will be based upon current year in 2017-18 and thereafter.

- CTE weighting was scheduled to sunset July 1, 2019. The CTE study has been completed. This bill would delete the sunset.

- Bilingual education weighting will be based upon current year in 2017-18 and thereafter.

- School-based high-density at-risk pilot program is extended to July 1, 2020.

- The ten percent floor for computing free lunch for any school district offering grades K-12 is repealed.

- The special education funding will increase by $44.4 million in 2018-19 plus $7.5 million each year thereafter until 2022-23.

- Transportation formula for students transported over 2.5 miles has been clarified in statute and remains approximately the same dollar amount as computed in the prior year with a minor adjustment to cost allocation.

- Expands early childhood funding by increasing state aid for three- and four-year-old at-risk by $2,000,000.

- To increase the local option budget (LOB) above 30 percent, school districts must publish a resolution and give the patrons the right to petition and vote. The percentage for the protest petition was made consistent with capital outlay which is ten percent. Patrons have 40 days to gather signatures. Those districts that were previously approved for 33 percent will retain authority.

- LOB state aid is computed using the current year's budget as recommended by the Supreme Court.

- School districts must notify the State Board of Education by April 1 of each year if they want to increase their LOB percentage.

- Repeals authority for school districts to make expenditures for utilities and property/casualty insurance from capital outlay fund as recommended by the Supreme Court.

- Repeals the bond cap provided in 2017 Senate Bill 19. The remaining cap will be based on the six-year rolling average for state aid.

- Out-of-state students may be counted by Kansas school districts if the school the student would attend in their state of residence is more than eight miles from the state line and the Kansas school district is eight miles or less from the state line. The out-of-state district must be adjacent to the Kansas district.

- Clarifies accountability requirements.

- Amends the law to require that the proportionate share at-risk makes up of the general fund weighting shall be applied to the LOB and transferred to the at-risk fund.

- Amends the law to require that the proportionate share bilingual makes up of the general fund weighting shall be applied to the LOB and transferred to the bilingual fund.

- Provides a pilot program for improvement of mental health services for a few selected school districts.

ESTIMATED STATE AID INCREASES FOR PROPOSED SCHOOL FINANCE PLAN – SF18-078-UPDATED

Program	2018-19	2019-20	2020-21	2021-22	2022-23
BASE	$ 4,170	$ 4,307	$ 4,444	$ 4,581	$ 4,718
General State Aid	109,760,111	95,000,000	95,000,000	95,000,000	95,000,000
Special Education State Aid	44,400,000	7,500,000	7,500,000	7,500,000	7,500,000
Four-Year-Old At-Risk	2,000,000	2,000,000	2,000,000	2,000,000	0
Supplemental General State Aid	35,000,000	1,000,000	1,000,000	8,600,000	13,000,000
Mental Health Pilot Program*	7,500,000	0	0	0	0
Adjustments**	(9,231,963)				
TOTAL	189,428,148	105,500,000	105,500,000	113,100,000	115,500,000

*The Committee also approved $2.5 million to establish a data system for the mental health pilot program.

**Adjustments—Out-of-state students and reduction in new facilities weighting.

3/30/2018	UPDATED		Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
			2016-17 or			2017-18 Est.	2018-19 Est.	Est. Gen Fund		Est. Gen Fund
			2017-18	2018-19 Est.	2017-18 Est.	Computed Gen Fund	Computed Gen Fund	(excl Sped)	2018-19 Est.	(incl Sped)
			Est. Adj. Enrollment	Total WTD FTE	Virtual	(Excl Sped & Extra Need)	(Excl Sped & Extra Need)	Difference	Special Ed Aid	Difference
USD #	County	District Name	(incl 4yr AR & KAMS)	(Excl Sped)	State Aid	$4,006	$4,170	(Col 5 - Col 4)	Increase	(Col 6 + Col 7)
Total		STATE TOTALS	473,906.9	694,853.6	31,347,660	2,819,127,061	2,928,887,172	109,760,111	44,400,245	154,160,356
256	Allen	Marmaton Valley	282.8	541.9	0	2,175,585	2,259,723	84,138	37,638	121,776
257	Allen	Iola	1,239.0	1,865.0	184,810	7,740,896	7,961,860	220,964	153,753	374,717
258	Allen	Humboldt	592.0	967.0	879,950	4,833,487	4,912,340	78,853	70,926	149,779
365	Anderson	Garnett	1,003.5	1,537.2	0	6,199,074	6,410,124	211,050	87,480	298,530
479	Anderson	Crest	219.5	445.6	0	1,780,283	1,858,152	77,869	25,556	103,425
377	Atchison	Atchison Co Comm Schools	514.0	903.6	0	3,908,514	3,768,012	-140,502	85,037	-55,465
409	Atchison	Atchison Public Schools	1,702.0	2,384.6	10,000	9,568,931	9,953,782	384,851	195,152	580,003
254	Barber	Barber County North	473.0	804.8	0	3,229,792	3,356,016	126,224	59,062	185,286
255	Barber	South Barber	249.5	486.4	0	1,949,384	2,028,288	78,904	30,033	108,937
355	Barton	Ellinwood Public Schools	450.6	762.3	0	3,041,603	3,178,791	137,188	49,507	186,695
428	Barton	Great Bend	2,878.9	4,185.6	0	17,390,366	17,453,952	63,586	230,958	294,544
431	Barton	Hoisington	736.6	1,281.9	0	5,123,843	5,345,523	221,680	72,545	294,225
234	Bourbon	Fort Scott	1,858.5	2,625.2	25,000	10,508,286	10,972,084	463,798	127,681	591,479
235	Bourbon	Uniontown	437.0	807.4	0	3,308,179	3,366,858	58,679	40,142	98,821
415	Brown	Hiawatha	915.6	1,463.2	15,000	5,957,525	6,116,544	159,019	102,681	261,700
430	Brown	South Brown County	570.0	1,054.1	0	4,269,443	4,395,597	126,154	72,274	198,428
205	Butler	Bluestem	485.0	893.6	0	3,602,663	3,726,312	123,649	51,771	175,420
206	Butler	Remington-Whitewater	511.8	883.3	0	3,546,281	3,683,361	137,080	53,848	190,928
375	Butler	Circle	1,914.7	2,362.4	86,212	9,463,365	9,937,420	474,055	141,575	615,630
385	Butler	Andover	5,260.8	6,108.9	2,952,356	27,011,013	28,426,469	1,415,456	451,601	1,867,057
394	Butler	Rose Hill Public Schools	1,549.5	1,936.6	107,127	7,874,563	8,182,749	308,186	131,129	439,315
396	Butler	Douglass Public Schools	679.8	1,085.1	14,926	4,437,727	4,539,793	102,066	68,970	171,036
402	Butler	Augusta	2,172.6	2,717.0	14,180	10,911,000	11,344,070	433,070	162,273	595,343
490	Butler	El Dorado	1,903.8	2,616.9	45,830	10,547,509	10,958,303	410,794	145,330	556,124
492	Butler	Flinthills	269.7	516.9	0	2,077,966	2,155,473	77,507	30,218	107,725
284	Chase	Chase County	346.0	615.3	1,360	2,506,254	2,567,161	60,907	36,226	97,133
285	Chautauqua	Cedar Vale	182.5	386.1	0	1,548,857	1,610,037	61,180	17,654	78,834
286	Chautauqua	Chautauqua Co Community	364.2	695.1	680	2,862,944	2,899,247	36,303	39,358	75,661
404	Cherokee	Riverton	736.5	1,250.8	7,090	5,003,040	5,222,926	219,886	71,793	291,679
493	Cherokee	Columbus	962.0	1,571.6	0	6,309,698	6,553,572	243,874	103,493	347,367
499	Cherokee	Galena	835.0	1,368.0	18,545	5,411,601	5,723,105	311,504	78,284	389,788
508	Cherokee	Baxter Springs	973.0	1,561.2	130,000	6,517,356	6,640,204	122,848	97,829	220,677
103	Cheyenne	Cheylin	128.5	327.1	0	1,365,901	1,364,007	-1,894	12,776	10,882
297	Cheyenne	St Francis Comm Sch	281.5	511.4	0	2,041,621	2,132,538	90,917	20,421	111,338
219	Clark	Minneola	243.5	458.7	0	1,837,539	1,912,779	75,240	19,298	94,538
220	Clark	Ashland	210.5	439.0	0	1,734,348	1,830,630	96,282	16,517	112,799
379	Clay	Clay Center	1,329.2	1,847.1	30,635	7,512,443	7,733,042	220,599	123,404	344,003
333	Cloud	Concordia	1,088.7	1,625.8	0	6,483,951	6,779,586	295,635	91,283	386,918
334	Cloud	Southern Cloud	178.0	383.2	10,000	1,594,765	1,607,944	13,179	28,194	41,373
243	Coffey	Lebo-Waverly	423.0	729.9	0	2,989,437	3,043,683	54,246	47,563	101,809
244	Coffey	Burlington	856.0	1,329.2	0	5,297,189	5,542,764	245,575	125,116	370,691

App. #001133

3/30/2018	UPDATED		Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
			2016-17 or			2017-18 Est.	2018-19 Est.	Est. Gen Fund		Est. Gen Fund
			2017-18	2018-19 Est.	2017-18 Est.	Computed Gen Fund	Computed Gen Fund	(excl Sped)	2018-19 Est.	(incl Sped)
			Est. Adj. Enrollment	Total WTD FTE	Virtual	(Excl Sped & Extra Need)	(Excl Sped & Extra Need)	Difference	Special Ed Aid	Difference
USD #	County	District Name	(incl 4yr AR & KAMS)	(Excl Sped)	State Aid	$4,006	$4,170	(Col 5 - Col 4)	Increase	(Col 6 + Col 7)
Total		STATE TOTALS	473,906.9	694,853.6	31,347,660	2,819,127,061	2,928,887,172	109,760,111	44,400,245	154,160,356
245	Coffey	LeRoy-Gridley	200.5	419.0	0	1,755,032	1,747,230	-7,802	24,106	16,304
300	Comanche	Comanche County	319.0	597.7	0	2,463,675	2,492,409	28,734	45,146	73,880
462	Cowley	Central	311.7	594.7	0	2,382,740	2,479,899	97,159	29,489	126,648
463	Cowley	Udall	316.0	563.8	0	2,392,366	2,351,046	-41,320	32,992	-8,328
465	Cowley	Winfield	2,175.6	2,968.4	0	12,089,924	12,378,228	288,304	235,715	524,019
470	Cowley	Arkansas City	2,819.8	4,227.6	0	17,041,682	17,629,092	587,410	271,631	859,041
471	Cowley	Dexter	166.0	355.4	0	1,291,613	1,482,018	190,405	14,855	205,260
246	Crawford	Northeast	470.0	865.3	45,635	3,520,553	3,653,936	133,383	51,347	184,730
247	Crawford	Cherokee	491.0	963.8	10,000	4,039,546	4,029,046	-10,500	63,131	52,631
248	Crawford	Girard	1,014.0	1,601.0	10,000	6,451,518	6,686,170	234,652	97,423	332,075
249	Crawford	Frontenac Public Schools	962.5	1,401.2	7,778	5,511,910	5,850,782	338,872	86,463	425,335
250	Crawford	Pittsburg	3,004.3	4,264.5	276,105	17,373,674	18,059,070	685,396	275,117	960,513
294	Decatur	Oberlin	342.0	603.2	0	2,382,078	2,515,344	133,266	31,749	165,015
393	Dickinson	Solomon	314.0	557.5	0	2,253,770	2,324,775	71,005	32,972	103,977
435	Dickinson	Abilene	1,542.2	2,065.7	54,164	8,422,058	8,668,133	246,075	141,151	387,226
473	Dickinson	Chapman	1,085.0	1,634.3	0	6,563,153	6,815,031	251,878	101,106	352,984
481	Dickinson	Rural Vista	289.5	543.3	0	2,238,580	2,265,561	26,981	26,808	53,789
487	Dickinson	Herington	468.5	856.3	38,089	3,379,630	3,608,860	229,230	42,760	271,990
111	Doniphan	Doniphan West Schools	329.5	592.6	0	2,464,731	2,471,142	6,411	27,715	34,126
114	Doniphan	Riverside	596.0	1,054.0	35,000	4,311,403	4,430,180	118,777	61,835	180,612
429	Doniphan	Troy Public Schools	334.5	563.8	0	2,252,218	2,351,046	98,828	26,970	125,798
348	Douglas	Baldwin City	1,391.7	1,832.7	16,120	7,351,734	7,658,479	306,745	138,315	445,060
491	Douglas	Eudora	1,705.9	2,061.2	90,635	8,281,309	8,685,839	404,530	169,463	573,993
497	Douglas	Lawrence	10,739.3	13,969.8	5,391,082	61,407,779	63,645,148	2,237,369	1,267,536	3,504,905
347	Edwards	Kinsley-Offerle	334.5	643.9	0	2,615,694	2,685,063	69,369	36,752	106,121
502	Edwards	Lewis	125.5	297.9	0	1,134,152	1,242,243	108,091	13,421	121,512
282	Elk	West Elk	355.5	686.2	0	2,684,682	2,861,454	176,772	58,375	235,147
283	Elk	Elk Valley	110.0	283.0	2,127	1,169,871	1,182,237	12,366	23,955	36,321
388	Ellis	Ellis	431.1	705.0	0	2,861,857	2,939,850	77,993	34,436	112,429
432	Ellis	Victoria	287.0	491.4	0	1,987,571	2,049,138	61,567	22,628	84,195
489	Ellis	Hays	3,003.2	3,801.3	215,000	15,643,386	16,066,421	423,035	242,553	665,588
112	Ellsworth	Central Plains	486.4	869.2	142,535	3,640,970	3,767,099	126,129	39,166	165,295
327	Ellsworth	Ellsworth	645.0	1,047.7	0	4,173,784	4,368,909	195,125	55,646	250,771
363	Finney	Holcomb	983.0	1,530.5	0	6,197,468	6,382,185	184,717	53,602	238,319
457	Finney	Garden City	7,430.6	11,334.4	292,445	46,302,247	47,556,893	1,254,646	498,652	1,753,298
381	Ford	Spearville	354.0	584.9	0	2,346,852	2,439,033	92,181	27,340	119,521
443	Ford	Dodge City	6,836.3	11,317.1	38,360	45,869,845	47,230,667	1,360,822	531,197	1,892,019
459	Ford	Bucklin	229.9	463.9	15,000	1,859,612	1,949,463	89,851	16,925	106,776
287	Franklin	West Franklin	605.0	1,081.0	0	4,300,475	4,507,770	207,295	78,860	286,155
288	Franklin	Central Heights	545.1	1,037.1	20,000	4,258,494	4,344,707	86,213	37,370	123,583
289	Franklin	Wellsville	776.0	1,189.4	0	4,777,510	4,959,798	182,288	76,757	259,045

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3/30/2018	UPDATED		Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
			2016-17 or			2017-18 Est.	2018-19 Est.	Est. Gen Fund		Est. Gen Fund
			2017-18	2018-19 Est.	2017-18 Est.	Computed Gen Fund	Computed Gen Fund	(excl Sped)	2018-19 Est.	(incl Sped)
			Est. Adj. Enrollment	Total WTD FTE	Virtual	(Excl Sped & Extra Need)	(Excl Sped & Extra Need)	Difference	Special Ed Aid	Difference
USD #	County	District Name	(incl 4yr AR & KAMS)	(Excl Sped)	State Aid	$4,006	$4,170	(Col 5 - Col 4)	Increase	(Col 6 + Col 7)
Total		STATE TOTALS	473,906.9	694,853.6	31,347,660	2,819,127,061	2,928,887,172	109,760,111	44,400,245	154,160,356
290	Franklin	Ottawa	2,411.4	3,315.7	35,850	13,351,524	13,862,319	510,795	239,896	750,691
475	Geary	Geary County Schools	7,929.2	10,342.5	112,090	43,380,909	43,240,315	-140,594	784,496	643,902
291	Gove	Grinnell Public Schools	79.5	182.4	0	816,126	760,608	-55,518	9,961	-45,557
292	Gove	Wheatland	112.0	267.6	0	1,077,858	1,115,892	38,034	14,528	52,562
293	Gove	Quinter Public Schools	298.5	504.4	0	2,022,734	2,103,348	80,614	35,662	116,276
281	Graham	Graham County	378.5	672.3	0	2,626,865	2,803,491	176,626	31,138	207,764
214	Grant	Ulysses	1,651.5	2,428.5	86,915	10,056,767	10,213,760	156,993	90,389	247,382
102	Gray	Cimmaron-Ensign	647.0	1,085.7	0	4,340,496	4,527,369	186,873	49,321	236,194
371	Gray	Montezuma	199.0	431.3	61,270	1,814,764	1,859,791	45,027	13,691	58,718
476	Gray	Copeland	95.0	241.0	20,000	1,008,830	1,024,970	16,140	7,775	23,915
477	Gray	Ingalls	238.5	453.6	0	1,833,045	1,891,512	58,467	17,400	75,867
200	Greeley	Greeley County Schools	257.5	513.0	0	2,041,203	2,139,210	98,007	14,945	112,952
386	Greenwood	Madison-Virgil	223.5	446.4	0	1,819,737	1,861,488	41,751	37,719	79,470
389	Greenwood	Eureka	651.5	1,188.4	0	4,725,207	4,955,628	230,421	58,102	288,523
390	Greenwood	Hamilton	60.5	153.6	0	745,760	640,512	-105,248	13,616	-91,632
494	Hamilton	Syracuse	559.0	1,070.2	0	4,100,921	4,462,734	361,813	28,786	390,599
361	Harper	Anthony-Harper	811.1	1,436.5	53,286	5,874,505	6,043,491	168,986	117,966	286,952
511	Harper	Attica	176.5	359.6	0	1,398,617	1,499,532	100,915	20,682	121,597
369	Harvey	Burrton	240.0	471.8	0	1,926,959	1,967,406	40,447	24,045	64,492
373	Harvey	Newton	3,359.2	4,441.7	22,414	18,069,654	18,544,303	474,649	291,713	766,362
439	Harvey	Sedgwick Public Schools	477.0	770.9	0	3,089,896	3,214,653	124,757	45,556	170,313
440	Harvey	Halstead	765.5	1,244.1	0	4,967,943	5,187,897	219,954	64,636	284,590
460	Harvey	Hesston	808.1	1,173.4	0	4,666,003	4,893,078	227,075	63,464	290,539
374	Haskell	Sublette	445.2	856.4	13,400	3,503,101	3,584,588	81,487	25,326	106,813
507	Haskell	Satanta	300.0	611.4	0	2,475,062	2,549,538	74,476	18,004	92,480
227	Hodgeman	Hodgeman County Schools	297.0	526.6	0	2,132,936	2,195,922	62,986	21,671	84,657
335	Jackson	North Jackson	381.5	693.6	0	2,738,745	2,892,312	153,567	31,312	184,879
336	Jackson	Holton	1,090.0	1,744.8	171,800	7,093,926	7,447,616	353,690	91,538	445,228
337	Jackson	Royal Valley	831.6	1,376.8	0	5,639,248	5,741,256	102,008	87,929	189,937
338	Jefferson	Valley Falls	375.5	632.0	0	2,587,183	2,635,440	48,257	56,837	105,094
339	Jefferson	Jefferson County North	456.5	765.1	0	3,072,991	3,190,467	117,476	67,705	185,181
340	Jefferson	Jefferson West	856.0	1,298.3	0	5,282,013	5,413,911	131,898	114,520	246,418
341	Jefferson	Oskaloosa Public Schools	593.5	1,027.5	0	4,128,616	4,284,675	156,059	98,167	254,226
342	Jefferson	McLouth	475.6	800.8	0	3,155,852	3,339,336	183,484	77,127	260,611
343	Jefferson	Perry Public Schools	735.5	1,210.8	0	4,876,719	5,049,036	172,317	107,817	280,134
107	Jewell	Rock Hills	307.0	596.1	0	2,340,454	2,485,737	145,283	34,363	179,646
229	Johnson	Blue Valley	22,328.2	29,163.2	38,250	118,880,664	121,648,794	2,768,130	2,212,699	4,980,829
230	Johnson	Spring Hill	2,893.9	4,000.6	4,653,210	20,097,796	21,335,712	1,237,916	273,080	1,510,996
231	Johnson	Gardner Edgerton	5,903.5	7,440.0	0	29,420,370	31,024,800	1,604,430	614,084	2,218,514
232	Johnson	De Soto	7,263.5	8,799.8	5,850	35,307,318	36,701,016	1,393,698	490,980	1,884,678
233	Johnson	Olathe	29,117.5	40,778.5	0	162,117,213	170,046,345	7,929,132	2,775,415	10,704,547

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3/30/2018	UPDATED		Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
			2016-17 or			2017-18 Est.	2018-19 Est.	Est. Gen Fund		Est. Gen Fund
			2017-18	2018-19 Est.	2017-18 Est.	Computed Gen Fund	Computed Gen Fund	(excl Sped)	2018-19 Est.	(incl Sped)
			Est. Adj. Enrollment	Total WTD FTE	Virtual	(Excl Sped & Extra Need)	(Excl Sped & Extra Need)	Difference	Special Ed Aid	Difference
USD #	County	District Name	(incl 4yr AR & KAMS)	(Excl Sped)	State Aid	$4,006	$4,170	(Col 5 - Col 4)	Increase	(Col 6 + Col 7)
Total		STATE TOTALS	473,906.9	694,853.6	31,347,660	2,819,127,061	2,928,887,172	109,760,111	44,400,245	154,160,356
512	Johnson	Shawnee Mission Pub Sch	27,071.3	35,598.4	0	145,879,501	148,445,328	2,565,827	1,904,459	4,470,286
215	Kearny	Lakin	645.5	1,105.9	74,445	4,441,782	4,686,048	244,266	33,450	277,716
216	Kearny	Deerfield	204.0	466.8	0	1,877,735	1,946,556	68,821	12,643	81,464
331	Kingman	Kingman - Norwich	918.2	1,486.3	116,085	6,038,149	6,313,956	275,807	126,523	402,330
332	Kingman	Cunningham	158.5	344.9	0	1,365,143	1,438,233	73,090	26,518	99,608
422	Kiowa	Kiowa County	246.0	469.0	525,610	2,441,635	2,481,340	39,705	32,527	72,232
474	Kiowa	Haviland	106.5	247.9	0	975,297	1,033,743	58,446	13,524	71,970
503	Labette	Parsons	1,282.9	1,993.2	5,000	7,997,310	8,316,644	319,334	118,832	438,166
504	Labette	Oswego	479.0	839.7	0	3,221,842	3,501,549	279,707	44,943	324,650
505	Labette	Chetopa-St. Paul	420.5	742.7	7,090	3,081,077	3,104,149	23,072	45,589	68,661
506	Labette	Labette County	1,564.1	2,285.5	0	9,134,236	9,530,535	396,299	156,294	552,593
468	Lane	Healy Public Schools	67.0	154.9	0	691,023	645,933	-45,090	11,130	-33,960
482	Lane	Dighton	238.5	461.8	0	1,802,608	1,925,706	123,098	18,372	141,470
207	Leavenworth	Ft Leavenworth	1,857.0	2,133.5	0	8,128,136	8,896,695	768,559	146,806	915,365
449	Leavenworth	Easton	624.3	1,005.4	0	3,952,506	4,192,518	240,012	90,094	330,106
453	Leavenworth	Leavenworth	3,721.3	5,071.0	350,000	20,699,368	21,496,070	796,702	343,538	1,140,240
458	Leavenworth	Basehor-Linwood	2,422.5	2,940.6	808,330	12,252,663	13,070,632	817,969	195,404	1,013,373
464	Leavenworth	Tonganoxie	1,969.7	2,437.9	0	9,693,506	10,166,043	472,537	168,542	641,079
469	Leavenworth	Lansing	2,663.0	3,162.9	0	12,542,776	13,189,293	646,517	294,264	940,781
298	Lincoln	Lincoln	345.5	634.3	0	2,596,327	2,645,031	48,704	42,841	91,545
299	Lincoln	Sylvan Grove	243.8	505.6	0	2,029,459	2,108,352	78,893	24,431	103,324
344	Linn	Pleasanton	362.5	632.4	0	2,393,667	2,637,108	243,441	25,289	268,730
346	Linn	Jayhawk	580.0	1,064.4	10,709	4,179,247	4,449,257	270,010	61,452	331,462
362	Linn	Prairie View	907.4	1,498.1	0	6,007,153	6,247,077	239,924	133,558	373,482
274	Logan	Oakley	402.1	691.2	7,127	2,776,401	2,889,431	113,030	43,198	156,228
275	Logan	Triplains	64.5	154.3	0	673,196	643,431	-29,765	13,016	-16,749
251	Lyon	North Lyon County	391.0	734.6	0	3,092,730	3,063,282	-29,448	44,208	14,760
252	Lyon	Southern Lyon County	487.0	854.5	0	3,567,953	3,563,265	-4,688	53,317	48,629
253	Lyon	Emporia	4,510.4	6,564.2	10,000	26,215,202	27,382,714	1,167,512	340,528	1,508,040
397	Marion	Centre	201.5	448.7	699,570	2,554,780	2,570,649	15,869	41,709	57,578
398	Marion	Peabody-Burns	248.0	492.3	21,418	2,001,833	2,074,309	72,476	38,294	110,770
408	Marion	Marion-Florence	504.5	847.1	42,244	3,541,761	3,574,651	32,890	74,501	107,391
410	Marion	Durham-Hillsboro-Lehigh	571.0	938.0	27,637	3,809,185	3,939,097	129,912	78,809	208,721
411	Marion	Goessel	290.1	508.8	0	2,027,704	2,121,696	93,992	40,033	134,025
364	Marshall	Marysville	740.9	1,198.4	0	4,676,443	4,997,328	320,885	68,494	389,379
380	Marshall	Vermillion	565.5	932.6	0	3,688,367	3,888,942	200,575	28,481	229,056
498	Marshall	Valley Heights	401.0	720.5	0	2,880,125	3,004,485	124,360	37,215	161,575
400	McPherson	Smoky Valley	869.3	1,323.4	596,225	5,902,649	6,114,803	212,154	109,424	321,578
418	McPherson	McPherson	2,383.0	2,935.3	40,450	11,726,590	12,280,651	554,061	280,427	834,488
419	McPherson	Canton-Galva	342.2	609.5	0	2,599,783	2,541,615	-58,168	43,101	-15,067
423	McPherson	Moundridge	402.0	656.9	0	2,586,741	2,739,273	152,532	53,906	206,438

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3/30/2018	UPDATED		Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
			2016-17 or			2017-18 Est.	2018-19 Est.	Est. Gen Fund		Est. Gen Fund
			2017-18	2018-19 Est.	2017-18 Est.	Computed Gen Fund	Computed Gen Fund	(excl Sped)	2018-19 Est.	(incl Sped)
			Est. Adj. Enrollment	Total WTD FTE	Virtual	(Excl Sped & Extra Need)	(Excl Sped & Extra Need)	Difference	Special Ed Aid	Difference
USD #	County	District Name	(incl 4yr AR & KAMS)	(Excl Sped)	State Aid	$4,006	$4,170	(Col 5 - Col 4)	Increase	(Col 6 + Col 7)
Total		STATE TOTALS	473,906.9	694,853.6	31,347,660	2,819,127,061	2,928,887,172	109,760,111	44,400,245	154,160,356
448	McPherson	Inman	422.5	703.2	0	2,832,186	2,932,344	100,158	50,468	150,626
225	Meade	Fowler	143.0	318.8	0	1,260,570	1,329,396	68,826	11,566	80,392
226	Meade	Meade	417.1	712.5	0	2,760,784	2,971,125	210,341	30,953	241,294
367	Miami	Osawatomie	1,128.5	1,791.8	0	7,250,054	7,471,806	221,752	205,999	427,751
368	Miami	Paola	2,034.5	2,638.3	30,000	10,531,781	11,031,711	499,930	189,590	689,520
416	Miami	Louisburg	1,694.9	2,064.8	85,386	8,320,906	8,695,602	374,696	124,304	499,000
272	Mitchell	Waconda	309.0	549.7	0	2,217,716	2,292,249	74,533	36,970	111,503
273	Mitchell	Beloit	780.2	1,213.4	0	4,968,115	5,059,878	91,763	102,074	193,837
436	Montgomery	Caney Valley	768.0	1,259.5	40,000	5,023,987	5,292,115	268,128	47,539	315,667
445	Montgomery	Coffeyville	1,743.9	2,677.4	132,850	10,843,307	11,297,608	454,301	135,404	589,705
446	Montgomery	Independence	2,006.3	2,858.7	0	11,395,943	11,920,779	524,836	147,575	672,411
447	Montgomery	Cherryvale	815.4	1,378.5	0	5,527,417	5,748,345	220,928	55,592	276,520
417	Morris	Morris County	754.5	1,226.3	5,000	4,922,302	5,118,671	196,369	68,130	264,499
217	Morton	Rolla	132.5	300.6	0	1,392,421	1,253,502	-138,919	10,883	-128,036
218	Morton	Elkhart	462.4	810.5	3,813,832	7,159,799	7,193,617	33,818	29,390	63,208
113	Nemaha	Prairie Hills	1,100.8	1,630.6	0	6,728,399	6,799,602	71,203	89,141	160,344
115	Nemaha	Nemaha Central	569.7	942.1	0	3,793,499	3,928,557	135,058	40,189	175,247
101	Neosho	Erie-Galesburg	522.0	983.2	0	3,943,902	4,099,944	156,042	61,564	217,606
413	Neosho	Chanute Public Schools	1,831.7	2,612.1	4,254	10,395,748	10,896,711	500,963	211,587	712,550
106	Ness	Western Plains	108.8	285.7	0	1,171,819	1,191,369	19,550	8,858	28,408
303	Ness	Ness City	302.4	532.8	0	2,154,520	2,221,776	67,256	22,066	89,322
211	Norton	Norton Community Schools	675.1	1,096.8	0	4,539,257	4,573,656	34,399	86,238	120,637
212	Norton	Northern Valley	150.0	359.9	5,000	1,527,788	1,505,783	-22,005	21,041	-964
420	Osage	Osage City	671.5	1,082.8	27,090	4,365,286	4,542,366	177,080	82,212	259,292
421	Osage	Lyndon	433.0	724.4	5,000	2,906,067	3,025,748	119,681	50,723	170,404
434	Osage	Santa Fe Trail	1,001.4	1,583.6	12,335	6,353,088	6,615,947	262,859	145,431	408,290
454	Osage	Burlingame Public School	292.4	507.3	0	2,064,910	2,115,441	50,531	38,075	88,606
456	Osage	Marais Des Cygnes Valley	214.5	470.4	0	1,977,180	1,961,568	-15,612	29,923	14,311
392	Osborne	Osborne County	280.0	520.7	0	2,106,539	2,171,319	64,780	36,377	101,157
239	Ottawa	North Ottawa County	611.2	999.1	0	4,036,442	4,166,247	129,805	67,694	197,499
240	Ottawa	Twin Valley	592.1	1,008.1	0	4,004,187	4,203,777	199,590	54,256	253,846
495	Pawnee	Ft Larned	916.6	1,568.1	0	6,291,957	6,538,977	247,020	103,048	350,068
496	Pawnee	Pawnee Heights	143.5	315.7	22,725	1,290,713	1,339,194	48,481	14,415	62,896
110	Phillips	Thunder Ridge Schools	209.5	473.1	0	1,933,319	1,972,827	39,508	27,171	66,679
325	Phillips	Phillipsburg	620.0	996.3	0	3,945,290	4,154,571	209,281	73,528	282,809
326	Phillips	Logan	151.0	336.5	0	1,373,400	1,403,205	29,805	18,586	48,391
320	Pottawatomie	Wamego	1,501.5	1,896.0	40,000	7,735,414	7,946,320	210,906	152,438	363,344
321	Pottawatomie	Kaw Valley	1,156.0	1,655.3	0	6,650,991	6,902,601	251,610	151,854	403,464
322	Pottawatomie	Onaga-Havensville-Wheaton	297.5	540.0	0	2,197,808	2,251,800	53,992	28,577	82,569
323	Pottawatomie	Rock Creek	1,059.0	1,536.5	0	6,078,616	6,407,205	328,589	87,349	415,938
382	Pratt	Pratt	1,129.0	1,662.1	159,830	6,936,420	7,090,787	154,367	129,665	284,032

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3/30/2018	UPDATED		Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
			2016-17 or			2017-18 Est.	2018-19 Est.	Est. Gen Fund		Est. Gen Fund
			2017-18	2018-19 Est.	2017-18 Est.	Computed Gen Fund	Computed Gen Fund	(excl Sped)	2018-19 Est.	(incl Sped)
			Est. Adj. Enrollment	Total WTD FTE	Virtual	(Excl Sped & Extra Need)	(Excl Sped & Extra Need)	Difference	Special Ed Aid	Difference
USD #	County	District Name	(incl 4yr AR & KAMS)	(Excl Sped)	State Aid	$4,006	$4,170	(Col 5 - Col 4)	Increase	(Col 6 + Col 7)
Total		STATE TOTALS	473,906.9	694,853.6	31,347,660	2,819,127,061	2,928,887,172	109,760,111	44,400,245	154,160,356
438	Pratt	Skyline Schools	410.0	699.0	0	2,794,068	2,914,830	120,762	51,810	172,572
105	Rawlins	Rawlins County	335.0	613.5	0	2,493,275	2,558,295	65,020	28,733	93,753
308	Reno	Hutchinson Public Schools	4,494.9	6,284.0	17,725	26,477,132	26,222,005	-255,127	424,662	169,535
309	Reno	Nickerson	1,104.0	1,766.6	96,530	7,292,452	7,463,252	170,800	121,865	292,665
310	Reno	Fairfield	287.0	613.4	0	2,501,777	2,557,878	56,101	33,362	89,463
311	Reno	Pretty Prairie	260.1	489.1	0	1,911,546	2,039,547	128,001	24,942	152,943
312	Reno	Haven Public Schools	825.0	1,409.0	271,905	5,915,316	6,147,435	232,119	90,670	322,789
313	Reno	Buhler	2,294.5	2,891.7	0	11,611,411	12,058,389	446,978	243,609	690,587
109	Republic	Republic County	511.0	908.6	5,000	3,632,789	3,793,862	161,073	44,263	205,336
426	Republic	Pike Valley	221.0	449.9	0	1,830,298	1,876,083	45,785	20,189	65,974
376	Rice	Sterling	505.1	830.5	0	3,416,181	3,463,185	47,004	59,643	106,647
401	Rice	Chase-Raymond	165.5	380.6	0	1,509,485	1,587,102	77,617	19,229	96,846
405	Rice	Lyons	814.7	1,423.9	0	5,684,955	5,937,663	252,708	86,680	339,388
444	Rice	Little River	310.0	544.4	0	2,212,565	2,270,148	57,583	38,246	95,829
378	Riley	Riley County	677.9	1,081.2	0	4,340,530	4,508,604	168,074	73,196	241,270
383	Riley	Manhattan-Ogden	6,404.1	8,195.8	647,090	32,559,136	34,823,576	2,264,440	718,720	2,983,160
384	Riley	Blue Valley	215.5	433.2	0	1,746,328	1,806,444	60,116	28,501	88,617
269	Rooks	Palco	94.8	233.7	0	990,016	974,529	-15,487	12,624	-2,863
270	Rooks	Plainville	362.0	611.6	0	2,332,592	2,550,372	217,780	45,939	263,719
271	Rooks	Stockton	335.5	583.3	0	2,351,141	2,432,361	81,220	35,944	117,164
395	Rush	LaCrosse	289.0	541.5	0	2,173,150	2,258,055	84,905	26,438	111,343
403	Rush	Otis-Bison	241.5	490.7	79,395	1,987,777	2,125,614	137,837	31,909	169,746
399	Russell	Paradise	112.6	261.0	0	1,043,767	1,088,370	44,603	14,553	59,156
407	Russell	Russell County	848.2	1,356.8	0	5,362,614	5,657,856	295,242	70,940	366,182
305	Saline	Salina	7,198.8	10,089.7	76,746	40,480,143	42,150,795	1,670,652	690,057	2,360,709
306	Saline	Southeast Of Saline	691.0	1,095.2	0	4,426,870	4,566,984	140,114	62,773	202,887
307	Saline	Ell-Saline	460.0	777.2	15,000	3,148,781	3,255,924	107,143	44,268	151,411
466	Scott	Scott County	986.5	1,533.6	38,508	6,238,439	6,433,620	195,181	51,454	246,635
259	Sedgwick	Wichita	48,398.0	75,497.4	2,093,250	302,668,982	316,917,408	14,248,426	4,492,831	18,741,257
260	Sedgwick	Derby	6,906.3	8,907.3	78,060	35,226,952	37,221,501	1,994,549	560,489	2,555,038
261	Sedgwick	Haysville	5,643.7	7,752.8	0	30,523,863	32,329,176	1,805,313	535,313	2,340,626
262	Sedgwick	Valley Center Pub Sch	2,841.1	3,647.9	202,040	14,516,727	15,413,783	897,056	265,826	1,162,882
263	Sedgwick	Mulvane	1,751.8	2,149.5	0	8,655,051	8,963,415	308,364	161,492	469,856
264	Sedgwick	Clearwater	1,126.0	1,568.0	0	6,286,011	6,538,560	252,549	109,982	362,531
265	Sedgwick	Goddard	5,660.5	6,977.1	35,101	27,827,765	29,129,608	1,301,843	476,445	1,778,288
266	Sedgwick	Maize	6,948.7	8,473.0	1,830,000	35,202,932	37,162,410	1,959,478	624,748	2,584,226
267	Sedgwick	Renwick	1,851.0	2,211.1	0	8,974,107	9,220,287	246,180	164,843	411,023
268	Sedgwick	Cheney	789.7	1,260.2	0	5,037,244	5,255,034	217,790	72,403	290,193
480	Seward	Liberal	4,871.0	8,433.3	0	33,826,662	35,166,861	1,340,199	263,705	1,603,904
483	Seward	Kismet-Plains	689.0	1,474.8	0	5,957,413	6,149,916	192,503	57,546	250,049
345	Shawnee	Seaman	3,869.2	5,016.1	44,069	19,709,019	20,961,206	1,252,187	424,459	1,676,646

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3/30/2018	UPDATED		Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
			2016-17 or			2017-18 Est.	2018-19 Est.	Est. Gen Fund		Est. Gen Fund
			2017-18	2018-19 Est.	2017-18 Est.	Computed Gen Fund	Computed Gen Fund	(excl Sped)	2018-19 Est.	(incl Sped)
			Est. Adj. Enrollment	Total WTD FTE	Virtual	(Excl Sped & Extra Need)	(Excl Sped & Extra Need)	Difference	Special Ed Aid	Difference
USD #	County	District Name	(incl 4yr AR & KAMS)	(Excl Sped)	State Aid	$4,006	$4,170	(Col 5 - Col 4)	Increase	(Col 6 + Col 7)
Total		STATE TOTALS	473,906.9	694,853.6	31,347,660	2,819,127,061	2,928,887,172	109,760,111	44,400,245	154,160,356
372	Shawnee	Silver Lake	710.1	1,069.3	0	4,214,860	4,458,981	244,121	57,031	301,152
437	Shawnee	Auburn Washburn	6,254.3	7,838.5	0	31,432,452	32,686,545	1,254,093	592,225	1,846,318
450	Shawnee	Shawnee Heights	3,493.0	4,502.9	26,020	18,131,524	18,803,113	671,589	315,355	986,944
501	Shawnee	Topeka Public Schools	13,356.0	20,209.5	277,700	81,697,245	84,551,315	2,854,070	1,586,954	4,441,024
412	Sheridan	Hoxie Community Schools	400.5	663.3	0	2,570,676	2,765,961	195,285	28,192	223,477
352	Sherman	Goodland	917.9	1,470.1	25,000	5,936,297	6,155,317	219,020	94,543	313,563
237	Smith	Smith Center	396.0	700.0	0	2,827,357	2,919,000	91,643	49,876	141,519
349	Stafford	Stafford	233.6	472.9	0	1,983,868	1,971,993	-11,875	32,662	20,787
350	Stafford	St John-Hudson	331.5	595.9	0	2,416,474	2,484,903	68,429	43,728	112,157
351	Stafford	Macksville	234.5	501.7	0	2,035,164	2,092,089	56,925	33,165	90,090
452	Stanton	Stanton County	437.5	816.6	0	3,247,952	3,405,222	157,270	25,752	183,022
209	Stevens	Moscow Public Schools	178.5	408.3	0	1,621,575	1,702,611	81,036	10,832	91,868
210	Stevens	Hugoton Public Schools	1,020.1	1,707.6	10,000	7,114,532	7,130,692	16,160	55,416	71,576
353	Sumner	Wellington	1,595.5	2,244.1	0	9,000,421	9,357,897	357,476	213,447	570,923
356	Sumner	Conway Springs	465.2	766.2	0	3,183,738	3,195,054	11,316	47,102	58,418
357	Sumner	Belle Plaine	627.0	1,039.9	20,000	4,110,875	4,356,383	245,508	74,202	319,710
358	Sumner	Oxford	370.9	648.2	278,775	2,465,656	2,981,769	516,113	41,473	557,586
359	Sumner	Argonia Public Schools	187.5	391.3	0	1,580,341	1,631,721	51,380	21,607	72,987
360	Sumner	Caldwell	245.0	486.0	10,000	1,887,118	2,036,620	149,502	29,065	178,567
509	Sumner	South Haven	200.5	403.5	0	1,620,491	1,682,595	62,104	26,758	88,862
314	Thomas	Brewster	147.5	316.4	0	1,266,156	1,319,388	53,232	14,125	67,357
315	Thomas	Colby Public Schools	887.5	1,350.1	0	5,438,772	5,629,917	191,145	60,966	252,111
316	Thomas	Golden Plains	180.0	418.4	0	1,667,303	1,744,728	77,425	26,410	103,835
208	Trego	Wakeeney	382.5	659.5	0	2,669,974	2,750,115	80,141	48,039	128,180
329	Wabaunsee	Mill Creek Valley	447.0	773.2	0	3,080,435	3,224,244	143,809	46,596	190,405
330	Wabaunsee	Mission Valley	491.5	876.1	0	3,522,367	3,653,337	130,970	78,470	209,440
241	Wallace	Wallace County Schools	200.5	411.8	0	1,655,209	1,717,206	61,997	15,244	77,241
242	Wallace	Weskan	104.0	239.0	0	943,648	996,630	52,982	11,288	64,270
108	Washington	Washington Co. Schools	334.5	621.1	0	2,591,536	2,589,987	-1,549	33,254	31,705
223	Washington	Barnes	368.8	645.6	0	2,592,021	2,692,152	100,131	45,995	146,126
224	Washington	Clifton-Clyde	315.5	568.4	0	2,301,256	2,370,228	68,972	28,760	97,732
467	Wichita	Leoti	394.5	735.7	0	2,964,414	3,067,869	103,455	22,517	125,972
387	Wilson	Altoona-Midway	171.5	403.3	0	1,694,724	1,681,761	-12,963	21,635	8,672
461	Wilson	Neodesha	689.0	1,162.0	0	4,775,879	4,845,540	69,661	57,013	126,674
484	Wilson	Fredonia	686.5	1,152.9	8,885	4,493,552	4,816,478	322,926	49,688	372,614
366	Woodson	Woodson	465.5	876.3	10,000	3,471,573	3,664,171	192,598	54,200	246,798
202	Wyandotte	Turner-Kansas City	4,049.4	6,213.1	126,520	24,841,689	26,035,147	1,193,458	295,158	1,488,616
203	Wyandotte	Piper-Kansas City	2,267.3	2,738.1	25,000	10,609,487	11,442,877	833,390	241,319	1,074,709
204	Wyandotte	Bonner Springs	2,649.5	3,453.8	223,958	14,271,984	14,626,304	354,320	324,146	678,466
500	Wyandotte	Kansas City	21,576.3	35,255.6	542,030	140,137,870	147,557,882	7,420,012	1,578,769	8,998,781

App. #001139

Review of Kansas State School Finance Studies

Jesse Levin (American Institutes for Research)

AIR
AMERICAN INSTITUTES FOR RESEARCH

March 29, 2018

Agenda

- Overview of Study by Taylor et al. (2018)
- Main Concerns
- Differences in Findings of Cost Studies

Overview of Cost Study

- Cost Function Approach (Stochastic Cost Frontier)

Spending = f(Input Prices, District Enrollment, Environmental Factors, Controls for Efficiency, Outcomes)

+

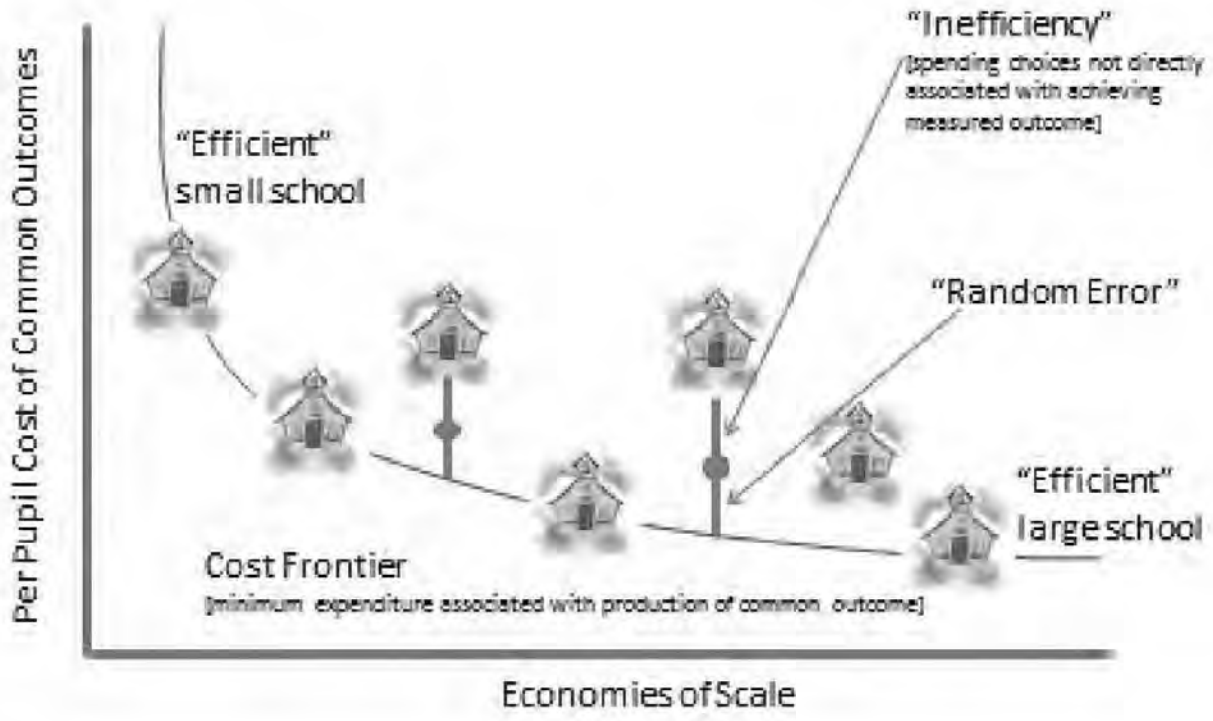
Inefficiency

+

Random Factors

App. #001142

Overview of Cost Study



App. #001143

Overview of Cost Study

	Base Per-Pupil Cost (95% Graduation)	Regional Index	Economies of Scale Index	Student Needs Index	Compensatory		Current Spending and Adequate Per-Pupil Costs			
					Old Standards	New Standards	Current Per-Pupil Spending (2016-17)	Projected Per-Pupil Costs - Regional, Scale and Needs Adjustments Only	Adequacy Per-Pupil Costs - Old Standards	Adequacy Per-Pupil Costs - New Standards
Raw Average	$3,766	1.69	1.24	1.35	1.23	1.29		$10,574	$12,964	$13,620
Weighted Average	$3,727	1.46	1.42	1.39	1.26	1.31	$9,313	$10,433	$13,204	$13,767
Minimum	$3,395	1.05	1.00	1.00	0.23	0.25		$5,199	$4,940	$5,303
Maximum	$4,113	1.94	2.75	1.91	2.81	2.96		$28,094	$38,405	$40,455
Projected adequate per-pupil costs calculated by reviewer.										

App. #001144

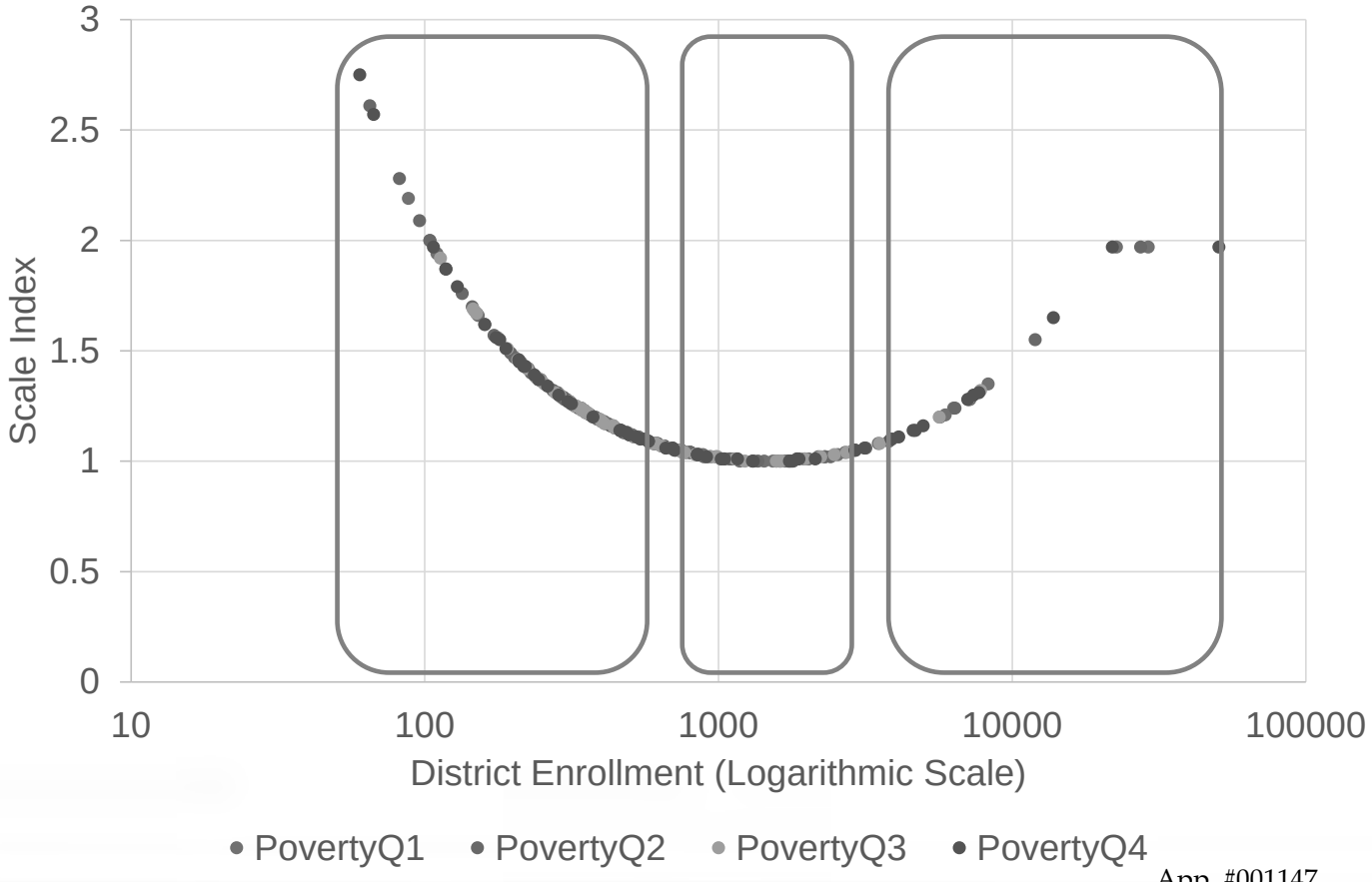
Overview of Cost Study

	Cost Estimate ($)	Absolute Increase Over Current	Relative Increase Over Current	Per Pupil Cost Estimate ($)
Current K-12 Spending	$4.652 billion	n/a	n/a	$9,313
No compensatory support	$5.103 billion	$0.451 billion	9.70%	$10,419
Compensatory support for Scenario A	$6.438 billion	$1.786 billion	38.40%	$13,144
Compensatory support for Scenario B	$6.719 billion	$2.067 billion	44.40%	$13,717

Main Concerns – Scale Index

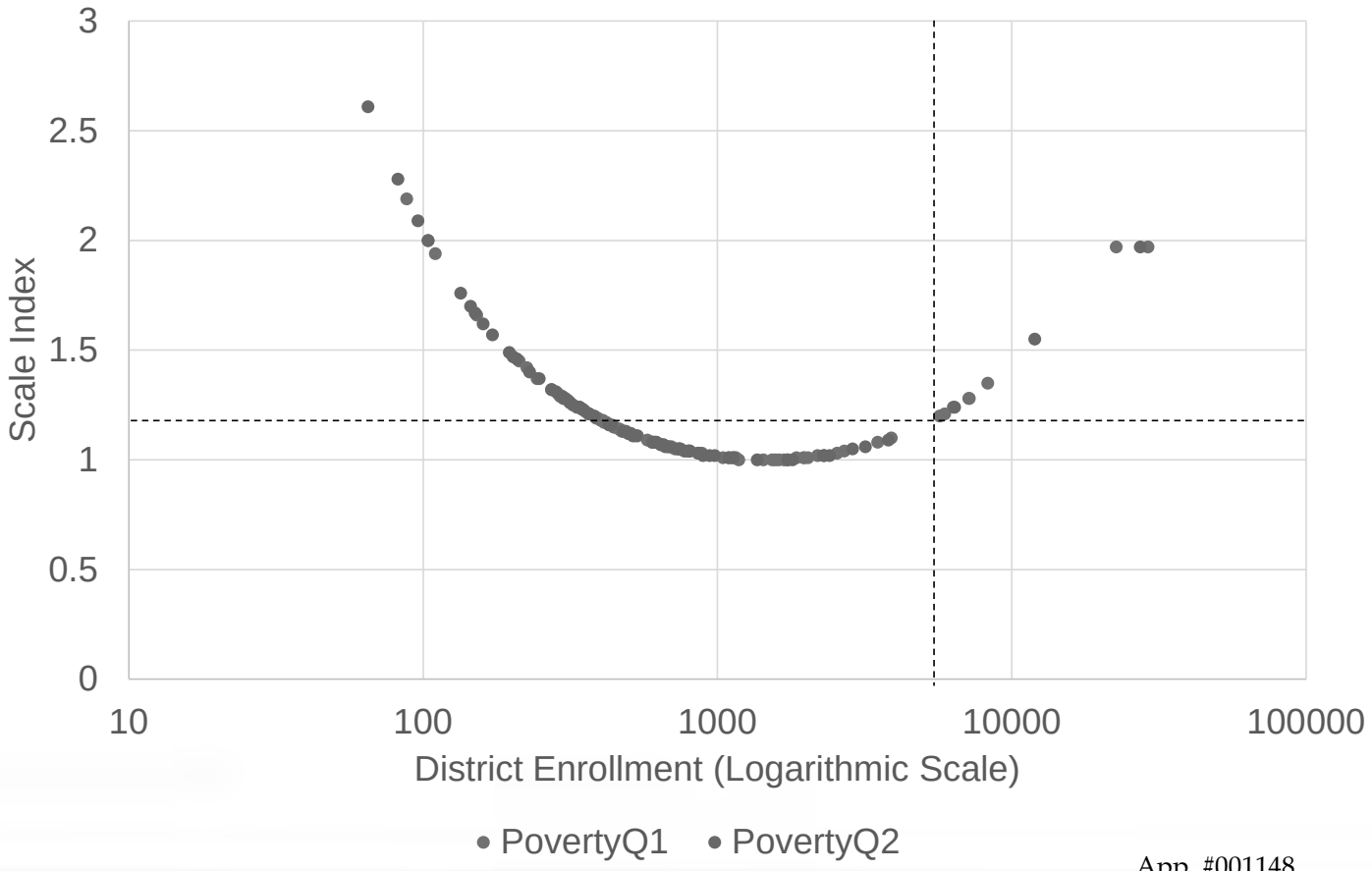
- Economies of Scale Index
  - For smaller to medium sized districts index works well.
  - Produces uncharacteristically large funding adjustments for bigger districts.
  - Seems to be a direct result of how enrollment was specified in the model.

Main Concerns – Scale Index



App. #001147

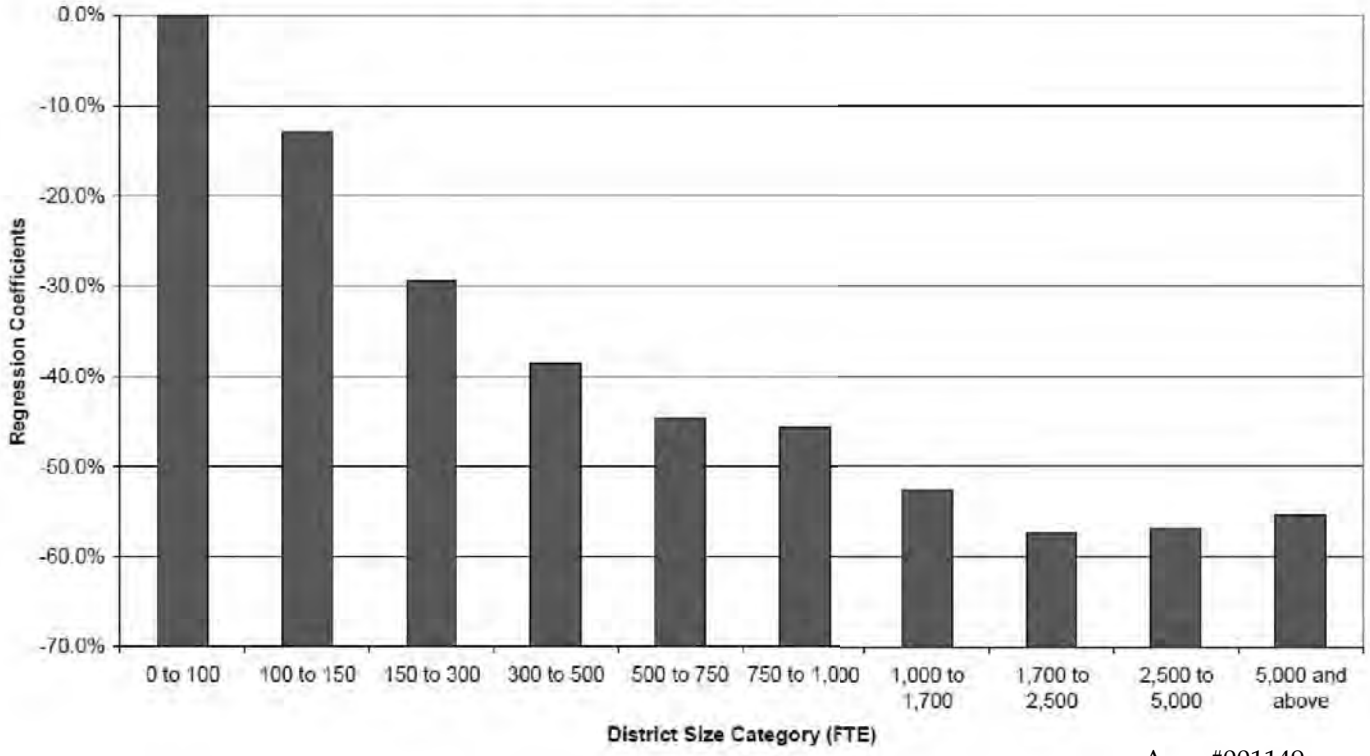
Main Concerns – Scale Index



App. #001148

Main Concerns – Scale Index

Figure 3: Percent Reduction in Cost Compared to a District with 100 or Less Students



App. #001149

Main Concerns – Costs of Meeting Achievement Thresholds

- Study Documentation Lacking
  - How do NCEs translate into gains in proficiency rates?
  - What were the calculations behind the compensatory indices?

Main Concerns – Hold Harmless

- Holding Districts Harmless
  - Ensuring districts that are currently meeting or exceeding outcome thresholds do not have their funding reduced.
  - Implies that some districts are being funded more than is necessary to meet outcome thresholds.
  - Logical reason for limited application of hold harmless policies while phasing in new formula.

Main Concerns – Hold Harmless

- Two good reasons not to hold districts harmless indefinitely:
  - There is a very real cost to holding districts harmless.
  - Hold-harmless policies directly undermine the equity intent of the formula.
- Study should do the following:
  - Calculate the additional cost of holding districts harmless.
  - Suggest a plan for tapering down hold harmless "subsidies" as funding formula is being phased in.

Main Concerns – Validity Checks

- Validity checks should be a part of every costing out study.
- A simple check to perform is to confirm that projected funding is being targeted appropriately.
  - Define measure of relative shortfall of funding as follows:

$$\textbf{Adequacy Gap} = \frac{\textbf{Adequate Per-Pupil Cost}}{\textbf{Actual Per-Pupil Spending}}$$

  - Evaluate how student outcomes vary by adequacy gap.

App. #001153

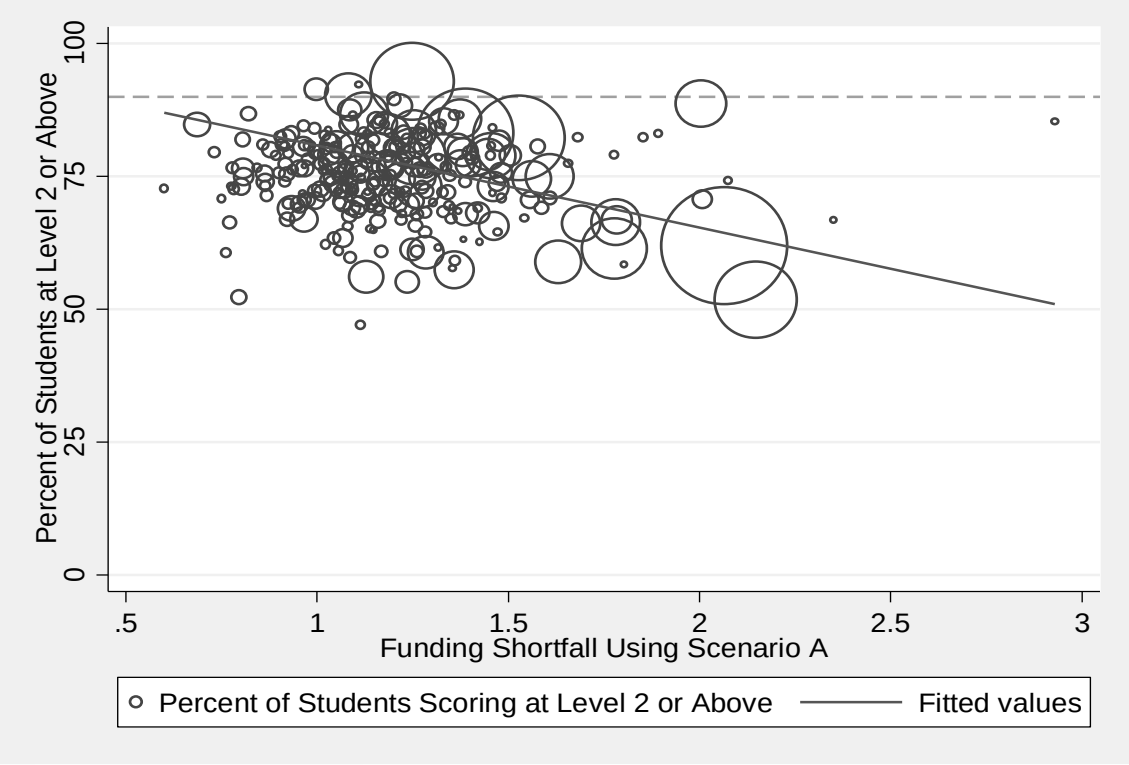
Main Concerns – Validity Checks

- Conducted simple validity check using:
  - Data on projected adequate costs from study appendices.
  - Federal data on actual spending.
  - Kansas Assessment Program (KAP) data on student outcomes.

App. #001154

Main Concerns – Validity Checks

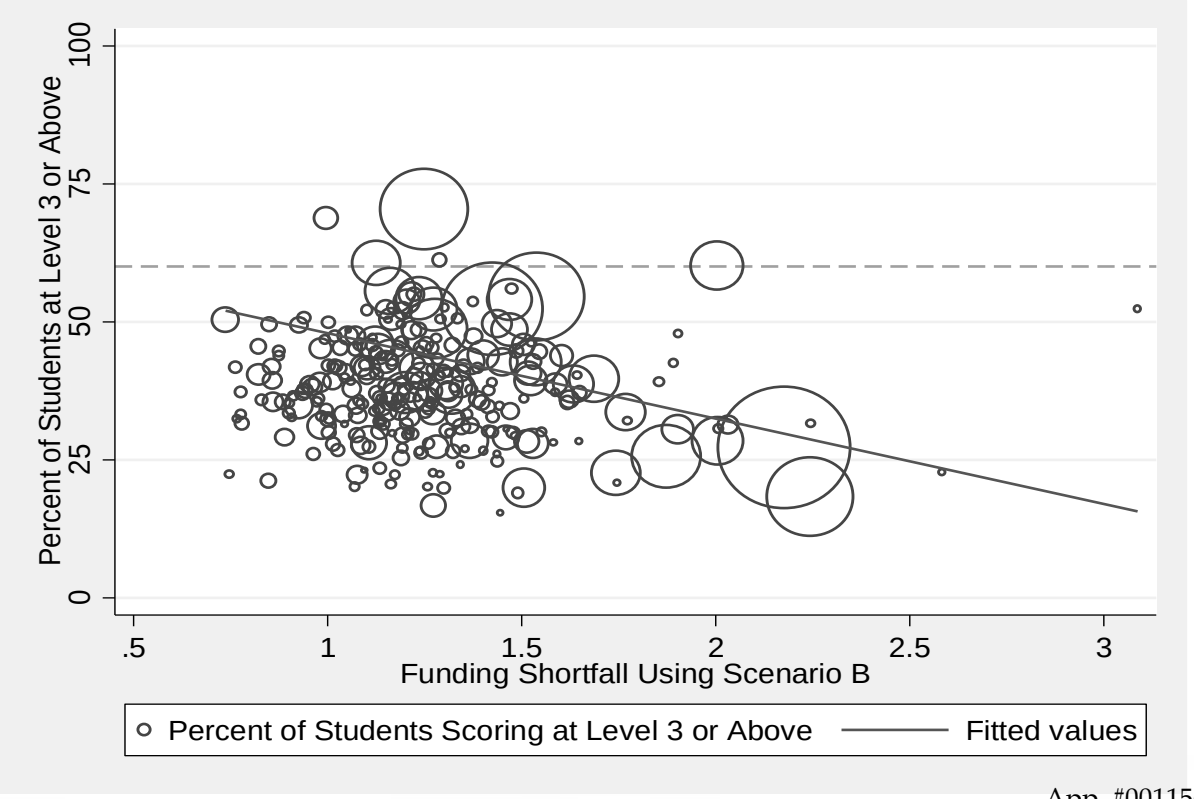
- ELA-Scenario A



App. #001155

Main Concerns – Validity Checks

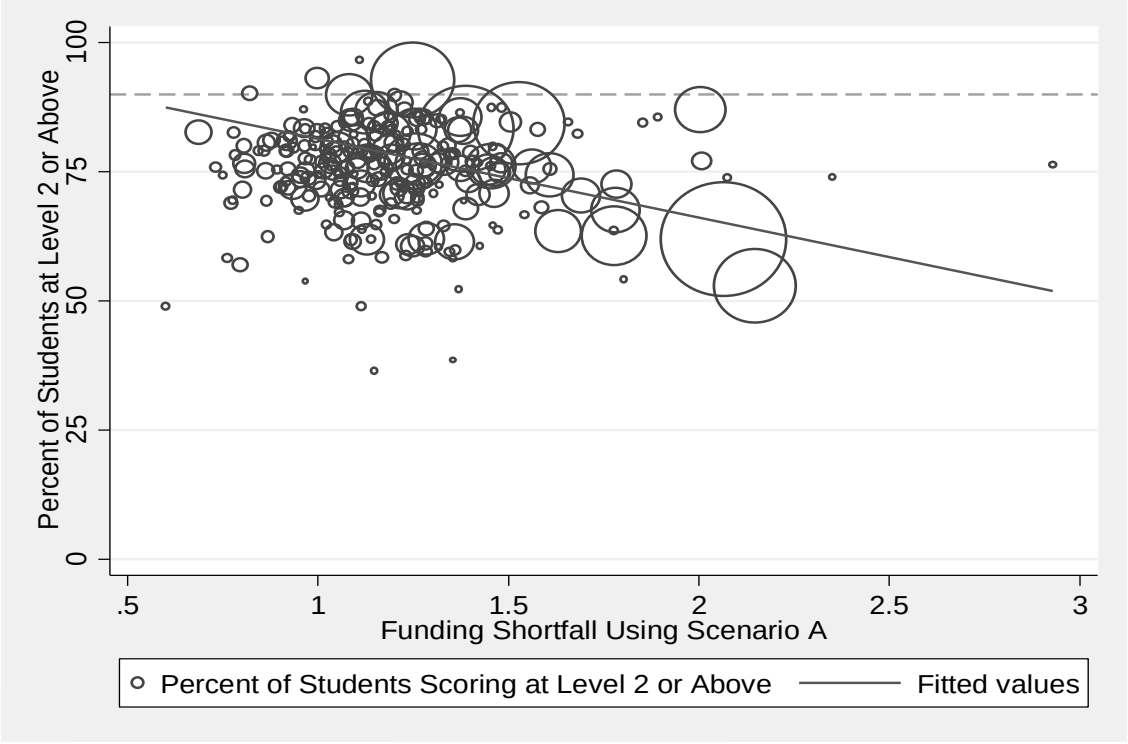
- ELA-Scenario B



App. #001156

Main Concerns – Validity Checks

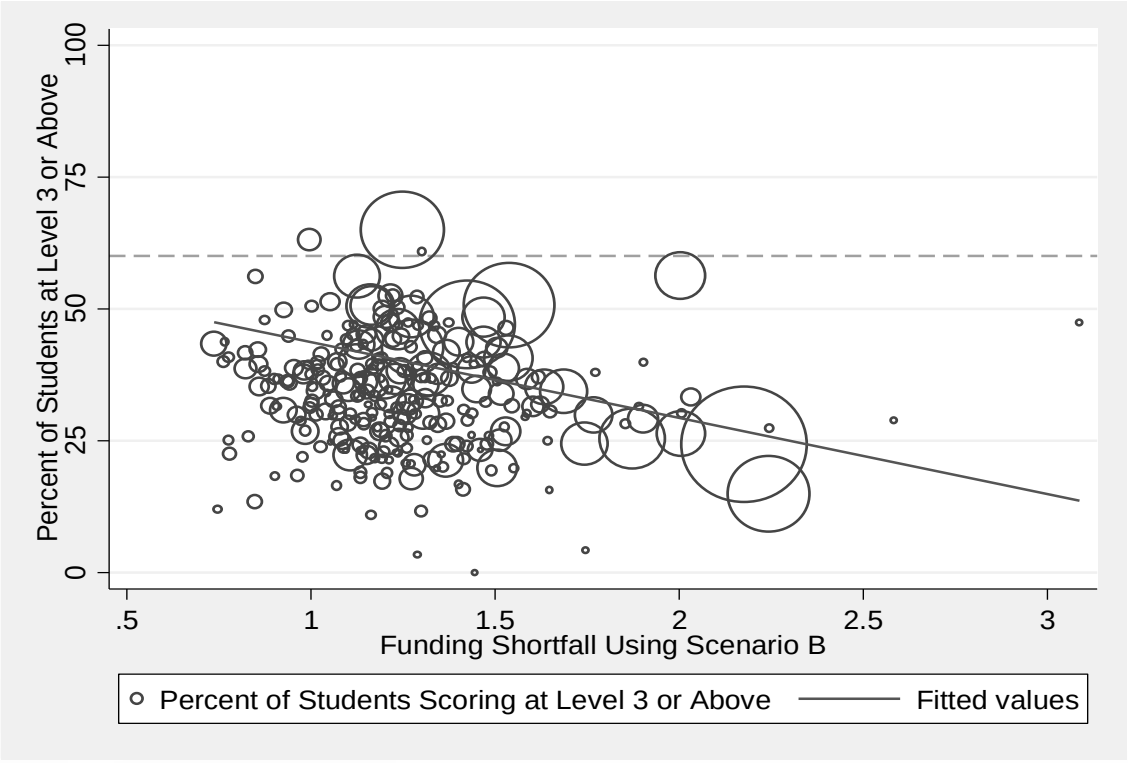
- Math-Scenario A



App. #001157

Main Concerns – Validity Checks

- Math-Scenario B



App. #001158

Main Concerns – Validity Checks

- Conclusions from reviewer validity check:
  - Relationship between student achievement and relative funding shortfall is consistently negative (statistically significant via correlational tests).
  - There are few districts that are currently meeting the outcome thresholds used in study.

Differences in Cost Study Findings

- Large difference in reported costs between studies.
  - LPA study: $0.399 billion
  - Taylor et al.: $1.786 billion for Scenario A and $2.067 billion for Scenario B
- Possible Explanations
  - Studies performed in different years so comparison requires adjusting for inflation.
  - LPA study did not include all Federal dollars.
  - Taylor et al. study did not include food services or transportation.

App. #001160

Differences in Cost Study Findings

- Adjustments to LPA figure decreases difference.
  - LPA study figure increases by over 50 percent (from $0.399 to $0.719 billion).
- Increases to Taylor et al. figures would increase differences.

App. #001161

Differences in Cost Study Findings

	Current K-12 Spending in 2016 Dollars	Kansas Legislative Post Audit Division 2006 Dollars	Kansas Legislative Post Audit Division Inflated to 2016 Dollars	Kansas Legislative Post Audit Division Inflated to 2016 Dollars With Federal Funding	Taylor et al. - Scenario A in 2016 Dollars	Taylor et al. - Scenario B in 2016 Dollars
Necessary Absolute Increase (in Billions of 2016 Dollars)	$4.652	$0.399	$0.475	$0.719	$1.786	$2.067
Necessary Relative Increase	n/a	n/a	10.2%	15.5%	38.4%	44.4%
Includes Federal Dollars	√	×	×	√	√	√
Includes Food Service and Transportation	×	√	√	√	×	×

App. #001162

Differences in Cost Study Findings

- Remaining Explanations
  - Standards used by studies to define adequacy thresholds were not equivalent.
  - LPA study did not represent a true adequacy study, but rather mixed an investigation of existing spending with elements of a true cost study.

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Review of Kansas Education Cost Studies – Second Report

Estimating the Costs Associated with Reaching Student Achievement Expectations for Kansas Public Education Students: A Cost Function Approach (by Lori Taylor, Jason Willis, Alex Berg-Jacobson, Karina Jaquet and Ruthie Caparas)

Jesse Levin (AIR)

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1 – Introduction

The debate surrounding school finance in Kansas and specifically the question of how much funding is necessary to allow for the *suitable* provision for the financing of the state's public education system has been and continues to be at the forefront of policy discussion. As mentioned in the first review submitted to the Kansas Legislative Coordinating Council (Levin, 2018), a series of court cases resulted in two previous research efforts to better understand what constitutes a suitable education and how much would it cost to provide this to all students in the state:

1) Calculation of the Cost of a Suitable Education in Kansas in 2000-2001 Using Two Different Analytic Approaches (Augenblick and Myers, Inc., 2002)
2) Elementary and Secondary Education in Kansas: Estimating the Costs of K-12 Education Using Two Approaches (Kansas Legislative Post Audit Division, 2006)

The current report provides a brief discussion of the funding recommendations put forth by the Kansas State Board of Education Department at their June 12, 2016 meeting. In addition, it includes a review of the new third study conducted by economist Dr. Lori Taylor (Texas A&M) and researcher staff at WestEd:

3) Estimating the Costs Associated with Reaching Student Achievement Expectations for Kansas Public Education Students: A Cost Function Approach (Taylor et al., 2018)

The purpose of this report is to provide a review of this new study focusing on the methodology used and corresponding results in order to inform the current discussion surrounding the forthcoming remedy ordered by the Kansas State Supreme Court.

The report is organized as follows. Section 2 provides a short discussion of the 2016 funding recommendations made by the Kansas State Board of Education Department. Section 3 includes a review of the new study performed by Taylor et al. (2018). Section 4 provides a brief comparison of findings from the two cost function studies, Kansas Legislative Post Audit Division (2006) and Taylor et al. (2018).

2 – Review of *Kansas State Board of Education Funding Recommendations for FY 2018 and 2019*

The Kansas State Board of Education developed their annual recommendations in session on July 12, 2016. Among the recommendations approved by the Board were the following:

- Set Base State Aid Per Pupil at $4,650 for FY 2018 with a $500 increase to $5,150 in FY 2019. However, a subsequent vote on special education funding changed the BSAPP recommendation to $4,604 FY18 and $5,090 FY19.
- Fund Special Education at 85 percent of excess cost, but subtract the amount from the BSAPP amount originally approved.
- Increase Parents as Teachers funding by 1,000 children for an additional cost of $460,000 and requested that Children's Initiative Funds be utilized, not federal funds.
- Fund 100 percent of the law for the Teacher Mentor Program for an additional cost of $3 million.
- Fund Professional Development at 50 percent of the law.
- Fund $35,000 each for Agriculture in the Classroom, Communities in Schools and Kansas Association of Conservation and Environmental Education.
- Fund the law for National Board Certification for an additional cost of $47,500.
- Fund the Pre-K Pilot program at the 2009-10 level for an additional cost of $900,000 and request that Children's Initiative Funds be utilized.
- Fund technical education transportation at original level for an additional cost of $800,000.

Unfortunately, there is very little I can say at present about any methodology underlying the recommendations as they pertain to delivering an adequate education. From the video of the proceedings it seems that the policy recommendations were made based on deliberations surrounding what board members felt should be done and had a reasonable chance of being adopted. However, it is unclear whether any of these recommendations had any basis in formal analysis designed to investigate the funding necessary to provide an adequate education. That being said, I did perform a simple, but informative analysis of the first recommendation put forth above.

Table 1 presents a comparison of the 2005 base per-pupil cost to the base per-pupil costs recommended for fiscal years 2018 and 2019 by the Kansas State Board of Education. To make this comparison, it is necessary to put all the per-pupil figures into dollars of a similar year. I have chosen to peg the dollars to 2017 and done so by inflating (multiplying) the 2005 figure ($4,257) to 2017 dollars using an inflation factor of 1.24 yielding a figure of $5,265. I next adjusted the recommended 2018 and 2019 base figures to 2017 dollars by deflating (dividing by) deflation factors of 1.01 and 1.03, respectively.[1] This generated recommended base per-pupil costs in 2017 dollars equal to $4,544 for 2018 and $4,957 for 2019, which equal 86 and 94 percent of the inflated 2017-dollar equivalent of the 2005 base. Therefore, the proposed increases to the Base State Aid Per Pupil for 2018 and 2019 were not high enough to maintain the 2005 base funding level in real terms. That is, it would not be enough to account for the degree to which inflation eroded the value of the dollar since 2005. To maintain the purchasing power of the 2005

[1] Inflation and deflation rates were derived from the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI) in the Midwest states (series CUUR0200SA0 available here: https://data.bls.gov/pdq/SurveyOutputServlet?data_tool=dropmap&series_id=CUUR0200SA0,CUUS0200SA0).

Base State Aid Per Pupil the funding levels would have to increase further by $722 in 2018 and $308 in 2019.

Table 1 – Comparison of Base Per-Pupil Cost in 2005 to Recommended Levels for 2018 and 2019

	Base Per-Pupil Cost			
	2005 Base	***2005 Base Inflated to 2017 Dollars***	***Recommended 2018 Base Deflated to 2017 Dollars***	***Recommended 2019 Base Deflated to 2017 Dollars***
Cost Per Pupil	$4,257	$5,265	$4,544	$4,957
Relative Difference from 2005 Base Inflated to 2017 Dollars			86%	94%
Additional Increase in Future Bases to Maintain Real Value of 2005 Base			$722	$308

3 – Estimating the Costs Associated with Reaching Student Achievement Expectations for Kansas Public Education Students: A Cost Function Approach (Taylor et al., 2018)

Study Methodology

Cost Function Approach (Stochastic Cost Frontier)

Similar to the 2006 study by LPA (Kansas Legislative Post Audit Division, 2006), the study by Taylor et al. (2018) employs a cost function methodology. However, unlike the cost function performed as part of the LPA study, the newer study estimates a cost function using a stochastic frontier analysis approach (SFA). SFA finds its origins in the field of economics, where there is a long history of developing models that describe units of output produced (production functions) or the cost of producing output (cost functions).[2] An important development include in these models is that take into account not only the technology of production (i.e., the combinations of inputs used, their prices, and corresponding spending), but also the (in)efficiency with which outcomes are produced.

The stochastic cost frontier model used by Taylor et al. (2018) assumes that there is a set of minimum costs at which different levels of outcomes can be produced given the inputs being used and other environmental cost factors. While schools can at best operate at a minimum cost (with perfect efficiency), they may exceed this due to either 1) random factors that are outside of the control of schools or 2) inefficiency that is at least partially a result of the choices made by schools. In simple mathematical terms, the stochastic cost frontier is specified as a function with deterministic and random components:

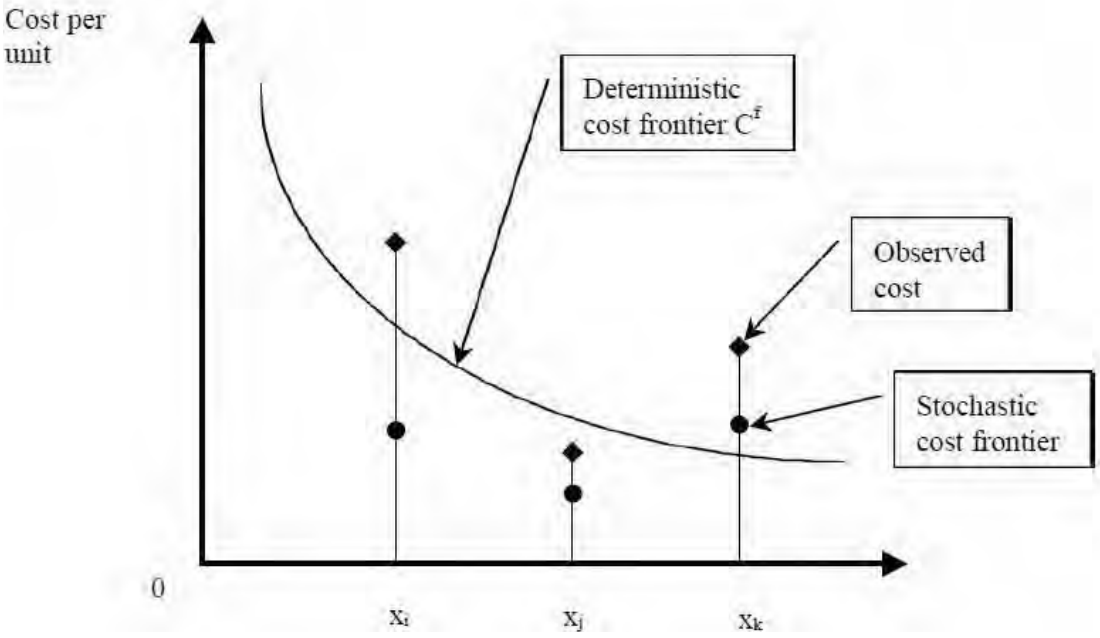
$$\textbf{(1)}\quad \textbf{Spending} = \mathbf{f}(\textbf{Outcomes}, \textbf{Input Prices}, \textbf{Enrollment Size}, \textbf{Environmental Factors}) + \textbf{Random Factors} + \textbf{Inefficiency}$$

The first line in equation (1) is what is called the deterministic portion of the model or the amount of spending that we can determine through relationships between spending and observable factors (i.e., outcomes, quantities of inputs and their prices, enrollment and other environmental factors), while the second line introduces the amount of spending that cannot be explained by the observed factors and is made up of those that are random (stochastic) and any inefficiency due to the choices of the producer (schools).

Exhibit 1 from Anderson and Kabir (2000) provides a simple illustration the component of the stochastic cost frontier model. The graph shows the cost per unit production of a common outcome (y-axis) and the number of students for which the outcome is produced (x-axis). The curved line shows the cost function based solely on the deterministic portion of the model (deterministic cost frontier). The dots show how far above or below the deterministic cost frontier three different schools are spending and represent the random or stochastic component of the model (i.e., this collection of dots represents the stochastic cost frontier).

[2] Among one of the earliest expositions is Farrell (1957).

Exhibit 1 – Graphical Illustration of Estimated Costs in Stochastic Cost Frontier Model



For schools i and j, there seemed to be favorable random conditions that put downward pressure on their costs (i.e., their dots lie below the deterministic cost frontier), while the opposite was true for school k. The diamonds represent the costs that we actually observe for each school. The vertical distance between these observed costs and diamonds represent inefficiency or differences in cost associated with unobservable factors (not controlled for in the deterministic portion of the model) thought to be at least partially caused by the decisions made by schools. For all three schools, the observed costs (diamonds) are higher than those that define the stochastic cost frontier. By definition, the observed costs that may include inefficiency must be larger or equal to the corresponding costs on the stochastic frontier. For school i, the inefficiency is most severe, which offsets the negative random component and pushes the observed cost above the deterministic cost frontier. In school j, the degree of inefficiency is less severe so that the observed cost is still below the deterministic cost frontier. For school k, the inefficiency is relatively moderate and reinforces the upward pressure on costs due to unfavorable random conditions so that the observed cost is pushed even further above the deterministic cost frontier.

Variables Used in Cost Model

Outcomes

The outcomes used in the model are based on proficiency rates on English language arts and math tests (College and Career Ready Assessments) first administered under the Kansas Assessment Program (KAP) in the 2014-15 school year. Particular attention was given to comparing the definitions of proficiency of the old assessment standards in place under the No Child Left Behind (NCLB) law and the new assessment standards under KAP. In general, the old assessment included five categories including Exemplary, Exceeds Standard, Meets Standard, Approaching Standard, and Academic Warning with the

first three indicating proficiency, while the new standards range from 4 down to 1 with levels 3 and 4 indicating that a student is proficient (on track to being college and career ready).[3]

The authors next developed two different outcome thresholds to use in their cost projections based on the definitions of proficient under the old and new assessment systems. To do this, they considered the goals set in the state's plan approved by the U.S. Department of Education under the Every Student Succeeds Act (ESSA) to determine what the annual increase in proficiency rate would be to meet the goal of a 75 percent proficiency rate by 2030 and translated this into necessary annual gains. Under the new standards where categories 1 and 2 define proficiency it was determined that ELA and math rates in these two categories would both have to increase annually by about 3.5 percent.[4] Using the old NCLB standards it was determined that ELA and math proficiency rates would be defined by the new KAP categories 2, 3 and 4, and would have to increase annually by 3.6 and 5.4 percent, respectively.[5] To facilitate the use of achievement measures across the different grades (3 through 8 and 10) and subjects (ELA and math) tested, the authors used data on individual students to calculate conditional national curve equivalent (NCE) scores. School-level averages of these individual ELA and math measures represent a school's yearly academic progress.

In addition, the authors included measures of graduation rate based on a cohort method (i.e., the percent of entering students that graduated in a normal time frame). Based on the goal included in the state's ESSA plan, the authors set an annual increase of 0.68 percentage points in order to meet the graduation target of 95 percent set for 2030.

Input Prices

Measures of input price levels included a teacher salary index that was based on a statewide hedonic wage model.[6] Note that the cost model used in the study by the Legislative Division of Post Audit (2006) also included this type of salary index.

Environmental Factors

The environmental factors used in the model included district-level enrollment, school-level incidences of student needs (students eligible for free- or reduced-price lunch, those designated as English learners, and students in special education), the grade-level designation of the school (elementary, middle or high), and a density measure (population per-square mile).

Efficiency Measures

Indirect measures of efficiency were included to account for the fact that schools subject to more competition or in areas with adult populations that are more likely to monitor public spending and hold public institutions accountable will tend to spend more efficiently. To this end, the authors included the following factors as indirect efficiency measures: concentration of enrollment (Herfindahl index) in metro/micropolitan areas, indicator for whether or not the district is located in a metropolitan area that spans state lines, percentage of households in county that are owner-occupants, and the percentages of the county population with at least a bachelor's degree and the percentage of households in which the residents are over age 60.

[3] See Table 5 in Taylor et al. (2018) for a side-by-side comparison of the old and new assessment standards.
[4] Note, this would yield a target proficiency rate of 60 percent within five years (by the 2021-22 school year).
[5] Note, this would yield a target proficiency rate of 90 percent within five years (by the 2021-22 school year).
[6] For an early example of this type of model see Chambers (1981).

Expenditures

Per-pupil expenditures were based on school-level measures of total operating expenditures that excluded food, transportation, capital outlay for construction, community service, debt service, fund transfers and adult education.

Results

Table 2 contains the estimated stochastic cost frontier model. Almost all the results make intuitive sense.

Table 2 – Estimated Stochastic Cost Frontier Model

Variable	***Estimates***
Normal Curve Equivalent	5.295*** (-0.607)
Graduation Rate	1.244*** (-0.262)
Graduation Rate * High School	0.696*** (-0.0995)
District Enrollment	-1.444*** (-0.0568)
District Enrollment squared	0.0991*** (-0.00378)
Salary index (log)	1.373*** (-0.279)
Rural indicator	0.0505*** (-0.0112)
% Economically Disadvantaged	0.886*** (-0.078)
% English Language Learner	0.226*** (-0.0667)
% Special Education	2.157*** (-0.226)
Population Density	0.166*** (-0.018)
Elementary grades served	-0.129*** (-0.016)
High school grades served	-0.508*** (-0.0909)
% English Language Learner, sq	-0.623*** (-0.109)
% Special Education, sq	-6.135*** (-0.674)
Population density* Salary Index	-0.510*** (-0.0414)
AYP Schoolyear = 2016	-0.0364*** (-0.00591)
First stage Residuals, NCE	-5.102*** (-0.609)
First stage residuals, Graduation	-1.454*** (-0.271)
Herfindahl Index, log	0.797*** (-0.249)
Border metro	2.320*** (-0.372)
% Owner occupied	7.293*** (-1.321)
% Over 60	-2.316 (-1.496)
% College	-12.06*** (-1.542)
Constant	9.644*** (-0.357)
Usigma	-7.214*** (-0.958)
Vsigma	-4.095*** (-0.0418)
Observations	2,310
***** p<0.01, ** p<0.05, * p<0.1** **Robust standard errors in parentheses.**	

Increases in outcomes cost more; each percentage point increase in the NCE costs approximately 5.3 percent more), while each percentage point increase in graduation rate is associated with a 1.9 percent increase in cost at the high school level and a 1.2 percent increase at the lower grades. Scale of operations as defined by district enrollment shows economies of scale so that costs decrease up to a certain point (more on this below). Costs will be higher for those schools in areas with higher teacher salaries. Those schools in rural areas have higher costs, however, areas which are more population dense also tend to cost more. Cost is positively associated with student needs (incidences of economic disadvantage, English learners and special education), but less so at higher incidences of English learners and special education students. Lack of educational competition (high concentration of education providers in the market) is associated with higher costs (more inefficiency), while the percent of population that is over 60 and college educated (with a BA or higher) is associated with lower costs (less inefficiency). However, the percent of owner-occupied housing tends to increase cost (inefficiency).

Table 3 includes the resulting estimated base per-pupil costs associated with achieving a 95 percent graduation rate (in 2030), as well as indices that adjust funding for: 1) cost factors associated with grade level (calculated in the base per-pupil cost) and regional, scale and student needs cost factors; and, 2) to allow for "compensatory" support of district progress towards desired proficiency rates under the old and new standards.[7] The base per-pupil cost varied from $3,395 to $4,113 with a raw average across districts of $3,766 and a statewide average of $3,727. The regional index ranged from 1.05 to 1.94, with raw and statewide averages of 1.69 and 1.46. The economies of scale index values went from 1.00 to 2.75 with raw and state averages of 1.24 and 1.42, respectively. The student needs index ranged from 1.000 to 1.91 with raw and state averages of 1.35 and 1.39. The compensatory adjustments for the old standards ranged from 0.23 to 2.81 and averaged 1.23 across districts and 1.26 statewide. Finally, the compensatory adjustment indices for the new standards ranged from 0.25 to 2.96 with raw and statewide averages of 1.29 and 1.31, respectively.

The final four columns of the table show both statewide current per-pupil spending in 2016-17 and averages associated with the funding adjustments projected to all districts. The statewide current spending per-pupil was calculated by the authors to be $9,333. Applying the regional, scale and student needs adjustments to the base yields a per-pupil cost that ranges from $5,199 to $28,094, with a raw average across districts of $10,574 and statewide weighted average of $10,433. Also including funding adjustments that would allow all districts to achieve adequacy as defined by the old standards (an average of 90 percent of students scoring in KAP categories 2, 3 or 4 on the ELA/math assessments) would cost between $4,940 and $38,405 per pupil, $12,964 on average across districts, and an average of $13,204 statewide. Finally, using the new standards (an average of 60 percent of students scoring in KAP categories 3 or 4 on the ELA/math assessments) would cost between $5,303 and $40,455, with district-level and statewide averages of $13,620 and $13,767, respectively.

[7] Using the old state standard, the proficiency threshold defined by the authors is average of 90 percent of students scoring in KAP categories 2, 3 and 4 on the ELA and math assessments, while the new state standards for proficiency dictate that there would be an average of 60 percent of students in KAP categories 3 and 4 on the two assessments.

Table 3 – Average, Minimum and Maximum of Cost Indices and Per-Pupil Costs for Kansas Districts (2016-17)

	Base Per-Pupil Cost (95% Graduation)	*Regional Index*	*Economies of Scale Index*	*Student Needs Index*	*Compensatory*		*Current Spending and Adequate Per-Pupil Costs*			
					Old Standards	*New Standards*	*Current Per-Pupil Spending (2016-17)*	*Projected Per-Pupil Costs - Regional, Scale and Needs Adjustments Only*	*Adequacy Per-Pupil Costs - Old Standards*	*Adequacy Per-Pupil Costs - New Standards*
Raw Average	$3,766	1.69	1.24	1.35	1.23	1.29		$10,574	$12,964	$13,620
Weighted Average	$3,727	1.46	1.42	1.39	1.26	1.31	$9,313	$10,433	$13,204	$13,767
Minimum	$3,395	1.05	1.00	1.00	0.23	0.25		$5,199	$4,940	$5,303
Maximum	$4,113	1.94	2.75	1.91	2.81	2.96		$28,094	$38,405	$40,455
Projected adequate per-pupil costs calculated by reviewer.										

Using the figures upon which Table 3 is based (Technical Appendix E), the authors derive aggregate statewide cost figures that show current (2016-17) per-pupil spending to be $9,313 (Table 4). Accounting for the differential effects of the cost factors would require a per-pupil cost of $10,419 or $5.103 billion statewide (a 9.7 percent increase over current spending). Under Scenario A, which assumes the old standards (average of 90 percent of students at KAP levels 2, 3 or 4 in ELA/math) the per-pupil and statewide costs increase to $13,144 and $6.438 billion, respectively (a 38.4 percent increase). Under the new standards (average of 60 percent of students at KAP levels 3 or 4 in ELA/math) the per-pupil and statewide costs would increase to $13,717 and $6.719 billion, respectively (a 44.4 percent increase).

Table 4 – Overall Necessary Investment in Statewide Spending to Support Educational Adequacy in 2016

	Cost Estimate ($)	***Absolute Increase Over Current***	***Relative Increase Over Current***	***Per Pupil Cost Estimate ($)***
Current K-12 Spending	$4.652 billion	n/a	n/a	$9,313
No compensatory support	$5.103 billion	$0.451 billion	9.70%	$10,419
Compensatory support for Scenario A	$6.438 billion	$1.786 billion	38.40%	$13,144
Compensatory support for Scenario B	$6.719 billion	$2.067 billion	44.40%	$13,717

Discussion

The general impression I have of the study by Taylor et al. (2018) is that it represents a quality piece of work which has been thought through and implemented carefully. Specifically, the work demonstrates a rigorous implementation of a stochastic cost frontier analysis to investigate the cost of providing educational adequacy in Kansas. Moreover, the results of the study tell a qualitatively similar story to that of the previous cost function study. The documentation of the research steps is mostly clear, but there are some places in the text that could use some additional detail. In addition, the report was replete with many typos that could have been easily corrected prior to submission through a basic editorial review of the text and table figures. Below, I provide some discussion surrounding key concerns that arose over the course of my review.

Estimation the Funding Adjustment for Scale of Operations

A key concern I have pertains to the estimation of cost related to scale of operations. The results in Table 2 pertaining to the estimated funding adjustments for scale of operations deserve further investigation. Here, we find that the index ranges from 1.00 to 2.75. Figure 2 shows a scatter plot of current per-pupil spending and adequate per-pupil cost in 2016-17 (from report Figure 11). The corresponding text states:

> "When comparing the actual 2016-17 spending per pupil as compared to the generated cost estimates we see a U-shape for the cost estimates the mimics a shape in which the

tails of the U have a steeper slope than that of the actual 2016-17 spending. This can be observed in the figure below. This implies that the actual 2016-17 spending per pupil does not account as well for economies of scale as the generated cost."

I would argue that this contention is not entirely correct. What is concerning is the large upswing in projected per-pupil cost at higher enrollment levels. In general, cost curves that depict per-unit costs tend to decrease as the scale of production increases. This is because total costs associated with fixed inputs (i.e., those that do not vary or are less responsive to production scale) can be spread out over a larger number of units, better known as economies of scale.

Figure 2 – 2016-17 District-Level Current Spending and Adequate Cost Per Pupil

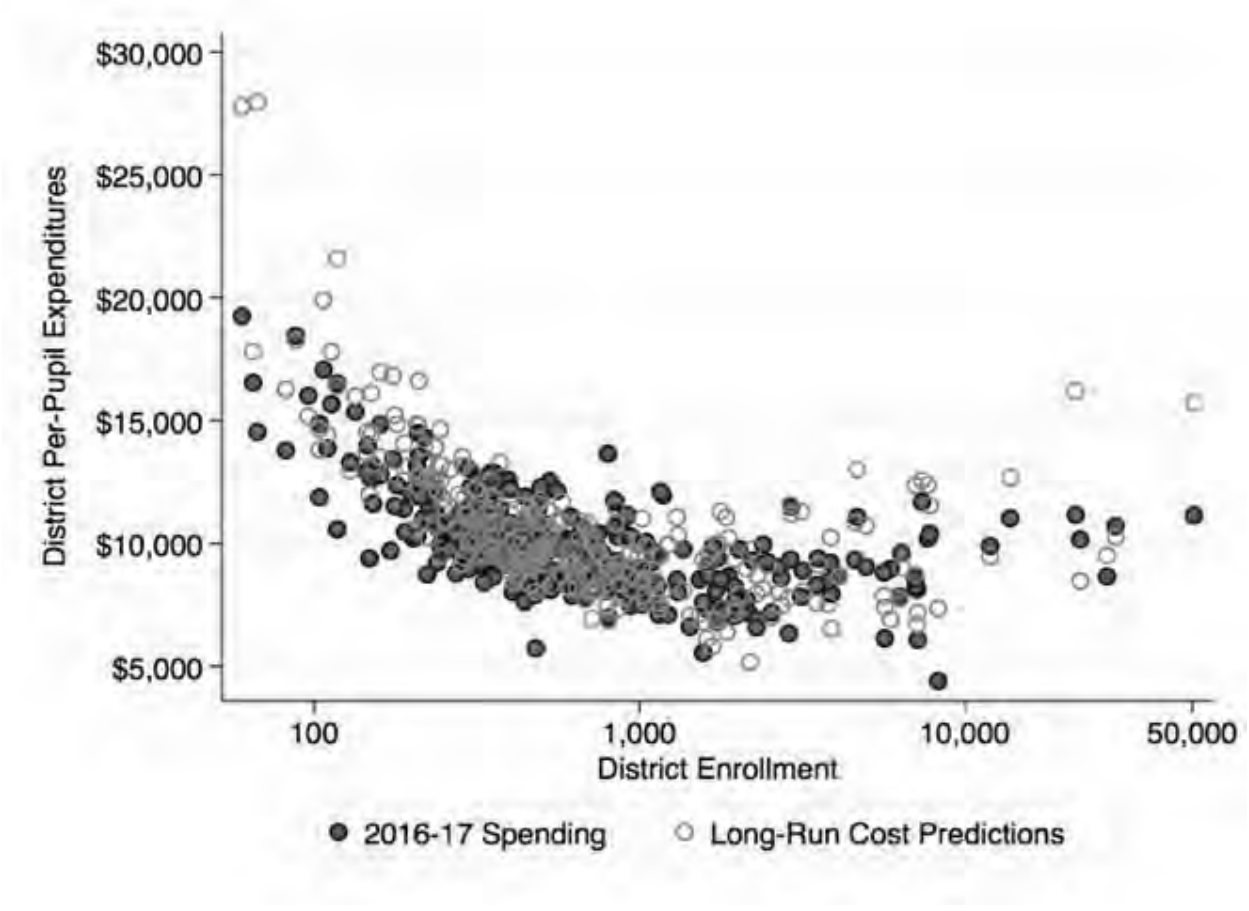


Figure copied from Figure 11 of Taylor et al. (2018).

Indeed, in educational production we often see some increases in per-student costs after a certain level of enrollment, however, the suggested funding adjustments at higher enrollments in this study are quite aggressive. In my opinion, this result is more of a direct consequence of the functional form of the cost model that was run. Specifically, the model incorporated a quadratic enrollment term in order to estimate a curvilinear relationship between enrollment and cost. However, it could be argued that this modelling decision is overly restrictive and responsible for the close to symmetric scale funding adjustments around the size associated with the minimum scale funding adjustment. To see this, consider Figure 3, which simply plots the estimated scale index values by the log of enrollment (note that the model used log enrollment and log enrollment squared). Note that from the minimum

enrollment the function decreases and eventually reaches a minimum in the range 3,750 to 3,950 students (see figures in Technical Appendix D of the report). At enrollments above 3,950, the scale index increases in a symmetric fashion and tops out at 1.97[8] so that larger districts would be funding at about twice the level as otherwise similar districts in the minimum range mentioned above. This is in contrast to research that finds economies of scale to be present up until approximately 2,000 to 4,000 students (Andrews, Duncombe & Yinger, 2002). While there is some evidence that cost may increase for larger districts, this has been associated with the interaction of poverty and student density (Kansas Legislative Post Audit Division, 2006). Moreover, while these factors are both most often correlated with enrollment, both poverty and density were already controlled for in the model run by the authors.

Figure 3 – Estimated Economies of Scale Funding Index by Enrollment for All Districts

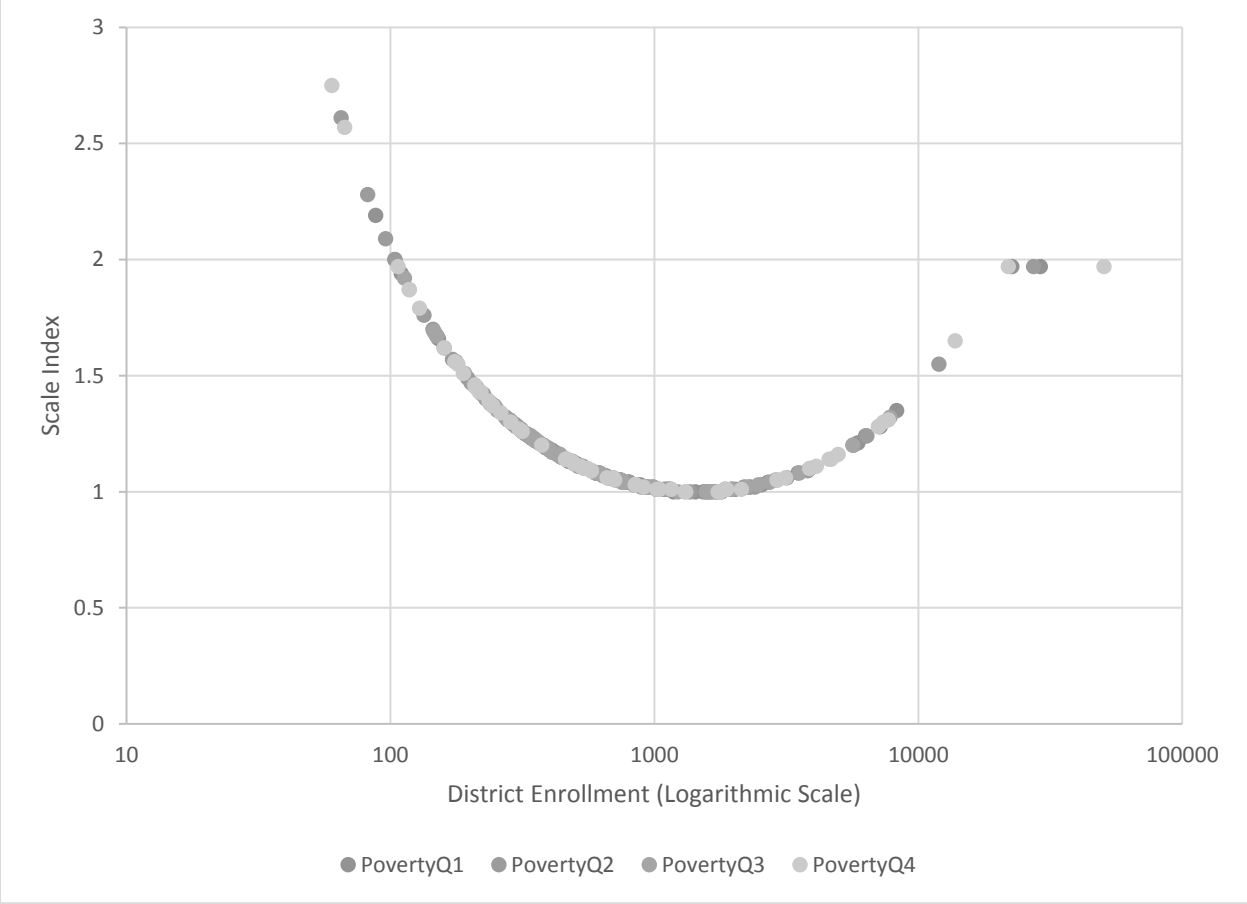


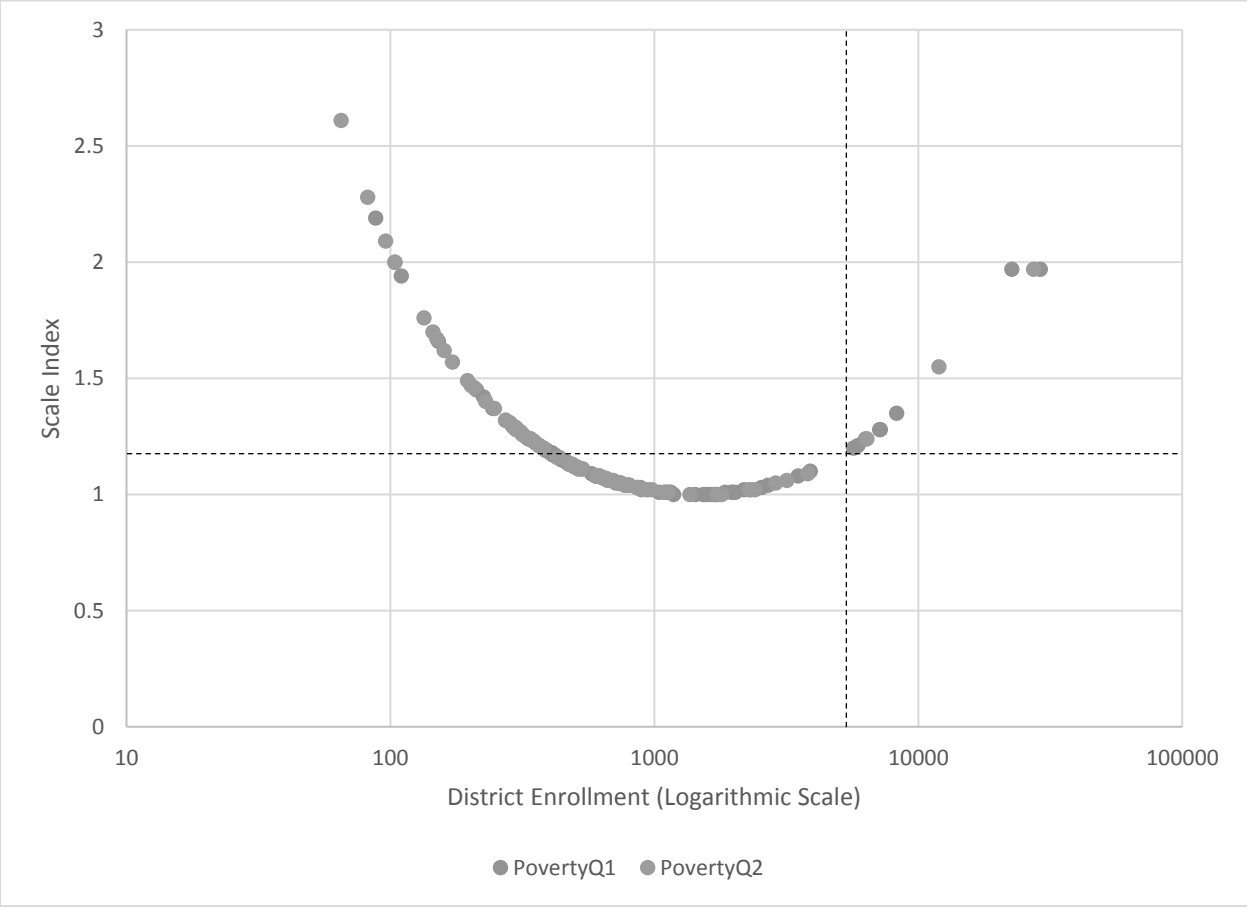
Figure derived from data in Technical Appendix E.

It is also somewhat concerning that there are many relatively low-need but large districts that appear at this upper end of the enrollment range and would greatly benefit from the aggressive scale funding adjustments. Figure 3 includes different colored plots for districts according to the quartile of the 2016-

[8] Note, I believe this maximum was imposed by the authors through top-coding enrollment for four districts that were larger than Kansas City (21,937 students). See page 85 of the report.

17 statewide poverty distribution in which they belonged.[9] However, Figure 4 provides a more readable diagram, which only graphs those less needy districts in the lowest two quartiles of student poverty (i.e. the bottom half of the statewide distribution of district poverty). As an example of some of the implications of the suggested scale adjustment, consider the plotted points in the upper right portion of the chart. This includes 38 districts that are evenly split between the first and second poverty quartiles. The minimum scale index value for the full group is 1.20, while 5 are above 1.35, and 3 assume the maximum scale adjustment of 1.97.

Figure 4 – Estimated Economies of Scale Funding Index by Enrollment for Lower-Poverty Districts (Poverty Quartiles 1 and 2)



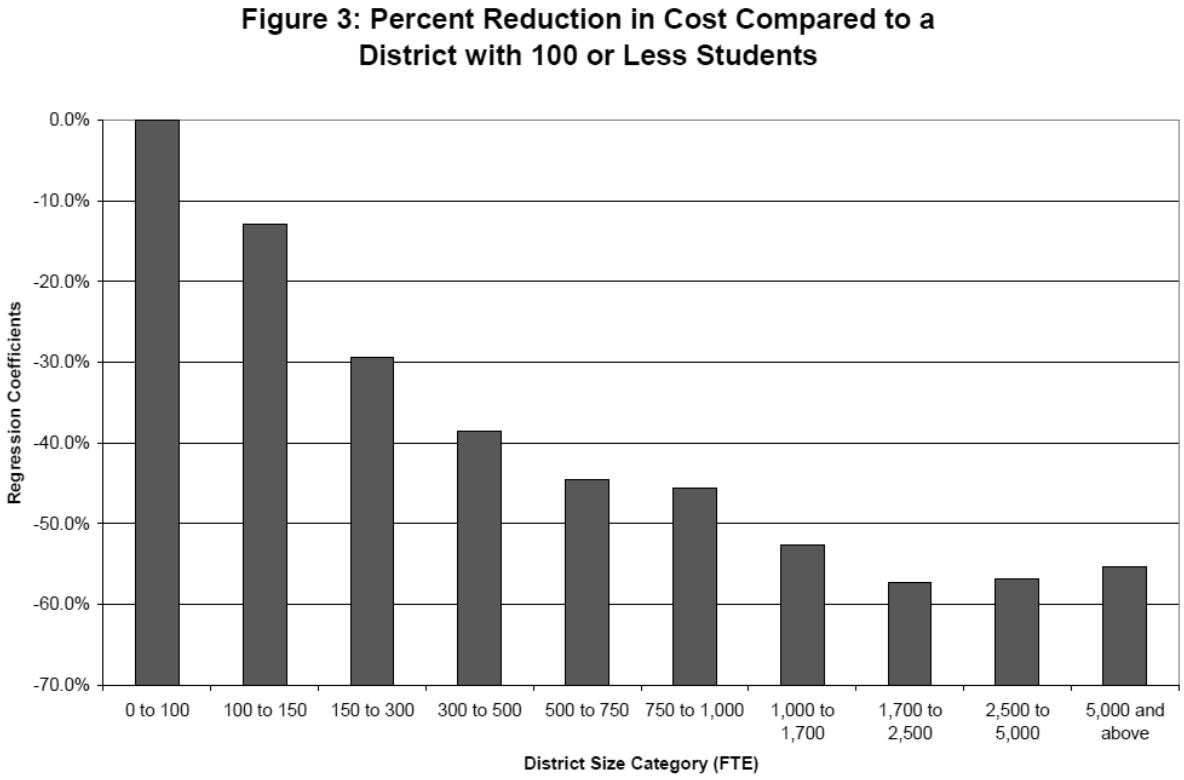
In turn, it seems that the aggressive increase in the suggested scale funding index with respect to larger district enrollments was driven by the way functional form in which enrollment was accounted for in the model specification. Importantly, I do not see anything wrong with the estimated funding adjustments for lower enrollment districts (i.e., those with enrollments that are smaller than those associated with

[9] The definitions of the poverty quartiles are as follows: Quartile 1-Less than 27 Percent; Quartile 2-Between 27 and 35 Percent; Quartile 2-Between 35 and 46 Percent; and, Quartile 4-Greater than 46 Percent.

the minimum scale index value). Rather, it is the large increase in scale index values for enrollment levels above this point that is of concern.

Fortunately, there is a very simple way to address this issue. Specifically, one can empirically try to estimate the model that specifies enrollment using a different functional form or not restricted the spending/cost relationship to assume any particular form at all. Specifically, the researchers could follow a similar approach to that taken in the study by LPA (Kansas Legislative Post Audit Division, 2018) by including discrete indicators of district enrollment categories. The LPA study included nine such indicators, which produced the expected relationship as shown in Exhibit 5. Here, the smallest districts proved to be the most expensive on a per-pupil basis (all other things equal), with per-pupil cost declining until the 1,700 to 2,500 student category, at which point costs rise slightly. Note that inherent in the strategy is the top-coding of enrollment (at 5,000). However, while enrollments were top-coded in the study by Taylor et al. (2018), this alone would not likely solve the specification problem encountered (i.e., the quadratic enrollment term forces the enrollment-cost relationship to be parabolic so that the cost function must increase and may do so dramatically).

Exhibit 5 – Cost Adjustments by Enrollment Category as Estimated in Kansas Legislative Post Audit Division (2018)



As a practical matter, the researchers should have attempted to calculate the additional costs associated with providing the scale funding adjustments for districts above a given threshold enrollment level (e.g., above 5,000).

Hold Harmless Funding and Formula Phase-In

In describing the application of the estimated per-pupil base and various funding adjustment indices (regional, scale, student needs and compensatory) the authors are very clear that their calculations maintain the actual funding levels for those districts that are already meeting or on target to meet the outcome targets (i.e., these districts are held harmless):

> "Districts that are currently outperforming the thresholds and those growing faster than necessary to reach the targets within five years are held harmless in this calculation, so that the compensatory support estimate includes the funds required to at least maintain current levels of annual progress in all districts." Page 65 (Taylor et al., 2018)

Unfortunately, the authors make no effort to calculate at what cost implementing this hold-harmless decision would come. In addition to a monetary cost in terms of funding districts at a level that is *more* than is deemed necessary per the cost model results, effectively funding inefficiency, hold harmless arrangements also undermine the equity intent of an adequacy-based funding formula.

This is not to say that providing some degree of hold-harmless for at least a temporary period is unwarranted. To the contrary, it would be irresponsible to require those districts with adequacy projections that are lower than current spending to switch over to a smaller funding allocation overnight. This could result in severe uncoordinated shocks to the delivery of important education programs and services. To this end, previous studies have discussed how district support through hold-harmless provisions might be gradually phased out as part of the formal plan to phase in a new funding formula (Chambers et al., 2008a,b).

The authors do nothing to address this, which suggests that the suggested hold-harmless provision was perhaps intended to be a permanent fixture. Indeed, they do make brief mention of a phase-in, but do not include anything about the hold-harmless provision included in their estimates. In any case, regardless of the intended permanency of the hold-harmless provision, the costs associated with this need to be calculated and reported.

Modelling Inefficiency

As discussed above, the model attempted to both control for technical (in)efficiency both directly and indirectly. Specifically, a stochastic cost frontier model is designed to estimate how far of the minimum cost frontier each district is. In addition, indirect measures of efficiency were also included in the model specification with the following results:

Table 5 – Model Estimates of Efficiency Factors

Variable	***Estimates of Coefficients and Standard Errors***
Herfindahl Index, log	0.797*** (-0.249)
Border metro	2.320*** (-0.372)
% Owner occupied	7.293*** (-1.321)
% Over 60	-2.316 (-1.496)
% College	-12.06*** (-1.542)
Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1 Results taken from Table 20 in Taylor et al. (2018).	

The first two variables are the Herfindahl index (a measure of concentration of schools in the education market) and whether a district is located in a district that spans a state border. The resulting coefficients were in line with findings from previous research; less market competition is associated with lower efficiency and greater spending. The other three variables, the percent of owner-occupied houses, percent of population over the age of 60, and the percent of population with at least a bachelor's degree are all variables that indirectly measure the degree to which public institutions (such as schools and districts) are monitored and held accountable. While the percentages of the population that is over 60 and with a bachelor's degree yielded model point estimates that coincided with expectations (i.e., they were associated with higher efficiency and lower spending), the percent of owner-occupied houses produced an effect that was the opposite of what would be expected. The explanation for this finding was that it may represent spending on outcomes that, while valuable (especially perhaps to home owners), were not included in the model and therefore considered inefficient. I do not doubt this as a possible explanation, however, I am wondering if this finding poses more of a challenge to the conventional wisdom and our expectation that this coefficient should be negative. Perhaps we should only expect it to be negative conditional on including all pertinent outcomes in our model.

In addition, the authors could have included more about the efficiency estimates. Specifically, while Finding #1 provides the distribution of cost efficiency estimates, formal reporting of the results of a significance test would be most welcome. The authors mention in footnote 11 that cost efficiency was estimated using the method suggested by Battese and Coelli (1995). In addition, the text mentions that inefficiency (termed the one-sided variable function) was modeled as a linear combination of five indirect efficiency measures assuming the one-sided error follows a half-normal distribution. I am wondering if the authors experimented with better understanding the potential heterogeneity of efficiency across districts.[10]

Validity Checks

As mentioned in the previous review of the Kansas costing-out studies by Augenblick & Myers and the Kansas Legislative Post Audit Division (Levin, 2018), it is important to run validity checks on the results of a costing out study. One type of validity check described in that review was to analyze the relationship between the predicted shortfall in funding and student outcomes across districts. The idea is as follows. In order to provide an equal opportunity for all students to achieve a state's educational goals adequate levels of funding must be provided in an equitable manner. In turn, determining how funding should be distributed to districts is one of the fundamental purposes of a costing-out study.

In turn, it is important to validate the results of a costing-out study by evaluating the relationship between the projected additional funding necessary to provide an adequate education and the outcomes such as student achievement (adequate cost). As stated in the earlier review:

> "If the model is working as intended so that adequate funding is provided in an equitable manner that affords all students an equal opportunity to achieve regardless of their needs or location, then we should see a systematic relationship between a

[10] For example, the Stata *frontier* procedure allows the user to specify the one-sided inefficiency error to follow a truncated normal distribution and model the average efficiency with covariates (see entry for frontier in Stata manual, pages 9-10).

district's relative need (how much more/less they need to provide a sufficient education) and student outcomes such as achievement on standardized tests."

Unfortunately, the study by Taylor et al. (2018) did not perform such a check. In an effort to better understand the validity of their results, I have taken the liberty of running this check following an analysis similar to that used for other large-scale costing-out studies in New Mexico (Chambers et al., 2008a) and New York (Chambers et al., 2004a; Chambers, Levin & Parrish, 2006). The analysis involved first calculating the funding shortfall or *Adequacy Gap* for each district. This measure is the relative difference between the projected adequate per-pupil cost and actual per-pupil spending defined as follows:

(2) Adequacy Gap = Adequate Per-Pupil Cost / Actual Per-Pupil Spending

Clearly, values that are greater than 1.00 indicate that the district needs more than it is currently receiving to provide an adequate education (i.e., there is a relative shortfall in funding), while values that are less than 1.00 imply that the district is getting more than it needs to achieve adequacy (i.e., there is a windfall in funding).

To facilitate this analysis, I first required a measure of actual current expenditure per pupil, as I did not have the study data at my disposal. To this end, I obtained the most recent (2015) district-level fiscal data available from the U.S. Census Annual Survey of Public School Finances or "F-33" data and used the Consumer Price Index (CPI) for the Midwest states to inflate the dollars to 2016 (the same year as the adequacy projections calculated by Taylor et al. (2018)).[11] However, to make the current expenditures from the F-33 compatible with the current expenditure definition the authors used with the Kansas state fiscal data, I removed spending on transportation and food. The calculated statewide average current spending per-pupil was $9,266, or less than one percent lower than the $9,333 calculated in the study using KSDE fiscal data.[12] The per-pupil adequacy costs for districts were derived from the figures in Appendix E of the author's study.

Along with the district-specific ratios of adequate cost to actual spending, the analysis required student outcomes. I therefore obtained publicly-available data from the Kansas State Department of Education on school-level percentages by performance level categories 1 through 4 on the KAP ELA and math assessments for grades 3 through 8 and 10.[13] These percentages of students within each performance level were then averaged across grade level and schools within each district. Finally, two sums of the district average percentages were calculated:

1) Percentage of students scoring at performance level categories 2, 3 and 4 (old standard)
2) Percentage of students scoring at performance level categories 3 and 4 (new standard)

[11] To inflate the F-33 figures from 2015 to 2016 dollars, I used the CPI for all urban consumers in the Midwest states (series CUUR0200SA0 available here: https://data.bls.gov/pdq/SurveyOutputServlet?data_tool=dropmap&series_id=CUUR0200SA0,CUUS0200SA0).

[12] While the current expenditure figures I derived from the F-33 data are on a statewide average very close to those calculated by Taylor et al., it seems that the omission of food and transportation may have taken out too much spending given the large numbers of districts with calculated adequacy gaps that fall below 1. Nevertheless, the metric should still serve as a general measure of relative need for funding for our purpose.

[13] These data can be downloaded at: http://ksreportcard.ksde.org/assessment_results.aspx?org_no=State&rptType=3.

The analysis itself involved generating the scatter plots in Exhibits 5 through 8. The graphs plot (on the y-axis) the district-level average percentages of students across grades who are scoring at level 2 and above or at level 3 and above, respectively, on the KAP ELL and math assessments against district funding shortfall. Each plotted point (circle) represents a school district with the size proportional to its enrollment. The downward sloping line shows the pupil-weighted relationship between student outcomes and funding shortfall. The horizontal dotted line represents the target rate that the study by Taylor et al. (2018) used as proficiency targets to be achieved by 2030 under the old (Scenario A) and new (Scenario B) standards (i.e., 90 percent of students performing at level 2 or above and 60 percent of students performing at level 3 or above, respectively).

The scatter plots tell a consistent story on several fronts. First, the relationships between funding shortfall and student outcomes prove to be negative. That is, achievement on the state's standardized ELA and math tests tend to be lower the larger is the relative need for funding determined by the study performed by Taylor et al. (2018).

Exhibit 5 – District-Level Percentages of Students Scoring at Level 2 or Above on KAP ELA by Funding Shortfall (2016-17)

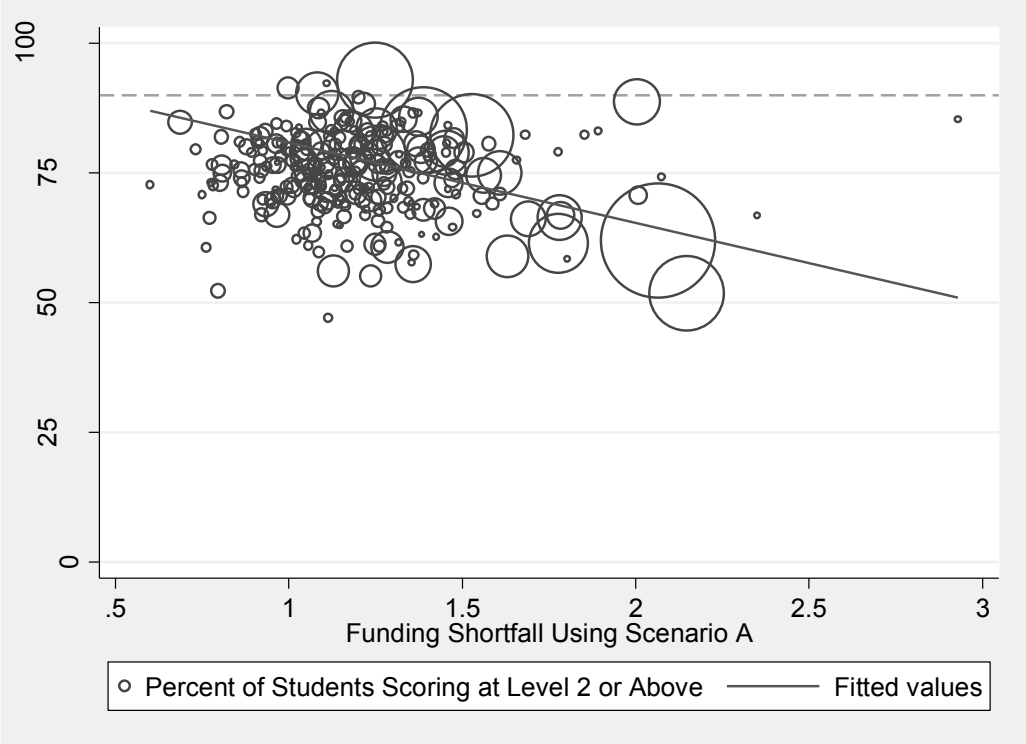


Exhibit 6 – District-Level Percentages of Students Scoring at Level 3 or Above on KAP ELA by Funding Shortfall (2016-17)

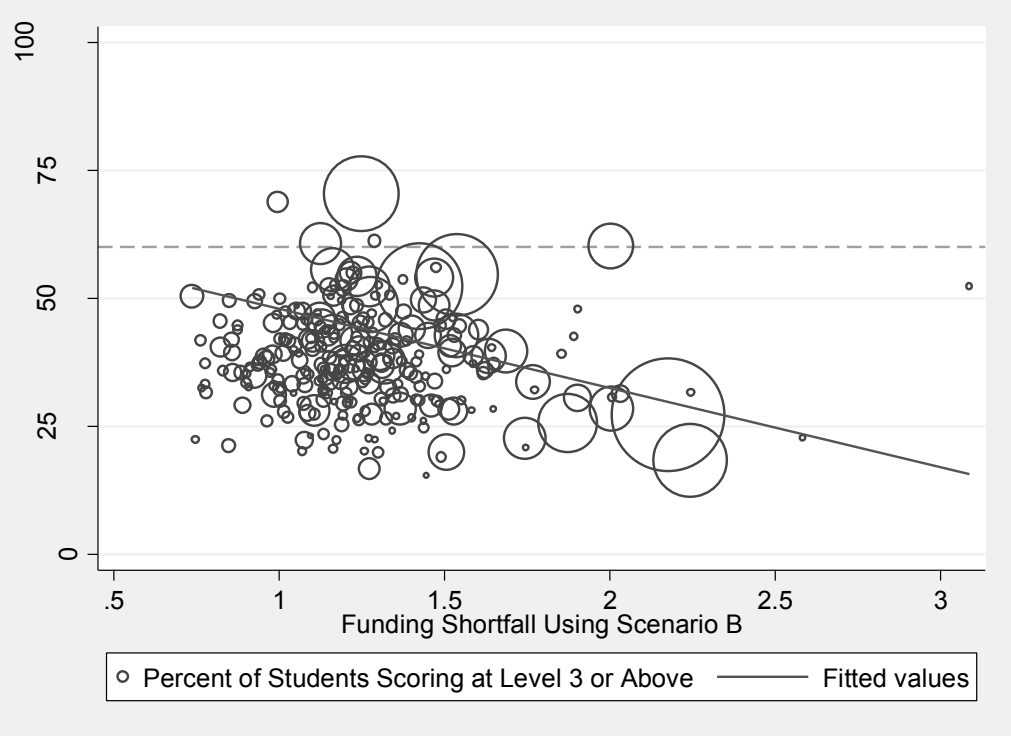


Exhibit 7 – District-Level Percentages of Students Scoring at Level 2 or Above on KAP Math by Funding Shortfall (2016-17)

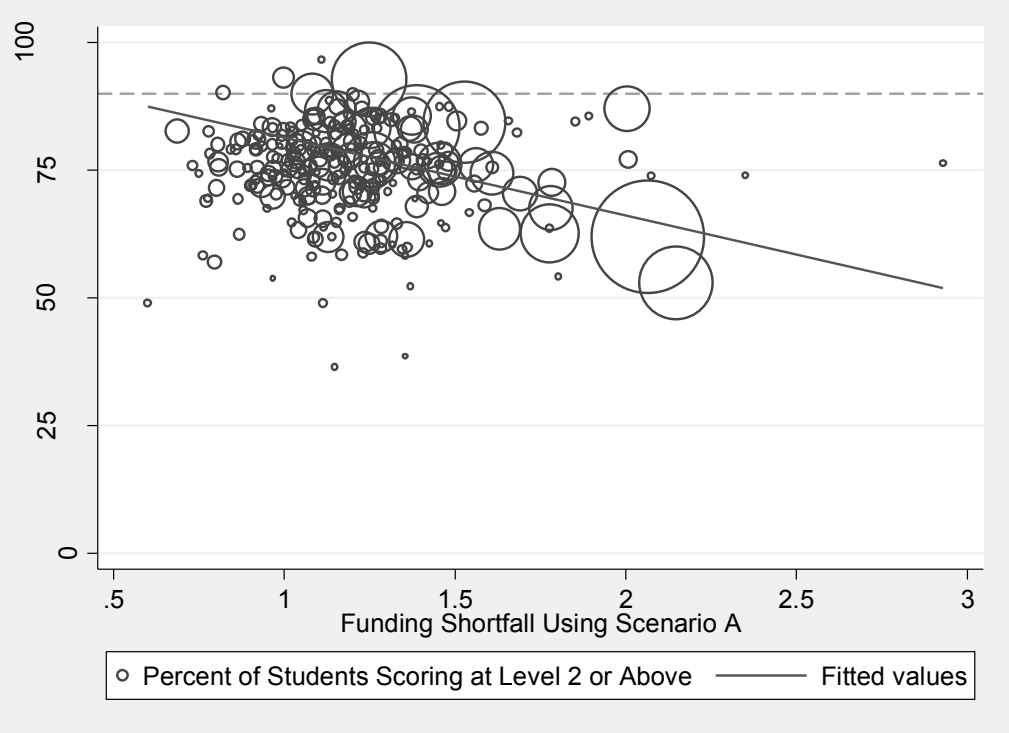
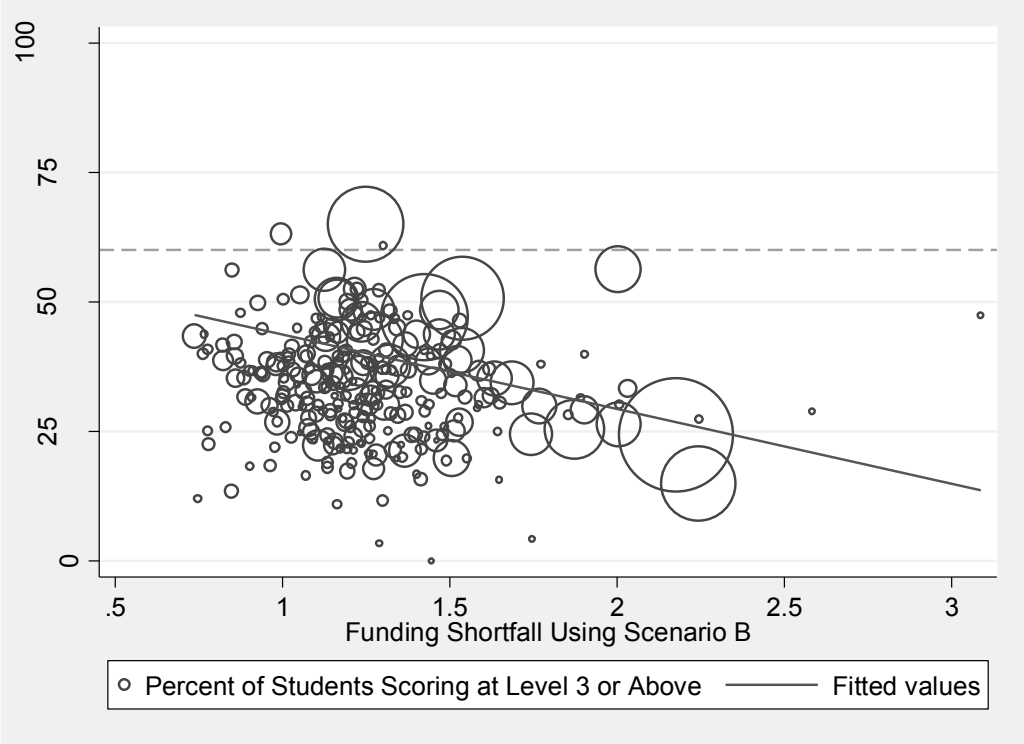


Exhibit 8 – District-Level Percentages of Students Scoring at Level 3 or Above on KAP Math by Funding Shortfall (2016-17)



This finding is reinforced by the pupil-weighted correlations between funding shortfall and outcomes presented in Tables 6 and 7. The correlations range from -0.5360 to -0.4427 and all are statistically significant ($p<0.001$). In turn, this provides validation for the study findings. Second, there are few districts that are currently meeting the outcome threshold as defined by either the old or new standards. Those districts that are coming close to meeting the threshold tend to have smaller funding shortfalls. Third, bigger districts tend to have larger funding shortfalls. However, note that this latter finding is likely driven at least in part by the scale of operations cost index issue put forth above.

Table 6 – Correlation Between District Funding Shortfall and Average Percent of Students Scoring at Level 2 or Above on KAP ELA and Math Assessments

	Percent Scoring at Level 2 or Above – ELA	***Percent Scoring at Level 2 or Above – Math***
District Funding Shortfall	-0.5360	-0.5422

Table 7 – Correlation Between District Funding Shortfall and Average Percent of Students Scoring at Level 3 or Above on KAP ELA and Math Assessments

	Percent Scoring at Level 3 or Above – ELA	***Percent Scoring at Level 3 or Above – Math***
District Funding Shortfall	-0.4584	-0.4427

Translating National Curve Equivalents to Proficiency Rates

One of the key pieces of documentation that I found missing from the study was an explanation of how the National Curve Equivalents translate into proficiency rates on the KAP assessments. A considerable amount of thought (indeed a whole chapter of the study) was devoted to considering the Rose standards and how these could be crosswalked to measurable student outcomes. Thresholds of proficiency on the KAP assessments were chosen based upon a review of 1) the performance of high achieving districts (i.e., those at the 90th percentile of performance), 2) the State's ESSA plans, and 3) historical performance in periods where the State's constitutional obligation to adequately fund schools. The study also provided a good description of conditional National Curve Equivalent (NCE) measures, which were used as one of two key student outcome measures in the stochastic cost frontier model. However, there is no description of how the cost estimates associated with the NCE measures were translated into the KAP performance thresholds in order to calculate the compensatory costs under Scenarios A and B. This is not to say that the authors did anything wrong here. Rather, it is totally unclear how this was done.

4 – Comparing the Results of the Cost Function Studies

A logical question to ask is how might the results of the two cost function studies (Kansas Legislative Post Audit Division, 2006; and, Taylor et al., 2018) compare. Furthermore, how can any differences in the main findings of these studies be explained. The following section attempts to shed some light on these questions using simple statistical analysis and details from these works.

An obvious place to start is to compare the adequate per-pupil costs projected for districts in both studies. The additional costs to achieve adequacy reported by the two studies are included in both absolute and relative terms in Table 8. Unfortunately, a direct comparison of these figures is not all that useful due to several factors. First, the studies were performed on data that differed in age by 10 years and the value of the dollar has changed greatly over this period (i.e., inflation erodes the value of the dollar over time). However, that is easily addressed by simply inflating the figures from the older study. This transformation was done by applying a ten-year inflation rate from 2006 to 2016 (18.8 percent) derived from the same CPI data mentioned above to the $399.3 million necessary increase in funding reported in the LPA study (Kansas Legislative Post Audit Division, 2006).[14] The third column of the table shows that the $399.3 in 2006 dollars inflated to 2016 would be $475 million.

However, even after inflating the cost figure from the older study the direct comparison of figures between the two studies may not be appropriate. First, the older cost study excluded a portion of federal funding that could be used to support base, at-risk, and bilingual education in order to avoid a situation that could be interpreted as supplanting. Specifically, they excluded a total of $205.5 million from their adequacy calculations in 2006 dollars, which would be equivalent to $244 million in 2016 (using the same Midwest CPI mentioned above). Adding back the 2016 equivalent of the federal dollars excluded from the calculation in the older study provides a more appropriate number with which to compare the figures from the two studies. The estimated additional cost from the LPA study inclusive of the federal dollars is $719 million or 15.5 percent higher than current K-12 spending.

[14] Specifically, I made use of the CPI for all urban consumers in the Midwest states (series CUUR0200SA0 available here: https://data.bls.gov/pdq/SurveyOutputServlet?data_tool=dropmap&series_id=CUUR0200SA0,CUUS0200SA0).

Table 8 – Measures of the Additional Cost to Achieve Adequacy (in Billions of 2016 Dollars)

	Current K-12 Spending in 2016 Dollars	*Kansas Legislative Post Audit Division 2006 Dollars*	*Kansas Legislative Post Audit Division Inflated to 2016 Dollars*	*Kansas Legislative Post Audit Division Inflated to 2016 Dollars With Federal Funding*	*Taylor et al. - Scenario A in 2016 Dollars*	*Taylor et al. - Scenario B in 2016 Dollars*
Necessary Absolute Increase (in Billions of 2016 Dollars)	$4.652	$0.399	$0.475	$0.719	$1.786	$2.067
Necessary Relative Increase	n/a	n/a	10.2%	15.5%	38.4%	44.4%
Includes Federal Dollars	√	×	×	√	√	√
Includes Food Service and Transportation	×	√	√	√	×	×

Another reason that the numbers are not comparable is the fact that the new study excluded spending on food services and transportation from their calculations, while the study by LPA did not. This spending would increase the additional cost suggested by the new study, however, deeper investigation into the how much this increase might be is outside of the scope of this review.

Other reasons that might account for the differences in the adequacy costs suggested by the two studies can be attributed to the differences in methodology. The following describes two such reasons that likely play a significant role in explaining differences between the findings of the two studies.

- Use of Input- versus Outcome-Based Methods – The older cost study implemented a combination of input- and outcome-based methods to calculate different types of expenditure. Specifically, this hybrid approach included input-based estimates of several categories of *spending* as opposed to *cost*, including expenditures on the base program, as well as special education and vocational education. Note that the estimates for this spending cannot be considered cost-based because outcomes and other factors such as student needs and scale of operations were not taken into account.

  As mentioned in the first review report (Levin, 2018), this resulted mixing results from an outcome-oriented approach that measured the *cost* of providing educational adequacy, with those of the input-oriented approach intended to get at the spending necessary to provide levels of programming and services regarded as minimally required by law or regulation. Moreover, the calculation of spending was erroneously based on districts with the lowest utilization of many types of staff and non-personnel resources in the name of "efficiency". In turn, the calculated spending for the core base program, special education, and vocational education by the older study underestimated the true cost of providing adequate educational services in these areas. In contrast, spending for both special education and vocational education were included in the cost estimates for the newer study. I would contend that this key difference in method likely accounts for at least a portion of the difference in the respectively findings.

- Differences in Student Outcome Measures – Both studies used different measures and thresholds of student outcomes to define adequacy. While the newer study made an attempt to approximate the old testing standards using the performance levels of the new assessment system, to the extent that the new standards and tests are more difficult one would expect the newer estimated costs of achieving adequacy to reflect this.

Despite the differences in the findings of the two independent cost studies, it is crucially important to acknowledge that the qualitative stories they tell are similar. That is, both studies point to a need for significant additional funding to support an adequate education in the state. To show this from a statistical perspective I have run an analysis of the pupil-weighted correlation between the district-level calculations of adequate per-pupil spending generated by the two cost model studies. The results of this analysis show that despite the differences due to the changes in school and district characteristics that may have changed over time and the methodological differences in how the figures were calculated there is still a strong relationship between the projected district-level adequacy costs per-pupil generated by the two studies. Table 9 lists correlation coefficients between the old and new cost

estimates equal to 0.7280 (Scenario A) and 0.7342 (Scenario B), which are both highly significant ($p<0.001$).

Table 9 – Correlations Between Projected District-Level Adequate Per-Pupil Costs from the Two Cost Studies

	Taylor et al. – Scenario A	***Taylor et al. – Scenario B***	***Kansas Legislative Post Audit Division***
Taylor et al. – Scenario A	1		
Taylor et al. – Scenario B	0.9957	1	
Kansas Legislative Post Audit Division	0.7280	0.7342	1

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To: Chairwoman Molly Baumgardner and members of the Senate Education Finance Committee

From: United Methodist Health Ministry Fund

Date: April 2, 2018

RE: ABC Program Background & Implementation Vision

Thank you for the opportunity to provide additional details to the committee on the Attachment Bio-Behavioral Catch-up (ABC) Program. As you know, ABC is a ten week targeted, manualized program delivered in the home with two additional assessment sessions (pre- and post- intervention). During each of the ten visits, the staff engage the parents and review very specific information with them focused on the four target areas below. The goal is NOT to "cover the required materials" but to engage the parents and to frequently reinforce their positive behaviors consistent with the 4 main targets of the ABC program:

1. Nurturance – attending to a child who has expressed a need;
2. Synchrony/Following the Lead – interactions follow the child's lead in play, neither passive nor intrusive;
3. Delight – words or expressions from the parent to the child expressing positive emotion;
4. Avoiding frightening behavior – rough handling, menacing or throwing, threatening behaviors.

ABC was initially developed by the University of Delaware through several randomized, controlled trials to address toxic stress in young children living in adverse environments. It has been in development there for over 18 years. During that time, the program has evolved and developed to the point where it is one of the **highest rated interventions** (and one of the only truly preventative programs) on the California Clearinghouse for Child Welfare (http://www.cebc4cw.org/program/attachment-and-biobehavioral-catch-up/).

Evidence-based intervention that reduces toxic stress and improves school readiness and student success

Research shows that the toxic stress caused by Adverse Childhood Experiences (ACEs) in early childhood has a major impact on the child's overall development—on school readiness and the ability to learn, on physical and mental health, and on other factors including the ability to exercise self-control. These deficits negatively affect a child's success both in the school setting and throughout adult life.

As an intervention to address adverse childhood experiences (ACEs), ABC has been shown to lead to increased parental sensitivity and responsiveness to child needs. Children who participated in ABC as toddlers were shown to have better receptive vocabulary than comparison children who did not participate.

Preschool children who receive ABC show more normal levels of cortisol and improved executive function, meaning they have improved their ability to regulate behavior and emotion. Science indicates that vulnerable children who have well-developed executive functioning and emotional regulation are

able to do well in school despite experiences of adversity. Executive functioning predicts literacy and math scores, and many teachers contend that competence in terms of executive functioning "is more important at school entry than knowledge of letters and numbers."

Attached is testimony of Dr. Glade Topham explaining the science behind this beneficial program; the testimony of one of the ABC Home Visitors; a letter from the staff at the University of Delaware, the founders of this program; and a letter from David Lindeman, spokesperson for the Kansas tiny-k programs.

Current Pilot & Proposed Plan

Currently, United Methodist Health Ministry Fund is coordinating a $2.4 million three-year project to provide the ABC intervention to 800 families in the northwest and southwest portions of the state, in Reno County, in Sedgwick and a portion of Butler Counties, and in Wyandotte County (mapped below). Other funders in this project are the REACH Foundation, Kansas Health Foundation, the Wyandotte Health Foundation, and Hutchinson Community Foundation.

With an investment of $10,560,000 from the state we estimate that 3300 high risk, vulnerable children and families could benefit from this program. This investment is an effective way to reduce adverse childhood experiences and improve school readiness and academic outcomes. A potential state investment implemented over the next three years will train 60 **c**oaches at 15 sites and cover program and evaluation costs.

The table below provides projections based upon the experiences of Kansas philanthropy in the current ABC pilot project.

Fiscal year	Costs	Sites	Trainers	Families Served
2019	$1.76M	Five	20	400
2020	$3.52M	Ten (five new)	20 (total 40)	1200
2021	$5.28M	Fifteen (five new)	20 (total 60)	1700
TOTALS	$10.56M	Fifteen by end of year 3	60	3,300

How to Implement the Proposed Pilot Project

The ABC program provides an evidence-based opportunity to help address equity issues as part of the school finance solution. The program can identify and divert children at risk from becoming students at-risk early in their life so they are better prepared to enter school and equipped for success.

With the help of the Kansas State Department of Education (KSDE) and the Kansas Department of Health and Environment (KDHE), the State has the opportunity to target children vulnerable to risk that, unaddressed, will increase future K-12 costs.

An appropriation to the KSDE supports the legislative response to target resources to the 25 percent of youth very early who may underachieve in school. As you can see from the cost proposal, 90 percent of the funding supports the parent coaches, materials, and evaluations. Because KDHE has the infrastructure to implement the program, KSDE should be directed to pass through the funds to KDHE to coordinate the ABC services for children the two departments jointly identify. KDHE's Family and Health Bureau is prepared to identify vulnerable, at-risk children and coordinate with KSDE on pilot location selection. The Family Health Bureau has top-notch data to supplement KSDE data and they have existing home visiting programs that can deliver the services in the most efficient and cost-effective manner to this hard to serve population.

Having launched and implemented the existing program, the United Methodist Health Ministry Fund is well-positioned to provide expertise, tools and technical assistance to KDHE and KSDE throughout the process.

Testimony to House Education Committee – January 29, 2018

Glade Topham, PhD, LCMFT – Program Director, Couple and Family Therapy Program, Kansas State University
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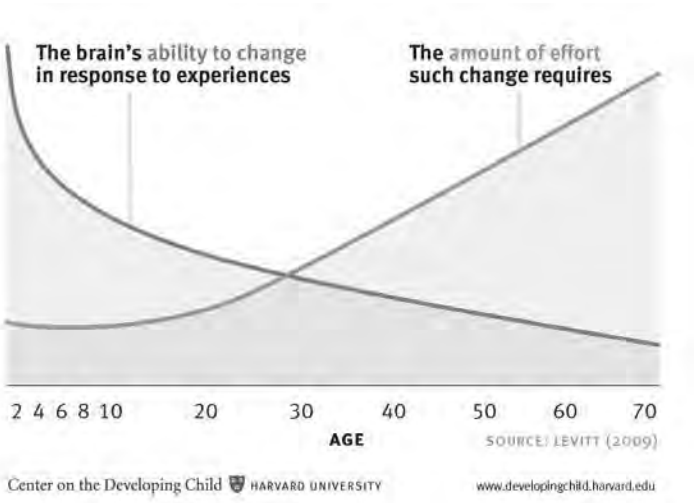
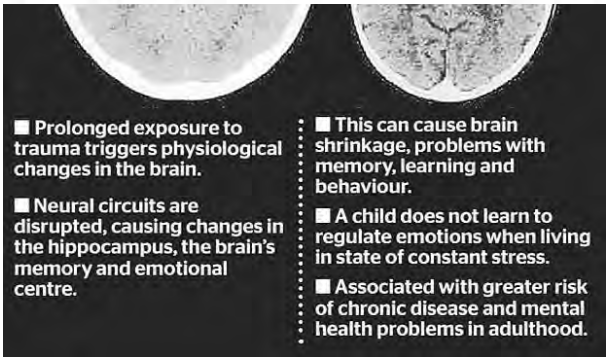


A focus of my work is striving to answer the question, "How do we help children at risk build foundations of healthy development preparing them for success in school and landing them on a path toward strong relationships and economic success?" We now have clear and consistent research regarding how to do just that.



Five important findings from science are important here.

1) As has been mentioned, children who experience multiple forms of adversity early in life without the buffering effects of at least one loving and nurturing caregiver are likely to struggle in school and to go on to experience a lifetime of mental, emotional, physical, and economic challenges. The figure to the right illustrates the effects of early adversity on the brains of young children (photo taken from http://www.reachingclarity.com/behavioral-health/abuse-emotional-neglect-and-toxic-stress-can-have-a-devastating-effect-on-children-brain/).

2) One area of the brain that is particularly vulnerable to early adversity is also key to children's school success, and that is children's **executive functioning.** Executive functioning refers to the ability to regulate behavior and emotion. It is sort of the control tower of our brains. It helps us engage in rule-based and goal-directed tasks that help children pay attention in class and resist distractions, complete challenging assignments, and following through on homework. Executive functioning also includes our braking system; it allows children to stop themselves from getting out of their seat in class, making outbursts in class, or from putting a pencil in the ear of the child next to them. Finally, executive functioning includes working memory which allows us to plan, prioritize, and problem solve. Science indicates that vulnerable children who have well developed executive functioning and emotion regulation are able to do well in school despite experience of adversity (Raver, 2004). Executive functioning predicts literacy and math scores (Raver, 2011) and many teachers contend that competence in terms of executive functioning "is more important at school entry than knowledge of letters and numbers" (Rimm-Kaufman, Pianta, & Cox, 2000).

3) Parents play a unique role in helping children develop executive functioning and other skills and abilities essential to school success (Shonkoff, 2011).
4) Focused intervention targeting the parent-child relationship can help vulnerable children develop executive functioning and other competencies required for success in school and in life.

5) The earlier we intervene, the more profound the impact we can have on children and their parents. The brain of a child in the first few years of life is relatively easy to influence; whereas, changing brain architecture becomes increasingly difficult as children age (Shonkoff, 2011).

Attachment and Biobehavioral Catch-up (ABC)

ABC is a brief preventative intervention that has been shown to help vulnerable children catch up in terms of brain development. It is an ideal program for a few reasons:

1) It is a brief intervention, whereas ABC is only 10 sessions, most other intervention targeting this population are long-term (some around 50 sessions).
2) ABC coaches do not have to have a master's degree or a clinical license to provide the treatment.
3) Training is relatively brief, 2 days of initial training followed by supervision.

ABC has been given the highest available rating for strength of research support from: The Substance Abuse and Mental Health Services Administration (SAMHSA), The Department of Health and Human Services, The National Child Traumatic Stress Network, And California Evidence Based Clearinghouse for Child Welfare. ABC has been shown to lead to increased parental sensitivity and responsiveness to child needs, (Bick & Dozier, 2013; Lind, Bernard, Ross, & Dozier, 2014). Children who participated in ABC as toddlers were shown to have better receptive vocabulary than comparison children who did not participate (Freedman et al., under review).

Executive Functioning

Research indicates 10 sessions of ABC significantly and positively impacts the executive functioning of vulnerable children. Follow up assessment when children were two to four years old indicate that the positive changes in executive functioning last (Lewis-Morrarty, Dozier, Bernard, Terraciano, & Moore, 2012). Children who participate in ABC between 6 and 24 months have better inhibitory control at age 3. Inhibitor control is children's ability to use their brake or restrain themselves from doing something that they want to do but know they should not do. (Lind, Bernard, & Dozier, under review).

Cortisol

Another important finding regarding ABC is its impact on children's cortisol. Cortisol a stress hormone that is an important indicator of brain regulation. Our cortisol levels are high when we wake up and low at bedtime; it is this downward slope during the day that helps us have energy in the morning and be tired at night. Maltreated or neglected children tend to have more of a flat line instead of a slope, affecting their alertness to succeed in school and affecting their sleep patterns (Bernard, Butzin-Dozier, Rittenhouse, & Dozier, 2010).

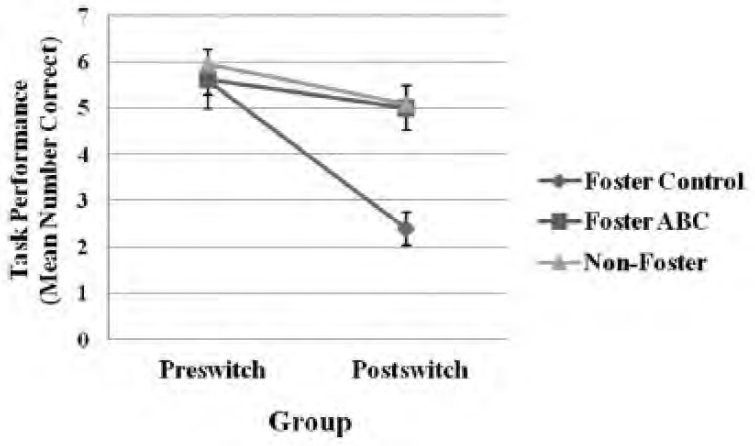


Figure 1. Child cognitive flexibility task performance by task type (preswitch, postswitch) and group (foster care control, foster ABC, nonfoster comparison). Error bars represent standard error of the mean. ABC = Attachment and Biobehavioral Catch-up. For interpretation of the references to color in the figure legend, the reader is referred to the web version of this article.

Children who participated in ABC had cortisol slopes after treatment that were similar to children who had not experienced early adversity; whereas, maltreated or neglected children who had received a comparison treatment showed little change in their cortisol production patterns. These findings held when assessed three years after treatment (Bernard, Hostinar, & Dozier, 2014; Dozier, Peloso, Lewis, Laurenceau, & Levine, 2008).

DEF is the comparison treatment which is in-home parent-education.

Reference

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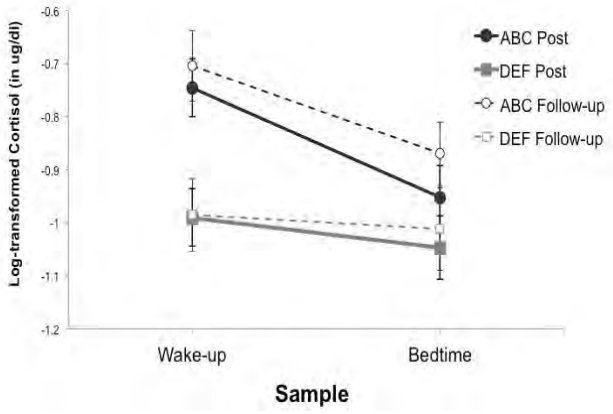

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HOUSE EDUCATION COMMITTEE – January 25, 2018

Lisa Dewees, Parent Coach – Northwest KS Substance Abuse Council, Colby, KS
lisad@nwksprevention.com 785.460.8177

My name is Lisa Dewees and I am a parent coach with the NW Kansas site of the ABC project, funded by the United Methodist Health Ministry Fund. Thank you for this opportunity to share with you the good things that are happening with the Attachment and Biobehavioral Catchup Intervention in the great state of Kansas. Our catchment area is 12 counties in the northwest corner of Kansas.

I will explain the processes of the ABC intervention for recruiting parents and some of the success stories that we have seen in the short time that the intervention has been running.

Our site has been building a referral network for the ABC intervention by building trusted relationships with Medical and Mental Health providers in our area. Once they see the content of the intervention, it fits nicely with the things they are working on with the families in their care. We have also seen the benefits in having a collaborative relationship with the Medical and Mental Health community because a more complete picture of the family need emerges. We also attend WIC appointment days at our County Health Departments. This has allowed us to uncover the most at-risk families in our area that are completely underserved and build trusted relationships.

Once we recruit a family, we begin a 10-week home visiting program in their home. Each visit is video recorded for supervision purposes, but also for use in coaching parents. At the conclusion of the intervention, a video montage of the 10 visits is shared with the parent to highlight all the progress that the family has made.

One family was referred to us by a partnering Mental Health provider. On the first home visit, Mom told me that she was completely desperate and if something didn't change, she was going to sign her parental rights away. She was receiving Mental Health services, but had no services in the home. During our visits, the first thing I noticed was that Mom began to 'Follow the Lead' with her child and enjoy it. By the 5th visit, Mom did something I had never seen, she reached out, picked up her child and offered nurturance. But, just as important, Mom began to see the progress in her own life. I asked Mom to share her experience in her own words:

> "*I can see the improvement, thinking back how close I was to giving up on J**** on a daily basis to now realizing he is just a little kid and to have reasonable expectations for him. I never would've learned that if it wasn't for all the help I've gotten from your program and EHS [Early Head Start]. Thank goodness you all came and helped when you did because I'm pretty sure I wouldn't have J****today if it wasn't for you guys.*"

The biggest triumph, however, is the fact that Mom opened her door to other services. To date, these are the services the family has received: Early Head Start, Early Intervention Services for speech and behavior, she enrolled in a parenting class, and is also taking the Play and Learning Strategies program offered by our agency.

To add to the success of this story, the young child in this home made a 40-point improvement on the ASQ:SE2, a social emotional screening tool. I personally have never seen that kind of improvement in such a short time.

I believe that these kinds of results are achieved because of the method of parent coaching that is unique to the ABC intervention. It uses 'In the Moment Commenting' that is both positive and instructive during play exchanges. Each parent coach is trained in the method and is required to participate in a yearlong certification process that includes group and private supervision offered by the University of Delaware. Personally, I have grown so much as a parent coach through the supervision process, and will miss the learning when the year is over.

I would like to leave you with one more success story:

A 20-year-old single mom came to us as a referral from the juvenile justice system. She had quite a chip on her shoulder during our early sessions. She cancelled often, and at times, I thought we would never finish. But, I could still see small gains she was making in learning to follow her child's lead. During one visit, we talked about the nurturance that Mom herself did not receive in her family. She said, "It was only tough love when I was growing up." I believe that she had no idea that nurturing was important.

At the end of the intervention, we watched the montage of all her successes, and she said, "I've been thinking, that this has been really good for J**** and I would like to do the other program offered by your agency." I picked my jaw up off the floor and said, "Of course, let's get you signed up for PALS (Play and Learning Strategies)." The other success? This Mom got a job at the end of the intervention. I believe it was due in part, to ABC building her confidence.

Thank you for your time and attention.

UNIVERSITY OF DELAWARE | College of Arts & Sciences
DEPARTMENT OF PSYCHOLOGICAL & BRAIN SCIENCES

Attachment & Biobehavioral Catch-up

March 23, 2018

To Members of the Kansas Legislature,

The Attachment and Biobehavioral Catch-up (ABC) intervention is a 10 session home visiting intervention developed to help parents provide sensitive care to their young children. Young children who have experienced early adversity especially need nurturing care when they are distressed, a responsive partner when they are not distressed, and non-intrusive, non-frightening interactions all the time.

When tested through randomized clinical trials, ABC has been found to result in enhanced behavioral and biological regulation relative to a control condition. More specifically, children who received the ABC intervention showed more secure attachments than children in the control group (Bernard et al., 2012). They showed more normative production of a steroid hormone, cortisol, than children in the control group (Bernard et al, 2015a), and these differences persisted at least three years after the intervention ended (Bernard et al., 2015b). They showed better impulse control when presented with a challenging task (Lind et al., 2017) and better language development (Freedman et al., in press) than children in the control group. Differences have now been seen in infancy, early childhood, and middle childhood, and cut across behavioral and biological domains.

The intervention has also been examined in several populations beyond the randomized clinical trials conducted by the University of Delaware. One small community-based randomized clinical trial found that families who completed ABC had lower scores on child abuse potential, parenting stress, and child internalizing and externalizing behaviors compared with families in a wait-list control condition (Sprang, 2009). In a second trial with new mothers in residential substance abuse treatment, those who participated in ABC showed more sensitive parenting behaviors than mothers in the control group (Berlin, Shanahan, & Appleyard Carmody, 2014). In addition, a study with 108 families across 5 training sites found significant pre- to post-changes in sensitivity (Roben, Dozier, Caron, & Bernard, 2017).

The ABC intervention is one of the few home visiting programs approved by the US Department of Health & Human Services for its Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program. ABC also is rated 1 on the California Evidence-Based Clearinghouse for Child Welfare scientific rating scale. The California

Clearinghouse independently reviews and disseminates information about evidence-based treatment for child welfare. This rating indicates that ABC is a program with the strongest research evidence among those rated. ABC is also rated as empirically supported by SAMHSA and the National Child Traumatic Stress Network.

We have several new, longer-term findings that we would like to draw your attention to:

1. Children whose parents received ABC were **better able to inhibit their impulses** when they were 3 years of age than children in the control group (Lind et al.). Children in the ABC group were less likely to touch an attractive toy when told not to than children in the control group.
2. Children whose parents received ABC have **higher receptive language skills** between 3 and 5 years of age than children in the control group (Freedman et al.).
3. Chilidren in the ABC group were more likely to have secure attachments than children in the control group. Secure attachment was, in turn, associated with a **steeper decline in body mass index (BMI) from age 2 through 4** (Bernard et al.).
4. When children were **8 years** of age (7 years after the intervention), children assigned to ABC showed more **normative brain development** in EEG patterns than children in the control group (Bick et al.).
5. When children were **9 years** of age (8 years after the intervention), children whose parents received ABC had **higher respiratory sinus arrhythmia (RSA) and lower heart rate at rest** than children in the control group. Higher RSA and lower resting heart rates are associated with better self-regulation (Tabachnick et al.).
6. There are widespread differences in methylation patterns across the genome as a result of ABC, as compared with children in the control group (Hoye et al.).

In addition to the above findings, we are collecting teacher reports about child behavior, child emotion regulation, and peer interactions for children 8, 9, and 10 years of age. We hope to follow these children who received ABC in infancy as they develop.

Thank you for your attention,

Caroline Roben
Director of ABC Dissemination
Assistant Professor of Psychological and Brain Sciences
University of Delaware

KU LIFE SPAN INSTITUTE AT PARSONS
The University of Kansas

March 22, 2018

Sen. Mollie Baumgardner
State Capitol, Room: 224-E
SW 8th & SW VanBuren
Topeka, KS 66612

Senator Baumgardner,

I am writing today in support of implementation and expansion of the Attachment Bio-behavioral Catch-Up (ABC) Program. This intervention strategy designed to strengthen the bond between young children and caregivers has an impressive base of research confirming its effectiveness.

The LSI/Parsons has more than 50 years of experience partnering with national, state, regional, and community partners in conducting research and providing training for professionals involved in service to young children and their families. Many of our projects have focused on early childhood services and training for adults providing those services. Currently, we have two training and technical assistance programs. One program supports individuals, programs, and agencies across the state to identify solutions to challenges and provide services to children with disabilities and their families, specifically IDEA Part C programs (tiny-k) and the second program provides training and technical assistance for child care providers, both in homes and centers.

The evidence-base for ABC has shown it to be effective in promoting normal stress hormone patterns, decreasing harmful development outcomes, supporting positive social/emotional development, and increasing positive adaptive behavior in children. Additionally, positive benefits have been demonstrated for adults, such as lower stress, lower abuse potential, and positive child relationships, when involved with this 10-week program.

I first became involved with the ABC program when approached by colleagues from the KU to support the implementation of ABC in a southeast Kansas home visiting program for at-risk children and families– early Head Start. Following this first experience, I supported expansion in additional programs for at-risk families in central Kansas. Finally, I have supported initial efforts in implementation of ABC in five tiny-k programs across the state. The tiny-k programs are our state programs providing early intervention services to children with disabilities, birth to age three, and their families. In each of these experiences positive outcomes have occurred.

Investment in the expansion of the ABC Program, by the State of Kansas, will yield positive outcomes for the state and brighten the future. The impact will result in decreased costs related to special and remedial education, judicial services, and child welfare/public assistance while positively impacting important social issues such as graduation rates, workforce skills, and health care cost.

Sincerely,

David P. Lindeman

David P. Lindeman, Ph.D.
Director and Senior Scientist

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TO: Senate Select Committee on Education Finance, Kansas Legislature

FROM: Dr. Lori T. Taylor & Jason Willis

DATE: ~~Wednesday, March 28, 2018~~ **Monday, April 2, 2018**

SUBJECT: **AMENDED** Follow-up Requests from Committee Members, Responses from Consultants

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On Monday, March 19, 2018 testimony was provided before the Senate Select Committee on Education Finance of the Kansas Legislature to present the *Estimating the Costs Associated with Reaching Student Achievement Expectations for Kansas Public Education Students: A Cost Function Approach* report. There were several follow-up requests from committee members. Each of those requests are captured below.

1. What effect would there be if the analysis observed a quadratic (non-linear) relationship of spending to outcomes compared to the current model which is a linear relationship?

2. What is the size threshold (of a school district) at which costs begin to increase?

3. What factors are included in the economies of scale index?

4. What is the difference between the maintenance and compensatory support scenarios?

5. The maintenance scenario contains a performance threshold of 0.50 NCE score and a 95% graduation rate. Is the 95% a statewide rate or the rate reached by each district?

6. Can the research team provide other cost estimates at various ELA/math passing rates?

7. Does the research team have examples of states that have created a 'minimum funding guarantee' for public education? What has been the impact of that legislative language?

8. Can the research team reproduce the map on page 80 of your report to identify the school district values in the northeastern corner of the state?

9. Can the research team produce the cost estimates for seven years?

10. What impact, if any, would removal of the KPERS spending have on the findings?

11. Can the research team expand upon the strategies that may be employed by the Legislative Post Audit (LPA) that further expands upon finding #9 in the report?

1. What effect would there be if the analysis observed a quadratic (non-linear) relationship of spending to outcomes compared to the current model which is a linear relationship?

   The research team re-ran the analysis assessing the impact of a quadratic or non-linear relationship of spending to outcomes and found that the squared terms were statistically insignificant, indicating that the relationship was not quadratic. Below are the coefficient estimates and associated significance tests generated from the re-run of the analysis.

LABELS	Baseline	Quadratic Outputs Model
Normal Curve Equivalent	5.295***	4.796***
	(0.607)	(0.926)
NCE, squared		0.570
		(0.712)
Graduation Rate	1.244***	0.284
	(0.262)	(1.057)
Graduation Rate, squared		0.590
		(0.627)
Graduation Rate * High School	0.696***	0.699***
	(0.0995)	(0.101)
District Enrollment	-1.444***	-1.444***
	(0.0568)	(0.0569)
District Enrollment squared	0.0991***	0.0991***
	(0.00378)	(0.00378)
Salary index (log)	1.373***	1.332***
	(0.279)	(0.280)
Rural indicator	0.0505***	0.0505***
	(0.0112)	(0.0112)
% Economically Disadvantaged	0.886***	0.900***
	(0.078)	(0.0792)
% English Language Learner	0.226***	0.236***
	(0.0667)	(0.0666)
% Special Education	2.157***	2.179***
	(0.226)	(0.229)
Population Density	0.166***	0.171***
	(0.018)	(0.0183)
Elementary grades served	-0.129***	-0.130***
	(0.016)	(0.0159)
High school grades served	-0.508***	-0.511***
	(0.0909)	(0.0920)
Salary Index (log), squared	-0.648	-0.550
	(0.578)	(0.581)
% English Language Learner, sq	-0.623***	-0.640***

LABELS	Baseline	Quadratic Outputs Model
	(0.109)	(0.109)
% Special Education, sq	-6.135***	-6.211***
	(0.674)	(0.684)
Population density, squared	-0.00202	-0.00208
	(0.00134)	(0.00133)
Population density* Salary Index	-0.510***	-0.519***
	(0.0414)	(0.0419)
AYP Schoolyear = 2016	-0.0364***	-0.0366***
	(0.00591)	(0.00591)
First stage Residuals, NCE	-5.102***	-5.180***
	(0.609)	(0.608)
First stage residuals, Graduation	-1.454***	-1.517***
	(0.271)	(0.280)
Constant	9.644***	10.12***
	(0.357)	(0.550)
Error Variance		
Herfindahl Index, log	0.797***	0.798***
	(0.249)	(0.248)
Border metro	2.320***	2.268***
	(0.372)	(0.364)
% Owner occupied	7.293***	7.154***
	(1.321)	(1.286)
% Over 60	-2.316	-1.976
	(1.496)	(1.475)
% College	-12.06***	-11.90***
	(1.542)	(1.415)
Usigma	-7.214*** (0.958)	-7.294*** (0.941)
Vsigma	-4.095*** (0.0418)	-4.086*** (0.0415)
Observations	2,310	2,310

2. What is the size threshold (of a school district) at which costs begin to increase?

   The size threshold (of a school district) at which costs begin to increase is 1,464 students.

3. What factors are included in the economies of scale index?

   School district enrollment is the only factor used to derive the economies of scale index. The U-shaped curve observed in Kansas is consistent with a large body of research demonstrating the

same effect in other states as well as national data sets. The costs that may be more highly associated with higher levels of spending may be urbanicity or the demographic of the students. However, even when held constant it is likely that the loading – or the increased cost – would be born on wages within those school districts. That is, if the cost was not to show up in the economies of scale it was highly likely to have presented itself in other variables introduced in the model.

4. What is the difference between the maintenance and compensatory scenarios?

There are several distinguishing characteristics between the maintenance and compensatory scenarios that are important to understand. As the label implies, the maintenance scenario is the necessary funding level in order to maintain, on average, a specified level of performance. In this case a 95% graduation rate and an annual growth of a 0.50 NCE score. Also, important to note is that the maintenance scenario would accomplish an outcome of raising the overall, statewide achievement average but would not close gaps between school districts that are performing below the current state average. ***That is, the maintenance scenario can be considered an ongoing and perpetual investment in the public education system to improve overall statewide achievement.*** Further details on the maintenance scenario and presumptions of improvement are outlined in question #5 below.

In contrast, the compensatory support scenarios identify the necessary investment to support individual school districts to close the gap between their current performance and the identified performance threshold over a period of five years. And further, that once the investment was made in a school district that they would be able to close the gap and then having achieved that threshold be able to return to a spending level in line with the maintenance scenario. ***That is, the compensatory scenarios can be considered a remedial, one-time investment in the public education system (spread out over a five-year period) to support school districts and their respective students to 'catch-up' and achieve the identified performance thresholds.***

There are several precedents for the combination of both ongoing and one-time funding streams in both federal and state education policy to support student achievement growth. And, in those examples policymakers made explicit the intent of each of the types of funding – ongoing and one-time – and how each should contribute to helping raise the level of student achievement in schools and school districts. In particular, school districts would need to guard against hiring staff (which is primarily an ongoing expense) using one-time funds. Examples of the use of one-time funds may be directed towards activities that help to provide a boost to the educational system that can be further maintained over a longer period of time. Such investments may include building stronger teacher supply pipelines from post-secondary institutions to school districts; designing training for teaching staff that build their capacity for instructional delivery; developing partnerships with other local mental health and wellness partners to provide services to students. All of these examples would aim to significantly increase the capacity of schools and school

districts to achieve higher levels of performance then allow for a level of maintenance to sustain that achievement over a longer period of time.

5. The maintenance scenario contains a performance threshold of 0.50 NCE score and a 95% graduation rate. Is the 95% a statewide rate or the rate reached by each district?

The long-run maintenance scenario includes an assumption of a performance threshold for ELA and math of a 0.50 NCE score and a 95% graduation rate at the end of the 2021-22 school year. The 95% graduation rate presumes that each district achieves that level of performance. The 0.50 NCE score presumes that every student performs as expected given his or her prior scores, or equivalently that every student experiences the normal amount of progress from one year to the next, given where they started. If all of the students had experienced average progress from 2015-16 to 2016-17 under the long-run maintenance scenario, rather than their actual progress, then the percentage of students scoring at level 2 or better in ELA and math would have been roughly 2 percentage points higher statewide, the percentage of students scoring at level 3 or better in math would have been roughly 3 percentage points lower, and the percentage of students scoring at level 3 or better in ELA would have been essentially unchanged. The percentage scoring at level 3 or better in Math would have been lower because many students with above average growth had just barely crossed the threshold into level 3 and would not have done so had they posted only average progress.

	Actual Progress (Actual NCE)	Average Progress (0.50 NCE)
Percent scoring at level 3 or better, statewide		
ELA	39.46%	39.04%
Math	32.81%	29.97%
Percent scoring at level 2 or better, statewide		
ELA	73.97%	76.56%
Math	73.97%	75.88%

Note that the conditional NCE scores measure the change in student performance from one year to the next, so conditional NCE scores are not defined for grades 3 and 10 (because there are no corresponding prior year's scores). The actual percentages reported above therefore cover grades 4-8 and will not match those reported elsewhere because only a subset of grades are included in the calculations above.

6. Can the research team provide other cost estimates at various ELA/math passing rates?

The research team re-ran the analysis looking at three other scenarios in which the ELA/math passing rates for Level 2 was 85% (Scenario C) the ELA/math passing rates for Level 3 was 55% (Scenario D), and Level 2 was 80% (Scenario E). The results of that analysis can be captured in the table below (in 2017 dollars). Note that the relationship is not linear between the percent proficient students in ELA and math and the amount of dollars invested.

	Cost Estimate ($)	Percent Increase Over Current	Per Pupil Cost Estimate ($)
Current K-12 Spending	$4.652 billion	n/a	$9,313
Long-run maintenance	$5.103 billion	9.7%	$10,419
Compensatory support: Scenario A (Level 2 @ 90%)	$6.438 billion	38.4%	$13,144
Compensatory support: Scenario B (Level 3 @ 60%)	$6.719 billion	44.4%	$13,717
Compensatory support: Scenario C (Level 2 @ 85%)	$6.111 billion	31.4%	$12,477
Compensatory support: Scenario D (Level 3 @ 55%)	$6.664 billion	43.3%	$13,605
Compensatory support: Scenario E (Level 2 @ 80%)	$5.768 billion	24.0%	$11,766

7. Does the research team have examples of states that have created a 'minimum funding guarantee' for public education? What has been the impact of that legislative language?

There are several states that have statutory language in their education funding formulas which guarantees a minimum funding level for the state K-12 education system. One of the most prominent of these systems is in California. In 1998, the California taxpayers approved Proposition 98 which created several scenarios ("tests") under which K-12 education is guaranteed a certain amount of public funding.

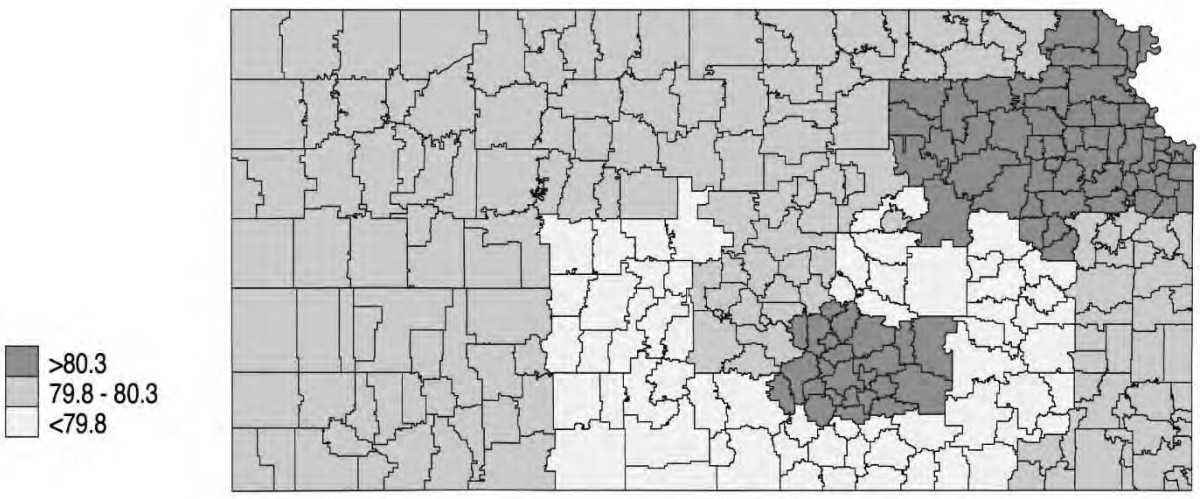
The selection of the test during a fiscal year is determined largely on the size of the state budget (driven by the state economy) as well as other factors, e.g., growth in student attendance, that determines the overall investment for the upcoming school year. This legal provision has provided California with a healthy balance between ensuring that policymakers recognize and commit to minimum investments in the K-12 education system while also ensuring that the growth of the

state budget is shared with public education. A one-page description of the formula best captures the method of the formula: https://edsource.org/wp-content/publications/PolicyBriefR3.pdf

Notably, the formula has not been without its benefits and challenges. In particular, policymakers in California has instituted a myriad of formula adjustments to the basic premise associated with the proposition which arguably has led to some of the findings in a recent review by the state's Legislative Analyst's Office (LAO). There are numerous lessons learned from California's experience, among which is the acknowledgement that ensuring the statute is flexible enough that it allows policymakers to work within the parameters of the minimum funding guarantee for public education. A link to the LAO's recent review can be found here: http://www.lao.ca.gov/reports/2017/3526/review-prop-98-011817.pdf

8. Can the research team reproduce the map on page 80 of your report to identify the school district values in the northeastern corner of the state?

Below is a reproduction of the map of Kansas identifying the comparable wage index (CWI) by school district. The identified school districts in the northeastern corner have values greater than 80.3.



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9. Can the research team produce the cost estimates for seven years?

The tables below provides a 7-year schedule which adds several additional years to the 3-year schedule presented during the hearing.

	2016-17	Change: 16-17 to 17-18	2017-18	Change: 17-18 to 18-19	2018-19	Change: 18-19 to 19-20	2019-20	Change: 19-20 to 20-21	2020-21	Change: 20-21 to 21-22	2021-22	Change: 20-21 to 21-22	2022-23
Maintenance	$4.737 B	+$46 M	$4.782 B	+$119 M	$4.901 B	+$122 M	$5.023 B	+$125 M	$5.147 B	+$128 M	$5.275 B	+$131 M	$5.406 B
Inflation		*+$46 M*		*+$46 M*		*+$47 M*		*+$49 M*		*+$50 M*		*+$51 M*	
Graduation Cost		*$0*		*+$72 M*		*+$75 M*		*+$76 M*		*+$78 M*		*+$80 M*	
Scenario A	$5.978 B	+$58 M	$6.036 B	+$150 M	$6.185 B	+$154 M	$6.339 B	+$157 M	$6.496 B	+$161 M	$6.657 B	+$165 M	$6.821 B
Inflation		*+$58M*		*+$58 M*		*+$60 M*		*+$61 M*		*+$63 M*		*+$64 M*	
Graduation Cost		*$0*		*+$91 M*		*+$94 M*		*+$96 M*		*+98 M*		*+$101 M*	
Scenario B	$6.239 B	+$60 M	$6.299 B	+$156 M	$6.455 B	+$160 M	$6.615 B	+$164 M	$6.779 B	+$168 M	$6.948 B	+$172 M	$7.120 B
Inflation		*+$60 M*		*+$61 M*		*+$62 M*		*+$64 M*		*+$65 M*		*+$67 M*	
Graduation Cost		*$0*		*+$95 M*		*+$98 M*		*+$100 M*		*+$103 M*		*+105 M*	
Graduation Rate	90%		90%		91%		92%		93%		94%		95%
ELA at Level 2 %	72.6%		74.6%		76.6%		78.6%		80.6%		82.6%		84.6%
Math at Level 2 %	72.4%		74.4%		76.4%		78.4%		80.4%		82.4%		84.4%

Notes: B=billion; M=million; some calculations do not add due to rounding

These additional funding figures presume two variables: (1) adjustments for annual inflation presuming the 5-year historical Midwest U.S. average consumer price index (CPI) of 0.965% and (2) a graduation rate of 90% in 2016-17 and 2017-18 growing one percentage point to 95% in the 2022-23 school year. The additional funding identified in the 2017-18 school year is exclusively associated with the annual inflation factor because the graduation rate is held steady. The additional funding identified in 2018-19 is associated with a combination of both the inflation factor as well as necessary resources to achieve a one percentage point increase in the graduation rate.

The table below presents the application of the same scenarios except it applies a graduation rate of 91% in the 2016-17 school year for the maintenance scenario. Note that the growth in the percentage of students at Level 2 for ELA and math scores represents the statewide average and is an approximate figure.

	2016-17	Change: 16-17 to 17-18	2017-18	Change: 17-18 to 18-19	2018-19	Change: 18-19 to 19-20	2019-20	Change: 19-20 to 20-21	2020-21	Change: 20-21 to 21-22	2021-22	Change: 20-21 to 21-22	2022-23
Maintenance	$4.808 B	+$46 M	$4.854 B	+$47 M	$4.901 B	+$47 M	$4.948 B	+$48 M	$4.997 B	+$48 M	$5.045 B	+$49 M	$5.093 B
Inflation		*+$46 M*		*+$47 M*		*+$47 M*		*+$48 M*		*+$48 M*		*+$49 M*	
Graduation Cost		--		--		--		--		--		--	
Graduation Rate	91%		91%		91%		91%		91%		91%		91%
ELA at Level 2 %	72.6%		74.6%		76.6%		78.6%		80.6%		82.6%		84.6%
Math at Level 2 %	72.4%		74.4%		76.4%		78.4%		80.4%		82.4%		84.4%

Notes: B=billion; M=million; some calculations do not add due to rounding

The table below presents a gradual increase of the graduation rate to 91% in the 2022-23 school year for the maintenance scenario.

	2016-17	Change: 16-17 to 17-18	2017-18	Change: 17-18 to 18-19	2018-19	Change: 18-19 to 19-20	2019-20	Change: 19-20 to 20-21	2020-21	Change: 20-21 to 21-22	2021-22	Change: 20-21 to 21-22	2022-23
Maintenance	$4.737 B	+$46 M	$4.783 B	+$60 M	$4.843 B	+$61 M	$4.904 B	+$62 M	$4.966 B	+$62 M	$5.028 B	+$63 M	$5.090 B
Inflation		*+$46 M*		*+$46 M*		*+$47 M*		*+$47 M*		*+$48 M*		*+$49 M*	
Graduation Cost		--		*+$14 M*		*+$14 M*		*+$14 M*		*+$14 M*		*+$14 M*	
Graduation Rate	90%		90%		90.2%		90.4%		90.6%		90.8%		91%
ELA at Level 2 %	72.6%		74.6%		76.6%		78.6%		80.6%		82.6%		84.6%
Math at Level 2 %	72.4%		74.4%		76.4%		78.4%		80.4%		82.4%		84.4%

Notes: B=billion; M=million; some calculations do not add due to rounding

10. What impact, if any, would removal of the KPERS (fund 51) spending have on the findings in the report?

    The research team reviewed its coding of the school district's operational spending for the 2016-17 school year against the guidance from KSDE to Chief Administrative Officers on how to classify the remedial KPERS spending payments. Based upon a memo produced in October 2016, these funds were reflected as a revenue received for each school district then transferred (within the district) to Fund 51 (KPERS Retirement Contribution). This activity – both the revenue recognition as well as the fund transfer – were not included in the analysis of a school district's operational spending. The extended reference cited above was an October 17, 2016 memo from Dale Dennis at KSDE to all Chief Administrative Officers.

11. Can the research team expand upon the strategies that may be employed by the Legislative Post Audit (LPA) that further expands upon finding #9 in the report?

    The research team, following a review of many of the LPA reports for school districts outlined three possible avenues in which that information could further developed and used. These possible avenues include:

    The analytical and comparative techniques used by the Legislative Post Audit have applicability in other environments and forums

    LPA often uses in their individual investigations of school districts analytical techniques that leverage trend information over time and/or comparisons of the school district to other populations, i.e., similar or all other Kansas school districts. These types of techniques may be of real value to other school districts interested in maintaining or increasing their effectiveness. This platform may also create an opportunity to generate consensus among practitioners for common metrics that can be used to investigate spending and resource patterns.

    The insights reached – although mostly oriented towards compliance with the law – surface matters of process, culture and performance important for any organization to consider

    While the LPA investigations largely focus on checking the school districts compliance against language that exists in statute it is often the case that LPA further identifies other characteristics of school district culture – such as their processes, performance, behavior and activities – that are reflected in, at a minimum, compliance with the law but also their ability to operate a highly effective school system. The research team would suggest that

broadening the scope to have the LPA investigate some of these other elements of the school systems as compared to benchmarks besides the law, e.g., best practice within industry or other well-established metrics, etc., would create an aspiration and learning opportunity for the school district that continues to add value for the state's engagement with school districts.

The school district's response represents one way in which to engage in an exchange

Currently, the school district has an opportunity to respond to the LPA findings in the report by attaching an appendix that may include their narrative response and often an action plan that is responsive to the LPA findings. This written document is simply one way in which a school district may respond to the findings. While these activities are helpful and also create samples of how well local education agencies are doing relative to the law, there are other opportunities to engage school districts in the pursuit of higher levels of performance.

And, there are other approaches that – with encouragement from the state – the school district can identify other ways in which to respond to the findings. For example, one method that has been shown to produce results is creating professional learning communities (PLC) with a group of professionals with a common interest or aim. Originally this concept rose to prominence with Richard DuFour's work on PLC focusing primarily on instructional practices in the classroom. However, over time there has also been the applicability of such structures for other education professionals, including various Central Office administrator-similar roles.

FY 2019 over Current Law

Item	Already Added Via SB 19	FY 2019 Cost to State (million $)	Note
Special Education Addition	$12.0M in FY 18 and an additional $12.0M in FY 19	12.0	In addition to current law increase of $12 million for FY 2019.
400 new slots for Pre-K At-Risk	$2.0M in FY 18 and an additional $2.0M in FY 19	1.0	In addition to current scheduled addition of 800 new slots, totalling 1,200 new slots in FY 2019.
Additional Parents As Teachers	Moved from TANF to state funds	3.0	In addition to the $7.2 million already budgeted.
Addition to Base Aid for Student Excellence	$117.2M in FY 18 and an additional $84.4M in FY 19	19.7	Provides for an increase of $29 above the current $4,128.
Enrollment Weightings - BASE Aid Switch	--	0.0	Eliminating high enrollment weighting and reducing low enrollment weighting by a corresponding amount reduces weighted FTE by approximately 16,500 and is offset by an increase of $101 in BASE. FY 2019 BASE would be $4,258.
Mental Health-USD Partnership Pilot	--	10.0	
ABC Early Childhood Intervention	--	1.8	
ACT and Workkeys	--	2.8	
Concurrent Enrollment Pilot	--	1.5	
Enhanced Consolidation Incentive	--	0.0	
Mentor Teacher	$0.8M in each FY 18 and FY 19	0.5	
Professional Development	$1.7M in each FY 18 and FY 19	1.5	
Total		53.8	

FY 2020 over FY 2019

Item	Already Added Via SB 19	FY 2020 Cost to State (million $)	Note
Inflationary Adjustment to BASE	Inflation adjustment for FY 2020 and all years thereafter	12.8	1.3% inflation on $4,258 BASE would be $55, which costs $38.4 million, but the 20 mill levy is scheduled to increase by $25.6 million
ABC Early Childhood Intervention	--	1.7	
Other Increases	--	40.5	$40.5 million would be available for increases in special education, any of the prior year pilot projects, or funding/implementation of dyslexia task force.
Total		55.0	

The floor amendment to Sub. for SB 423 includes the provisions of HB 2445 as passed by the House, with the following changes:

- An introductory statement related to K-12 finance and the bill has been added.

- The bill would appropriate $2.8 million from the SGF to provide the ACT and three ACT Workkeys assessments required to earn a national career readiness certificate to each student enrolled in grades 9-12. No such student would be required to pay any fees or costs, and no school district would be required to provide more than one exam and three assessments per student. Further, the bill would appropriate $500,000 for the mentor teacher program, all from the SGF.

- The Base Aid for Student Excellence (BASE) amounts are set at the following levels:
  FY 2019: $4,900
  FY 2020: $5,061
  FY 2021: $5,222
  FY 2022: $5,384
  FY 2023: $5,545

  Following FY 2023, the BASE would be adjusted according to the three-year average of the Midwest CPI. Factoring in the other changes to Total Foundation Aid, these BASE levels are effectively $5 less than the BASE levels approved in HB 2445.

- The bill would require a Local Option Budget (LOB) of at least 15% of the total foundation aid. This portion of the LOB would be counted towards the total foundation aid of school districts. School districts could adopt a local option budget up to 27.5% of total foundation aid (30.5% with the adoption of a resolution subject to a protest petition.) These lower LOB percentages would be applied to the higher BASE amounts to provide for no loss of LOB authority. For purposes of LOB, Special Education State Aid would be converted to a weighted FTE and then applied to the higher BASE amounts to further provide for no loss of LOB authority.

- In lieu of the House position of repealing the limitation on the amount of school bond elections that may be approved by the State Board of Education (KSBE), the bill would provide for two changes to the limitation:

  - The bill would provide that for an application in excess of $175.0 million, KSBE would apply an amount of $175.0 million when determining whether the aggregate principal amount has been exceeded.
  - Additionally, commencing in school year 2017-2018, KSBE would be required to determine the aggregate principal amount by adjusting the aggregate principal amount by the five-year compounded producer price index industry data for new school building as reported by the Bureau of Labor Statistics.

ESTIMATED STATE AID INCREASES
SB 423 House Floor Amendment

Program	2018-19	2019-20	2020-21	2021-22	2022-23
BASE	$ 4,900	$ 5,061	$ 5,222	$ 5,384	$ 5,545
General State Aid	106,460,111	95,000,000	95,000,000	95,000,000	95,000,000
Special Education State Aid	44,400,000	7,500,000	7,500,000	7,500,000	7,500,000
Four-Year-Old At-Risk	2,000,000	2,000,000	2,000,000	2,000,000	0
Supplemental General State Aid	35,000,000	1,000,000	1,000,000	8,600,000	13,000,000
Mental Health Pilot Program*	7,500,000	0	0	0	0
ACT and WorkKeys	2,800,000				
Teacher Mentoring	500,000				
Adjustments**	(9,231,963)				
TOTAL	$ 189,428,148	$ 105,500,000	$ 105,500,000	$ 113,100,000	$ 115,500,000

*The Committee also approved $2.5 million to establish a data system for the mental health pilot program.

**Adjustments—Reduction in new facilities weighting.

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April 23, 2018

To: Curtis Tideman, Legislative Counsel

From: Edward Penner, Principal Research Analyst

Re: House School Finance Calculation Effort

During House Committee on K-12 Education Budget discussion and floor debate (House Committee of the Whole) on HB 2445, several representatives referred to a target for increased aid to schools of approximately $522.2 million. This memorandum attempts to describe the considerations and calculations used to arrive at the $522.2 million amount. The amount is essentially arrived at by applying the 2010 school finance formula to current student enrollment, distribution, and demographics and bringing the spending level forward for inflation.

The 2008 Legislature provided for a base state aid per pupil of $4,492 for school year 2009-2010. Applying the school finance formula as it existed in 2010, including the base state aid per pupil of $4,492, to the current Kansas student population, including those students eligible for all of the weightings in the formula as it existed in school year 2009-2010, results in a total amount of aid to schools in the district general funds of approximately $3,108.7 million. Aside from the change in the per weighted pupil base amount, the other formula changes from school year 2009-2010 to the current formula include the addition of funding for all day kindergarten, the adjustment of the at-risk weighting from 0.456 to 0.484, and other smaller adjustments to various weightings and formula provisions.

The next step in this analysis was to adjust that amount for inflation. The index used for this consideration was the CPI-U for the Midwest region, as reported by the U.S. Bureau of Labor Statistics. For the inflation adjustments, please see the table below. The inflation adjustments resulted in a new total amount of aid to schools of $3,434.9 million.

Year	Prior Year Amount	Inflation Percent	Inflation Adjustment Amount	New Amount
2011	$ 3,108,690,821	3.22 %	$ 100,099,844	$ 3,208,790,665
2012	3,208,790,665	2.03	65,138,451	3,273,929,116
2013	3,273,929,116	1.40	45,835,008	3,319,764,124
2014	3,319,764,124	1.47	48,800,533	3,368,564,656
2015	3,368,564,656	(0.54)	(18,190,249)	3,350,374,407
2016	3,350,374,407	0.85	28,478,182	3,378,852,590
2017	3,378,852,590	1.66	56,088,953	3,434,941,542

The final step in arriving at the target amount for increased aid to schools was to deduct the current state aid and the already-scheduled increases for school year 2018-19. The school year 2017-2018 state aid amount was $2,817.1 million, which is a sum of approximately $31.2 million of virtual school state aid and approximately $2,785.9 million of state foundation aid associated with a base aid for student excellence of $4,006. At the time of these calculations, the estimated increase for school year 2018-2019 over 2017-2018 due to 2017 SB 19 was approximately $95.6 million. Deducting these two amounts from $3,434.9 million results in a remaining amount of $522.2 million.

Target Aid to Schools	$	3,434,941,542
Current Aid		(2,817,090,821)
Scheduled Increase in Aid		(95,606,000)
Total Target Additional Aid	**$**	**522,244,721**

EFP/kal

Special Committee on a Comprehensive Response to the School Finance Decision

Report

Conclusions and Recommendations

Following informative hearings and discussion, the Committee declined to make recommendations; however, it commends to the Legislature the testimony provided to the Committee, the minutes of each meeting, this report, and its appendices.

Proposed Legislation: None

Background

The Kansas Supreme Court issued its fifth opinion in *Gannon v. State* on Monday, October 2, 2017. The *Gannon* litigation concerns whether the Legislature is in compliance with Article 6, Section 6 of the *Kansas Constitution*, which, in relevant part requires the Legislature to "make suitable provision for finance of the educational interests of the state." In *Gannon I*, the Court reiterated its prior holding that Article 6 contains at least two components: equity and adequacy. The Court provided the following test for equity: "School districts must have reasonably equal access to substantially similar educational opportunity through similar tax effort." Further, the Court stated adequacy would be achieved when the school finance system is reasonably calculated to have all Kansas public education students meet or exceed the capacities set out in *Rose v. Council for Better Educ., Inc.*, 790 S.W.2d 186 (Ky. 1989), including sufficient oral and written communication skills; knowledge of economic, social, and political systems; understanding of governmental processes; self knowledge and knowledge of one's mental and physical wellness; grounding in the arts; training or preparation for advanced training in either academic or vocational fields; and academic or vocational skills that enable favorable competition in academics or the job market.

In *Gannon IV*, the Court held the K-12 public financing system was constitutionally inadequate and gave the Legislature an opportunity to bring the State's education financing system into compliance with Article 6, Section 6 of the *Kansas Constitution* by June 30, 2017. The Legislature subsequently passed 2017 SB 19, creating the Kansas School Equity and Enhancement Act. The Governor signed the bill on June 15, 2017, and it became effective on July 1, 2017.

In *Gannon V*, the Kansas Supreme Court held the State has not met its burden of showing SB 19 meets the constitutional requirements for equity and adequacy. The Court retained jurisdiction of the case and extended to June 30, 2018, the stay of its previous mandate that without a constitutionally valid school finance system, the system would be void and schools could be closed. The Court stated at that time the Court will not "be placed in the position of being complicit actors in the continuing deprivation of a constitutionally adequate and equitable education owed to hundreds of thousands of Kansas school children." Additionally, the Court announced briefs on any legislative remedies are due April 30, 2018, response briefs are due May 10, and oral arguments will be conducted May 22.

At its October 30, 2017, meeting, the Legislative Coordinating Council considered a request submitted by Speaker Ron Ryckman to create an 11-member special committee chaired by

a House of Representatives member, with 6 members from the House of Representatives (4 Republicans and 2 Democrats) and 5 members from the Senate (4 Republicans and 1 Democrat). The request emphasized the need to begin work immediately given the scope of the issue to be addressed and the limited time available. To allow the Legislature to begin work quickly and efficiently in January, the request suggested the Committee "act as fact-finders, gather the necessary information, compile the options available to the legislative body, and identify specific matters for the standing committees of both houses." Standing committees include the House and Senate Education Committees, the House K-12 Education Budget Committee, and the Senate Select Committee on Education Finance (if reauthorized).

The LCC authorized the Committee to meet three days with the specific charge to:

- Review and analyze *Gannon V*;
- Identify the responses available to the Legislature and the consequences of each; and
- Explore options to reduce or eliminate the perpetual cycle of conflict over school finance and end the perennial and recurrent threat of school closures.

Committee Activities

The Committee held meetings on December 4, December 18, and December 19, 2017. Information provided at the meetings is summarized below.

December 4

Review of Gannon Litigation and Previous Legislative Responses

The Committee began its work with a presentation from staff of the Office of Revisor of Statutes (Revisor's Office) on the history of school finance litigation in Kansas; the procedural history of *Gannon*, which was filed in 2010; SB 19; and the *Gannon V* opinion. Staff of the Kansas Legislative Research Department (KLRD) followed with additional information on legislative action taken in response to the *Gannon* litigation, as well as information about education consensus calculations for fiscal years (FYs) 2018 and 2019 and a five-year profile of the State General Fund (SGF). A representative of the Kansas State Department of Education (KSDE) also provided data to the Committee concerning changes in enrollment, spending for personnel and at-risk programs, the Local Option Budget (LOB), and capital outlay.

In the afternoon, the Committee received information from staff of the Revisor's Office on the specific equity and adequacy issues identified by the Court in *Gannon V* and from KLRD staff on the potential fiscal impact associated with addressing those issues.

Discussion of Equity Issues

The Court identified four points of inequity in SB 19. First, the Court ruled the expanded use of capital outlay funds for utilities and property and casualty insurance would result in unacceptable levels of wealth-based disparities as a district's ability to take advantage of this provision is tied to its property wealth. The most direct remedy would be to repeal these provisions, which would result in no direct cost to the State.

Second, the Court ruled the reinstatement of the protest petition and election process to reach the maximum LOB authority of 33.0 percent resulted in inequity as it effectively denied access to the maximum LOB authority for many districts while other districts are granted that access. The most direct remedy would be to allow all districts to reach maximum LOB authority without being subject to a protest petition. KSDE estimates allowing districts to reach the maximum LOB authority of 33.0 percent without the protest petition and election process would increase state obligations for Supplemental General State Aid (LOB State Aid) by approximately $10.0 million for FY 2019. Combined, all school districts in the State are approximately $87.0 million below the maximum LOB possible under current law. KSDE officials do not anticipate allowing all districts to reach 33.0 percent without the protest petition and election process would result in all districts below 33.0 percent raising their LOB authority to the

maximum authority due to a variety of factors, including local concerns about property tax levels.

Third, the Court ruled the change to using the prior year LOB amount to determine the amount of LOB State Aid a district is entitled to receive results in inequity as a property-poor district that raises its LOB will not receive increased equalization aid for the first year of the increased LOB. The most direct remedy would be to return to using the current year LOB amount to determine LOB State Aid. The November 2017 Consensus Revenue Estimates included savings of $26.4 million in FY 2018 and $8.2 million for FY 2019 due to reduced LOB State Aid payments as the SB 19 appropriation for LOB State Aid was based on current year LOB authority, not the change to prior year LOB authority. Returning to current year LOB would eliminate the FY 2019 savings. Additionally, Committee members discussed the possibility of legislation that would require districts to provide notice to the KSDE by a date certain if they were going to increase their LOB, which would also give the Legislature notice of the need for additional equalization dollars.

Fourth, the Court ruled the 10.0 percent floor for the at-risk weighting violated the equity requirement as only two school districts benefit from this provision, and the State did not demonstrate why the free-meals proxy used for the at-risk weighting was inappropriate for those two districts but appropriate for all other districts. The most direct remedy would be to repeal this provision, which would save the State approximately $2.2 million.

The Committee discussed these issues, as well as potential responses, and requested the following information from the KSDE: the number of students in the Blue Valley and DeSoto school districts receiving at-risk services and the number of students in those districts eligible for free meals; the process each district used in pursuing LOB authority of 33.0 percent; and information on the extent to which districts were using capital outlay funds for utility expenses and property and casualty insurance.

Discussion of Adequacy Issues

The Court explicitly declined to provide a specific minimum amount to reach constitutional adequacy, but did refer to three recommendations for the FY 2019 base aid for student excellence (BASE). First, it referred to the three-judge panel recommendation, which included a FY 2019 BASE of $5,055. This is an increase of $927 above the FY 2019 BASE of $4,128 included in current law and would result in an additional cost to the State of $635.9 million for FY 2019. Next, the Court referred to the State Board of Education recommendation, which recommended a FY 2019 BASE of $5,090. This is an increase of $962 above the FY 2019 BASE of $4,128 included in current law and would result in an additional cost to the State of $659.9 million for FY 2019. Finally, the Court referred to the Plaintiff's recommendation, which recommended a FY 2019 BASE of $6,539. This is an increase of $2,411 above the FY 2019 BASE of $4,128 included in current law and would result in an additional cost to the State of $1.65 billion for FY 2019.

The Committee discussed these issues, as well as potential responses, and requested information needed to better understand how to proceed, including information on revenue and budget adjustment scenarios that may be required if additional funding was appropriated for K-12 education.

December 18

Presentation of Follow-up Information

The Committee received information from KLRD staff and KSDE in response to questions asked at the December 4 meeting. Information provided included the legislative history of the LOB cap; the process school districts used in pursuing LOB authority of 33.0 percent; the cost if all districts were required to hold elections to increase their LOB; districts' balances and use of capital outlay funds; summaries of Parents as Teachers, the four-year-old at-risk program, and the at-risk program; data concerning all-day kindergarten; further explanation of the results of a recent survey concerning how school districts would use additional funds; historic data on student performance and numbers of teachers; and headcount data for virtual, out-of-state, and free-lunch eligible students and students receiving at-risk services.

Discussion of Gannon v. State litigation

Arthur S. Chalmers, attorney for the State in the *Gannon v. State* litigation, also appeared before the Committee to answer questions about the case presented to the three-judge panel and the Supreme Court, as well as the Supreme Court's opinion in *Gannon V.* The conferee declined to identify a "safe harbor" for equity or adequacy, but agreed the Court found the Legislature to be in compliance with the equity standard prior to the changes made in SB 19. Further, in response to a question about how the State can demonstrate adequate funding without relying on outputs, such as improved test scores and graduation rates, which will not be immediately available, the conferee referred to *Gannon IV.*

In *Gannon IV,* the Court stated "[t]here is no one specific way for this funding to be achieved"; parted company with the three-judge panel to the extent it would limit the State to a particular system or structure or refuse to consider sources of funding other than those calculated through the Base State Aid Per Pupil; and rejected "any litmus test that relies on specific funding levels to reach constitutional compliance" (*Gannon v. State*, 305 Kan. 850, 916-17 (2017)). Further, the Court stated that while the cost studies are estimates of spending, they represent evaluations that the Court cannot simply disregard, and the State should not ignore them in creating a remedy. (*Id.* at 917.) The Court advised that while considering cures, the Legislature should also be mindful of the connection between equity and adequacy. (*Id.)* Further, the Court emphasized that the adequacy test is one of minimal standards, and "whether the legislature satisfies the test by exceeding the *Rose* standards is up to that deliberative body—and ultimately the people of Kansas who elect its members to office" (305 Kan. at 917-18). the conferee stated the Legislative Division of Post Audit (LPA) cost study looked at the results of math and reading tests that were paired with standards no longer in place, and he questioned whether those outputs were still appropriate to measure adequacy. The conferee indicated that whatever the measure, the Legislature must persuade the Court it is "moving the ball along" toward meeting the minimal standards in *Rose.*

In response to further questioning, the conferee stated his opinion that in "showing its work" to meet the burden for adequacy, the Legislature should demonstrate why, how, and how much performance will improve with the funding provided, and agreed outside expertise may be needed to establish the validity of the methodology relied upon. In showing the validity of phasing in funding, the conferee agreed the Court may be more responsive to this argument if presented with evidence from school boards or other reliable sources that the total amount of funding could not immediately be put to use.

When asked about the timeline for formulating a response, the conferee advised the Committee that given the April 30 briefing deadline, ideally the Legislature will have concluded its work by March 1 to ensure sufficient time for the bill to be enacted and for the Attorney General's Office to compile necessary documents.

Presentation on Revenue and Budget Adjustment Scenarios

KLRD Staff provided information on revenue and budget adjustment scenarios that may be required if additional funding was appropriated for K-12 education. (For a summary of this information, see Appendix I.) Additionally, representatives of selected state agencies appeared before the Committee and spoke to the potential impact of an 18.0 percent across-the-board reduction of SGF appropriations in FY 2019, which, if K-12 education were excluded, would total around $600 million.

The Kansas Department of Corrections (KDOC) indicated an 18.0 percent reduction would be a reduction of $65.6 million. As many of the agency's costs are fixed in relation to the offender population, KDOC stated this reduction would require a reduction in the average daily population (ADP) of offenders through a change in sentencing laws and the early release of offenders. KDOC prepared the following 3 options for consideration: closure of 3 correctional facilities, reducing ADP by 2,503; elimination of all community corrections funding and closure of 2 correctional facilities, reducing ADP by 1,730; or elimination of parole services and community corrections funding and closure of 1 correctional facility, reducing ADP by 1,082.

The Kansas Judicial Branch indicated an 18.0 percent reduction would be a reduction of $18.5 million. Because 94.0 percent of the Judicial Branch budget is dedicated to personnel costs, the reduction would result in approximately 70 working days of court closures across the state, depending on turnover savings and fluctuating docket fee revenues. The Judicial Branch stated layoffs or hiring freezes are not options as it already has approximately 120 vacancies due to previous years' budget cuts and high employee turnover.

The Kansas Department of Health and Environment (KDHE) described how an 18.0 percent reduction of SGF funding would impact the agency; however, the agency indicated a detailed review of all relevant state and federal statutes and regulations would be necessary to determine the extent to which the loss of State match funds could result in the loss of additional federal funds. An 18.0 percent reduction would remove: $645,009 from Administration, which KDHE estimates as 24.5 of 98 funded positions; $3.1 million from the Division of Public Health, which KDHE indicates would eliminate or significantly reduce programs and services; $720,158 from the Division of Environment, which KDHE explains would result in the elimination of testing for parasites, chlamydia, and gonorrhea and reduce resources in the spill response program, asbestos program, and concentrated animal feeding operations; and $112.8 million from the Division of Health Care Finance (DHCF), which would impact Medicaid, the Children's Health Insurance Program, medical assistance for optional services and optional populations, school-based services, and DHCF administrative services.

The Kansas Department for Aging and Disability Services (KDADS) indicated an 18.0 percent reduction would be a reduction of $136.8 million to the agency and would result in a reduction to State-funded programs, including the Senior Care Act, Intellectual/Developmentally Disabled State Aid Services, and mental health grants and services. Further, some programs and services are partially funded by the federal government, with receipt of federal funds contingent on state participation. Consequently, loss of state funds could result in loss of federal funds for Community Developmental Disability Organizations and the Aging and Disability Resource Center, which screens individuals for three of the Medicaid waivers, as well as Meals on Wheels and other nutrition programs for older adults. KDADS indicated this reduction would also impact KanCare/Medicaid programs and services by reducing provider rates and numbers of individuals served both in long-term care and on the seven Medicaid disability waivers; result in accumulation of a waiting list for all Home and Community Based Services waivers; and potentially impact the number of providers willing to care for KanCare participants. Finally, reductions to the agency would require staff reductions that would impact oversight of the agency's behavioral health and longer term care services.

Reductions would also impact KDADS-administered state hospitals and institutions. The budget for Kansas Neurological Institute would be reduced by $1.7 million, including loss of 44.0 FTEs, closure of 3 homes, and impact to 23 residents. The budget for Larned State Hospital would be reduced by $10.4 million, including loss of 111.0 FTEs and 8.0 non-FTEs, closure of 1 unit from the State Security program impacting 20 inmates, closure of 2 units from the psychiatric services program impacting 60 residents, closure of 1 reintegration facility from the Sexual Predator Treatment Program impacting 16 residents, and reduction of contract services currently provided for patient care safety, and treatment. The budget for Osawatomie State Hospital (OSH) would be reduced by $3.3 million, including loss of 30.0 FTEs and elimination of 13-23 beds depending on whether they are eliminated on the licensed (OSH) or certified side (Adair Acute Care). The budget for Parsons State Hospital would be reduced by $2.1 million, including a loss of 64.0 FTEs, closure of 4 cottages, consolidation of remaining residents, and the move or transfer of 75 residents against the will of their parents or guardians to other locations.

The Kansas Department for Children and Families (DCF) indicated an 18.0 percent reduction would remove over $47 million with a larger potential impact to total funding depending on specific programs reduced or eliminated. The agency identified 22 actions that would be required to address this loss of funding, including: closure of 8 DCF service centers; elimination of

Family/Community Services prevention grants in Prevention and Protection Services (PPS), the Economic and Employment Services Food Distribution program, the Head Start Collaboration program, Child Care and Development Fund matching, the Faith-Based Community Initiatives program, the Human Trafficking program, Adult Protective Services grants, the Foster Care Federal Disability Advocacy contract, Foster Care and Family Services grants to 4 tribes, and the Chafee Independent Living program; elimination of SGF in the Family Preservation Program; reinstatement of the 4.0 percent collection fee for Child Support Services; reduction of foster care contracts by 12.0 percent, which could impact services and placement and result in longer stays in foster care; reduction to PPS Family Services prevention assistance not needed to meet federal matching requirements; reduction of funding to other operating expenses, strategic development, vocational rehabilitation and information technology; increase in salary shrinkage; and discontinuation of Adoption Support and Permanent Custodianship programs for future cases.

The Kansas Board of Regents indicated an 18.0 percent reduction would remove over $136 million from the postsecondary system, which would particularly impact Kansans' access to postsecondary education, Kansas' employers' workforce needs, and the system's ability to compete for students against other states, particularly in the regional market.

December 19

The Committee received information from the Revisor's Office staff on the history of Article 6 of the *Kansas Constitution,* which was adopted in 1966. The 1965 Legislature directed the Kansas Legislative Council (today's Legislative Coordinating Council) to study Article 6. As a result, the Council appointed an 11-member Education Advisory Committee. After receiving the Advisory Committee's report, the Council issued its own report recommending a proposed amendment rewriting Article 6. The Council gave primary credit to the Advisory Committee for the development of the proposed revision to Article 6 and stated it "borrowed extensively from the material in the advisory committee's report in preparing the text of this report." The Council recommended the following language for Article 6, Section 6, which has been the focus of the *Gannon* litigation: "The legislature may make provision for finance of educational and scientific activity by (1) transfer of funds . . ., (2) creation of special corporate entities . . ., (3) pooling of public and private funds . . ., and (4) any other method not prohibited by the constitution." According to the Council's report to the Legislature, the recommended language was intended to provide "considerable flexibility in taking whatever appropriate action might be necessary in financing educational programs." The constitutional amendment was introduced with different language, the same language that currently exists; however, the legislative record does not provide an explanation for this change.

The Committee also received information from the Revisor's Office staff on previous Kansas legislation addressing school finance litigation, which were categorized as: barring courts from exercising jurisdiction over claims of Article 6 violations; modifying the rules and practices of civil procedure as they apply to claims of Article 6 violations; prohibiting the expenditure of public moneys to finance the litigation of claims of Article 6 violations; amending the phrase "make suitable provision for finance of the educational interests of the state"; granting the constitutional power of appropriation exclusively to the Legislature; or prohibiting the closure of schools as a remedy for violations of Article 6.

Revisor's Office staff also summarized other states' constitutional provisions governing K-12 school finance.

The Attorney General appeared before the Committee to discuss school finance litigation trends in the United States and the *Gannon* litigation. He reiterated the recommended date of March 1 for the Legislature to have completed its substantive response, which the conferee had provided in his testimony to the Committee. He elaborated that such a deadline was prudent as it takes some time for legislation to be enrolled and signed, and once enacted, the Office of the Attorney General must then collect pieces of the record, develop arguments, and consult with legislative counsel by April 30. As an "extreme" example, the Attorney General indicated that in the last round of briefing, attorneys could not get a

copy of an essential legislative document until the day before the brief was due.

On the issue of the Committee's charge to "reduce or eliminate the perpetual cycle of conflict over school finance and end the perennial and recurrent threat of school closures," the Attorney General suggested a broader substantive conversation to address issues such as: who may bring a constitutional challenge to school funding; in what court the challenge should be brought; what duties are included within the term "suitable" (*i.e.*, equity and adequacy exclusively or others); whether equity and adequacy are the appropriate tests; whether there should be constitutional timelines on school finance litigation; the standard of review courts should use in reviewing school funding decisions by the Legislature; remedies the Supreme Court may use if it finds school funding laws are unconstitutional; the consequences for the Legislature if it violates a court order on school funding; how "adequacy" of funding should be determined; and who should be allowed or required to participate in school finance litigation.

Conclusions and Recommendations

Following informative hearings and discussion, the Committee declined to make recommendations; however, it commends to the Legislature the testimony provided to the Committee, the minutes of each meeting, this report, and its appendices. These documents include possible options available. Additionally, Chairperson Finch allowed members to request information to be provided as appendices to this report.

Noting the Committee had not discussed potential cost savings related to merger or consolidation of school districts, Senator Wilborn requested information on that topic be provided (executive summary is Appendix II; full report is available at http://www.ksde.org/Portals/0/School Finance/budget/Legal_Max/sdbs--Final_Complete Report.pdf).

Senator McGinn asked for information on expenditures and services provided by other state agencies to K-12 education since 2008 (Appendix III).

Senator Baumgardner asked for LPA's recent performance audit titled "K-12 Education: Evaluating Transportation Services Funding" to be attached to this report (Report Highlights are Appendix IV; full report is available at http://www.kslpa.org/assets/files/reports/r-17-020.pdf).

APPENDIX I

Summary of KLRD Information on Revenue and Budget Adjustment Scenarios

The following table displays cost estimates of various per pupil amounts discussed by the Kansas Supreme Court in its October 2, 2017, decision in the *Gannon* school finance litigation.

	FY 2019 BASE	Current Approved FY 2019 BASE	Difference	Additional Cost to the State
Plaintiff Recommendation	$ 6,539	$ 4,128	$ 2,411	$ 1,653.9 million
KSBE Recommendation	5,090	4,128	962	659.9 million
Three-Judge Panel Recommendation	5,055	4,128	927	635.9 million

The following table displays across the board State General Fund reduction options.

FY 2019 State General Fund Across the Board Reductions			
Amount of Reduced Spending to Be Achieved	Percent of All Spending Excluding K-12 Education	Percent of All Spending Excluding K-12 Education and Debt Service	Percent of All Spending Excluding K-12 Education, Debt Service, and Human Service Caseloads
$200 million	6.0%	6.3%	9.2%
$400 million	12.0%	12.5%	18.3%
$600 million	18.0%	18.8%	27.5%

The table below displays selected revenue generation options.

Sample Fiscal Notes for Selected Tax Law Changes ($ in millions)				
	Sales/Use Tax Increase from 6.5% to 6.6 %, effective July 1, 2018	USD General Fund Levy from 20 to 21 mills, effective tax year 2018	USD General Fund Levy Repeal $20,000 Homestead Exemption	Individual Income Tax Increase of 0.1% in all brackets, effective tax year 2018
FY 2019	46.674	32.540	44.097	85.143
FY 2020	51.885	34.797	45.629	66.686
FY 2021	52.871	36.125	45.787	67.820
FY 2022	53.876	37.405	45.946	68.973
FY 2023	54.889	38.684	46.104	70.145
5-yr total	**260.210**	**179.551**	**227.563**	**358.767**

APPENDIX II

A Comprehensive Study on the Organization of Kansas School Districts

Prepared for
The Kansas State Board of Education

in response to
RFP Number 00241

by

Augenblick & Myers, Inc.

Dr. John Augenblick, John Myers, and Justin Silverstein

January 10, 2001

EXECUTIVE SUMMARY

In October 1999, Augenblick & Myers, Inc. (A&M), a Denver-based consulting firm that works with state policy makers on education finance and governance issues, was selected by the Kansas State Board of Education to conduct a study of school district organization. The study was mandated by the Kansas Legislature in Section 10, 1999 Senate Bill 171.

A&M created an advisory panel for the study, consisting of Dr. Richard King of the University of Northern Colorado, Dr. Chris Pipho, formerly with the Education Commission of the States, Dr. Paul Nachtigal, former director of the Rural Challenge, and Mr. Terry Whitney, formerly with the National Conference of State Legislatures. We then undertook five key tasks.

1. We completed a review of the literature related to school district reorganization.

2. We developed two approaches to selecting "target" districts that might benefit from reorganization.

3. We conducted on-site visits and interviews with representatives of 64 school districts located throughout the state.

4. We developed three alternative ways to reorganize school districts.

5. We identified areas where statutory changes would be needed to implement our recommendations.

School districts are important governmental entities in this country. At the discretion of the states, most of them have been delegated the authority to levy taxes, incur bonded indebtedness, hire key employees, and set curriculum. Kansas, like the other states, determines how many school districts shall exist and where their boundaries shall be. Over time, the number of school districts has decreased dramatically from over 120,000 nationally, to fewer than 15,000, and from over 9,000 in Kansas, to 304. The importance of their boundaries has also diminished somewhat, particularly in states such as Kansas that have modified their school finance procedures so that the wealth of each district is far less critical in determining that district's total revenue and property tax rates. This is also true in states that have promoted open enrollment (so that pupils can enroll in schools in districts other than the one in which they reside). Kansas currently has 1.00% of the nation's pupils, 1.62% of the nation's schools, and 2.10% of the nation's school districts.

While the states have delegated certain powers to school districts, they maintain both a constitutional responsibility to provide adequate and equitable education services and an interest in assuring that pupils achieve certain education objectives. A state's economic and democratic future hinges on whether such objectives are met. Because

the state pays for a significant portion of educational services, it also has an interest in assuring that the cost of providing these services is reasonable. These days, a state's interest in elementary and secondary education primarily reflects its interest in pupil performance and per pupil spending. Little else justifies changing school district boundaries.

The literature about school district reorganization is rather thin, consisting mostly of economic studies of school and school district optimum size, and the arguments that are made for and against changing the numbers of school districts in a state. While the literature is less than definitive about school and school district size, there has long been the view that schools, particularly high schools, need to be large enough to provide an adequate array of academic services and extra-curricular activities. More recently, there are those who advise that schools be small enough to assure a safe, nurturing environment and that school districts are not so large that they become unmanageable. While technology facilitates the provision of broader opportunities in small, isolated schools, there is little evidence that it can fully substitute for the hands-on presence of well-trained adults. And while evidence exists that some graduates of small high schools go on to become very successful, that evidence tends to focus on very few people, much the same way large schools publicize a small number of pupils who become Merit Scholars.

A&M used two basic approaches to identify "target" school districts that might benefit from reorganization. The first approach focuses on districts with relatively low levels of pupil performance and relatively high levels of per pupil spending. We used a statistical technique, regression analysis, to predict both expected levels of pupil performance (based on combining 1998 composite reading, math, and writing scores for Kansas statewide achievement tests) and expected levels of per pupil spending (for instruction, administration, and plant maintenance and operation). Some people suggested that the use of the tests was inappropriate. Because our purpose was to focus only on some districts, the tests provide the only basis for evaluating the relative performance of school districts, and the information is already being used to hold districts accountable, we feel that it is appropriate to use them as the basis of identifying those school districts where state action might be required. While there are many other kinds of information that individual districts use to evaluate their own performance, none provide comparable information for all districts. We used per pupil spending as the basis for evaluating relative spending levels. Some people suggested that, since the state controls the level of spending of school districts, and no district exceeds the level specified by the state, it is logically impossible to identify high spending districts. Our feeling is that, given the variation in spending that exists, some districts may be spending more than necessary relative to the spending of other districts. The state's formula for distributing state aid may also permit higher spending than is necessary.

Using regression analysis allows us to see how pupil performance and per pupil spending are influenced by the proportion of pupils eligible for free and reduced price lunches and the wealth or enrollment level of a school district. The regression equations accounted for 73 percent of the variation in per pupil performance and 80

percent of the variation in per pupil spending. Given that those levels are high but not perfect, we established confidence intervals around predicted levels of performance and spending to be sure that appropriate districts were identified as being low in performance or high in spending. Based on our analysis, we identified 28 districts that had a combination of low pupil performance and high per pupil spending. They are listed below in three categories.

Districts that have low pupil performance and high per pupil spending based on regression results: Moscow Public Schools (209), West Solomon Valley Public Schools (213), Elkhart (218), Washington Schools (222), Hanston (228), Nes Tre La Go (301), Belle Plaine (357), Chase-Raymond (401), Hillcrest Rural Schools (455), and Udall (463).

Districts with higher than expected per pupil spending and lower than average pupil performance for two years: Fowler (225), Triplains (275), Elk Valley (283), Cedar Vale (285), Herndon (317), Eastern Heights (324), Wathena (406), and Chetopa (505).

Districts with lower than expected pupil performance in 1998, lower than average performance in 1997, and per pupil spending above the predicted level excluding the use of the confidence interval: Turner-Kansas City (202), Bonner Springs (204), Mankato (278), Pleasanton (344), Oxford (358), Caldwell (360), Marysville (364), Madison-Virgil (386), Neodesha (461), and South Haven (509).

The second approach to identify districts that might benefit from reorganization focuses on districts that are either too small or too large, given what researchers and practitioners believe, to offer an appropriate curriculum, extra-curricular opportunities, and a safe, nurturing environment. This approach assumes that a high school should serve between 100 and 900 pupils and that a district should have an enrollment of at least 260 pupils per high school but no more than 2,925 pupils per high school in order to be at those levels. Looking at the total enrollment of school districts and the number of high schools they operate, we found 50 districts that are too small and 24 districts that are too large based on these guidelines. We also identified two districts as being so large that they might need to be reorganized by breaking them into smaller, more manageable districts. These 76 districts have been grouped into four categories and listed below.

Districts that are too small with only one high school: Cheylin (103), White Rock (104), Moscow Public Schools (209), Northern Valley (212), West Solomon Valley Schools (213), Rolla (217), Ashland (220), North Central (221), Fowler (225), Hanston (228), West Smith County (238), Weskan (242), Palco (269), Triplains (275), Jewell (279), West Graham-Morland (280), Elk Valley (283), Cedar Vale (286), Grinnell Public Schools (291), Wheatland (292), Prairie Heights (295), Sylvan Grove (299), Nes Tre La Go (301), Smoky Hill (302), Bazine (304), Brewster (314), Golden Plains (316), Herndon (317), Eastern

Heights (324), Logan (326), Burrton (369), Montezuma (371), Hamilton (390), Paradise (399), Chase-Raymond (401), Mullinville (424), Midway Schools (433), Hillcrest Public Schools (455), Healy Public Schools (468), Dexter (471), Haviland (474), Copeland (476), Pawnee Heights (496), Lewis (502), and Attica (511).

Districts that are too small with more than one high school: Barnes (223), Leroy-Gridley (245), Southern Cloud (334), Rural Vista (481), and Axtell (488).

Districts that are too large relative to the number of high schools they operate: Turner-Kansas City (202), Blue Valley (229), Olathe (233), Emporia (253), Derby (260), Haysville (261), Goddard (265), Maize (266), Salina (305), Hutchinson Public Schools (308), Seaman (345), Newton (373), Manhattan (383), Great Bend (428), Auburn Washburn (437), Dodge City (443), Leavenworth (453), Garden City (457), Geary County Schools (475), Liberal (480), Hays (489), Lawrence (497), and Kansas City (500).

Districts that are too large: Wichita (259) and Shawnee Mission Public Schools (512).

Some of the most important activities we undertook in this study were the on-site visits to a large number of school districts where we interviewed many district representatives. We did this not only because it was required by contract, but also to better understand the dynamics within the districts we identified as targets and in their neighboring districts, which might also be involved in reorganization. We used several criteria to select districts for on-site visits or interviews. First, every one of the 28 districts we identified using the first approach described above was placed on the list. Second, we selected some neighboring districts of those 28 target districts. Third, we obtained additional information about 90 school districts, including the age of their buildings and enrollment projections, and selected some districts based on those factors. Finally, we selected some districts based on being too large, using the second approach to identify target districts described above. In all, we had contact with 64 districts.

We learned a number of things from our on-site visits and interviews: (1) there is substantial resistance to consolidation because of historical, cultural and financial reasons; (2) there is support for state reorganization in extreme cases, where there are declining enrollments and high spending; (3) district officials justified and defended low student performance and high spending; and (4) technology, distance learning, building projects and innovative superintendents were considered essential for surviving consolidation.

Once the on-site visits and interviews were completed, we began to develop reorganization scenarios, ultimately creating three alternative approaches: (1) an approach based on pupil performance and per pupil spending; (2) an approach based on enrollment levels relative to number of high schools; and (3) an approach that took

into consideration both of the first two approaches and resolved differences between them based on a variety of practical considerations, including distance between schools, school capacity (which we obtained through a survey carried out by the Department of Education), and the information we obtained through the on-site visits and interviews.

Tables in the report show the characteristics of target school districts and their neighboring districts, as well as the mergers of districts associated with the three alternative approaches to reorganization. The figures below summarize the results of each approach for the entire state.

(1) For the approach based on pupil performance and per pupil spending, we identified 28 target districts. We examined all neighbors of those districts for possible reorganization with target districts based on their pupil performance, their per pupil spending, and their distance from the target districts. We were unable to reorganize eight of the target districts using those criteria. We found 20 neighboring districts that could be merged with the 20 remaining target districts to create 20 new districts. The result is 284 districts statewide.

(2) For the approach based on school district size, we identified 76 target districts. We examined all neighbor districts for the 74 districts that we felt had high schools that were either too small or too large based on enrollment relative to number of high schools, excess capacity of schools, and distance between schools. We were able to reconfigure 45 of the 50 districts with high schools that are too small by merging them with 29 neighbor districts and creating 34 new districts. We were able to reconfigure six of the 24 districts with high schools that are too large by merging them with seven neighbor districts and creating five new districts. In total, 51 target districts are merged with 36 neighbor districts to create 39 new districts and a total of 256 districts in the state. Some other approach would need to be taken to address the issue in 20 of the 26 districts with large high schools and in the two large districts.

(3) For the combined approach, we were able to reconfigure 56 target districts with 36 neighboring districts to create 43 new districts and a total of 255 districts statewide. As with the second approach, we were unable to resolve concerns in 21 districts by reorganization, which would require other approaches to be taken.

In order to facilitate reorganizing school districts in Kansas, a number of changes need to be made to the state's statutes. A&M recommends that the legislature delegate to the State Board of Education the power to change school district boundaries more easily than is currently allowed. The State Board should consider boundary changes by using three processes to assess alternative: (1) Emergency dissolution, (2) Required boundary change planning, and (3) Review of boundary options. The emergency

dissolution is required for those districts that are less than 80 students in 2000, or less than 100 students in 2001 and have declining enrollment. Those districts are required to have a public hearing and report the results to the State Board. The State Board shall take action to accept the district report or implement one of their own. The required boundary change planning is for all of the other districts identified as part of the 28 original targets on Map 1 in this report. Districts would have three years to work on improvements or recommendations, then if they are still targets would follow the emergency dissolution process. The review of boundary options would be for all of the other districts identified as targets in this report. They would follow the same process as the required boundary change planning districts without the final requirement of dissolution.

APPENDIX III

Wrap Around Services
By Program for FY 2008 - FY 2017
Includes Services Provided to Children of School Age (Grades K-12)

Agency	Program	Program Description	FY08		FY09		FY10	
			AF	SGF	AF	SGF	AF	SGF
Department for Children and Families	Communities in Schools	Grant to provides case management services to at-risk students focusing on improving academics, behavior, attendance and graduation rates.	-	-	-	-	-	-
Department for Children and Families	Jobs for America's Graduates	Assists students at risk of failing in school, provides an avenue for achieving academically, and assists students in ultimately earning credentials that make it possible to exit school and enter post-secondary education and/or the workforce.	-	-	-	-	-	-
Department for Children and Families	Kansas Reading Roadmap (Hysell-Wagner, Kidzlit, et al)	Works with low income schools in rural and urban communities to increase reading proficiency among at-risk children.	-	-	-	-	-	-
Department for Children and Families	Project Impact	Grant that targets at-risk youth ages 14-17 who live in high-risk counties. Recruitment and retention programs develop students' interests in various fields of study.	-	-	-	-	-	-
Department for Children and Families	Epic Skillz	Grant to build employment skills for college and career readiness, targeting middle schools in Hutchinson.	-	-	-	-	-	-
Department for Children and Families	Smartmoves/KS Alliance of Boys and Girls Clubs	Provides comprehensive abstinence-based teen pregnancy prevention and education program to at-risk youth in seven cities and three tribal nations.	-	-	-	-	-	-
Department for Children and Families	Urban Scholastic Center	Serves urban/inner-city children and youth to offer a wide array of services to benefit students grade K-12, including literacy, after school and evening educational programs.	-	-	-	-	-	-
Department of Education	Autism Diagnosis	Train and provide Autism Diagnostic Teams to offer early childhood screenings and/or assist schools and families in developing individual treatment plans and streamlined service delivery.	-	-	-	-	798,000	-
Kansas Department for Aging and Disability Services	Serious Emotional Disturbance (SED) waiver*	Medicaid Home and Community Based Services waiver providing services to children who experience serious emotional disturbance and who are at risk of inpatient psychiatric treatment.	1,954,654		2,503,743		2,486,613	
Kansas Department of Health and Environment - Public Health	DentaQuest - Dental	DentaQuest Foundation grant to provide school-based dental services.	-	-	-	-	-	-
Kansas Department of Health and Environment - Public Health	Medicaid Matching	Medicaid funds to provide school-based dental services.	-	-	-	-	-	-
Kansas Department of Health and Environment - Public Health	School Screening Program	Delta Dental Foundation grant providing dental screenings for children. Beginning in FY 2015 this program provides dental screening supplies to volunteer screeners.	34,000	-	34,000	-	34,000	-
Kansas Department of Health and Environment - Public Health	School Screenings	Federal Health Resources and Services Administration (HRSA) grant providing school-based dental sealants.	80,000	-	80,000	-	80,000	-
Kansas Department of Health and Environment - Public Health	CDC Grant - Dental (School Sealants)	Funding through the federal Centers for Disease and Prevention (CDC) to provide sealants to children.	-	-	-	-	-	-
Kansas Department of Health and Environment - Public Health	Healthy Kansas Schools Grant Program	CDC grant to support school wellness coalitions and coordinators to implement and promote school wellness policies and practices in nutrition and physical activity. Also provides professional development and assistance to school nurses on the daily management of students with chronic diseases.	-	-	-	-	-	-
Kansas Department of Health and Environment - Public Health	Committee for Children's Second Step Program	CDC grant for implementation of social-emotional curriculum for selected schools.	10,000	-	10,000	-	10,000	-

(Table spans two pages and concludes on pages 2-18 and 2-19.)

FY11		FY12		FY13		FY14		FY15		FY16		FY17	
AF	SGF	AF	SGF	AF	SGF	AF	SGF	AF	SGF	AF	SGF	AF	SGF
-	-	-	-		-		-	1,671,424	-	1,789,625	-	1,500,000	-
-	-	-	-	5,419,755	-	102	-	4,100,000	-	3,750,000	-	3,800,000	-
-	-	-	-	-	-	5,201,613	-	10,318,497	-	9,424,343	-	10,259,081	-
-	-	-	-	-	-	-	-	187,299	-	108,085	-	424,905	-
-	-	-	-	-	-	-	-	228,670	-	41,063	-	186,528	-
-	-	162,927	-	122,194	-	122,195	-	199,987	-	219,434	-	219,435	-
-	-	-	-	-	-	-	-	-	-	46,849	-	116,617	-
1,023,464	-	751,643	-	683,661	-	215,000	-	215,000	-	215,000	-	215,000	-
2,807,294		2,794,198		3,015,736		2,267,479		2,329,782		2,316,873		2,281,044	
-	-	-	-	-	-	-	-	30,000	-	30,000	-	50,000	-
-	-	-	-	-	-	-	-	30,000		30,000		50,000	
34,000	-	34,000	-	34,000	-	34,000	-	34,000	-	70,000	-	-	-
80,000	-	150,000	-	80,000	-	-	-	-	-	-	-	-	-
-	-	-	-	60,000	-	60,000	-	60,000	-	60,000	-	60,000	-
-	-	-	-	-	-	120,000	-	120,000	-	120,000	-	120,000	-
16,000	-	16,000	-	16,000	-	22,000	-	22,000	-	22,000	-	32,000	-

Wrap Around Services
By Program for FY 2008 - FY 2017
Includes Services Provided to Children of School Age (Grades K-12) *(Continued)*

Agency	Program	Program Description	FY08		FY09		FY10	
			AF	SGF	AF	SGF	AF	SGF
Kansas Department of Health and Environment - Public Health	Committee for Children's Second Step Program	CDC funding for literature units to support social-emotional curriculum for selected schools.	25,000	-	25,000	-	25,000	-
Kansas Department of Health and Environment - Public Health	Committee for Children's Second Step Program	Social-emotional curriculum materials and evaluations for selected schools.	35,000	-	35,000	-	35,000	-
Kansas Health Policy Authority	School Based Services	These totals include all school based services. Prior to FY 2012 these services were not reported by type of service in the Medical Assistance Report.	14,605,084	5,731,712	27,050,175	9,239,563	25,877,964	7,970,030
Kansas Department of Health and Environment - Health Care Finance	School Based Services	Targeted Case Management	-	-	-	-	-	-
Kansas Department of Health and Environment - Health Care Finance	School Based Services	Rehabilitation	-	-	-	-	-	-
Kansas Department of Health and Environment -	School Based Services	Physical Therapy	-	-	-	-	-	-
Kansas Department of Health and Environment - Health Care Finance	School Based Services	Occupational Therapy	-	-	-	-	-	-
Kansas Department of Health and Environment - Health Care Finance	School Based Services	Speech/Language Services	-	-	-	-	-	-
Kansas Department of Health and Environment - Health Care Finance	School Based Services	Audiology Services	-	-	-	-	-	-
Kansas Department of Health and Environment - Health Care Finance	School Based Services	Mental Health Services	-	-	-	-	-	-
Kansas Department of Health and Environment - Health Care Finance	School Based Services	Other Practitioner Services	-	-	-	-	-	-
Kansas Department of Health and Environment - Health Care Finance	School Based Services	Other Services (cost settlements for local education agencies)	-	-	-	-	-	-

Notes for Department for Children and Families:
Expenditures for program s such as Early Head Start and Early Steps to School Success are not included as these are for children under age 5.
Transfers to KSDE for Parents as Teachers and Kansas Preschool Programs are not included as these are for children under the age of 5.
Prevention programs such as Family Preservation, Healthy Families, etc. are not included.
Child care subsidy payments are not included regardless of the age of the child.

Notes for Department of Education:
Autism Diagnosis program also provides services to younger children; expenditures include entire program.

Notes for Kansas Department for Aging and Disability Services:
Serious Emotional Disturbance (SED) HCBS waiver expenditures are for each federal fiscal year (FFY). SGF share noted to correspond to FMAP percentage, but not provided by agency.

Notes for Kansas Department of Health and Environment - Public Health:
The total number of schools receiving CDC grants for the Committee for Children's Second Step Program are as follows: five schools FY 2008 - FY 2010, eight schools FY 2011 - FY 2013, eleven schools FY 2014 - FY 2016, and sixteen schools FY 2017 - FY 2019.
The agency notes that totals provided are approximate and may not be the exact amounts funded.
School based services also provides services to younger children; expenditures include entire program.

Notes for Kansas Health Policy Authority and Kansas Department of Health and Environment - Health Care Finance:
SGF amount listed includes all state funds (SGF and fee funds).

FY11		FY12		FY13		FY14		FY15		FY16		FY17	
AF	SGF	AF	SGF	AF	SGF	AF	SGF	AF	SGF	AF	SGF	AF	SGF
40,000	-	40,000	-	40,000	-	55,000	-	55,000	-	55,000	-	80,000	-
56,000	-	56,000	-	56,000	-	77,000	-	77,000	-	77,000	-	112,000	-
19,531,897	6,371,810	-	-	-	-	-	-	-	-	-	-	-	-
-	-	412,107	10,157	351,874	8,728	389,746	9,805	481,362	755	426,313	46	477,052	1,196
-	-	3,686,439	1,588,487	3,470,471	1,508,268	3,778,828	1,642,189	4,043,646	1,752,656	3,850,865	1,683,370	3,802,454	1,673,080
-	-	124,005	53,434	126,684	55,049	129,638	56,332	143,947	62,372	124,804	54,794	125,755	55,332
-	-	91,990	39,638	87,912	38,177	95,685	41,555	122,961	53,275	105,778	46,390	93,705	41,230
-	-	12,589,946	5,425,008	12,689,763	5,515,912	14,321,483	6,224,592	15,194,771	6,587,485	14,129,843	6,214,022	14,923,579	6,566,375
-	-	55,453	23,895	47,617	20,676	75,423	32,767	83,751	36,272	77,308	33,888	82,919	36,484
-	-	950,144	407,598	891,864	384,812	1,163,083	498,562	1,214,773	515,900	1,156,933	485,997	999,111	439,609
-	-	2,021,434	871,036	2,322,866	1,009,482	2,050,158	891,075	1,853,468	803,228	1,858,510	804,709	1,663,948	732,137
-	-	609,538	7,805	15,083,906	4,923	15,383,034	6,678	16,009,291	10,594	15,593,007	217,825	17,086,198	501,147

APPENDIX IV

Legislative Post Audit Performance Audit Report Highlights

K-12 Education: Evaluating Transportation Services Funding

December 2017 • R-17-020

QUESTION 1: *Has Transportation Funding Been Allocated to School Districts in Accordance with the Statutory Formula in Recent Years?*

Background Information

State law only requires districts to transport students who must travel at least 2.5 miles and do not live in the same town as their school. On the other hand, the state provides transportation funding for all in-districts students who live at least 2.5 miles from their school.

State transportation funding is based on a statutory formula which allocates funding based on districts' estimated, not actual, transportation costs. The state will provide an estimated $98 million in transportation funding to school districts in the 2017-18 school year through this formula.

- KSDE has correctly executed the numerous calculations in the transportation funding formula for the past five years. These include allocating expenditures between groups of students by distance, plotting per-student expenditures on a chart, determining a curve of best fit, and calculating the transportation FTE for each district. (p.11)

- However, KSDE has continued to implement a funding minimum to the formula which is not authorized in statute. (p.11)

    - *A minimum funding amount was removed from statute in 1973 but KSDE has continued to implement it for the most densely populated districts.*
    - *Over the past five years, KSDE's minimum funding level has provided a total of $45 million more in transportation funding than allowed by law.*
    - *State law does not include a minimum funding level for transportation, and it does not give KSDE the authority to create one.*
    - *KSDE officials told us they continued adding a minimum funding level because some legislators had requested it in previous years.*
    - *Although there is no provision for a minimum funding level in state law, our findings in Question 2 of this audit suggest a minimum might be appropriate.*

- KSDE's methods for counting students do not always align with statute, but the effect on funding is likely minimal. (p.14)

    - *State law requires students for whom "transportation was made available" be counted for funding purposes, even if the student did not actually ride the bus.*
    - *The way KSDE counts students for funding purpose is not consistent with that statutory definition.*

        - *KSDE counts all students who live at least 2.5 miles from school for funding purposes, but does not make sure transportations services were made available to these students.*
        - *For students who live less than 2.5 miles from school, KSDE mostly counts students who were actually transported rather than only counting students for whom transportation was made available.*
        - *KSDE reduces the count of students who only ride the bus one way.*

    - *However, the difference between the statutory definition and KSDE's method for counting students likely has a minimal effect on funding.*

QUESTION 2: *How Does the Funding School Districts Receive for Funded Transportation Services Compare to Their Actual Costs?*

- The state provides transportation funding to districts based on costs estimated through a formula rather than the districts' actual costs.
- We selected a sample of 16 districts across the state and compared their costs for providing required transportation to the amount of funding they received. (p. 17)
- Overall, our sample districts received less funding than it cost them to transport students, but the results vary by district. (p.17)
  - *We estimated the districts in our sample spent about $20 million to provide "funded" transportation services, and received about $16 million in state transportation funding.*
  - *The difference between state transportation funding and the estimated cost of funded services varied significantly across our 16 districts.*
  - *Two large districts in our sample account for most of the difference between funding and costs.*
  - *The mixed results for our sample are not surprising, given that the transportation formula funds districts based on estimated costs rather than actual costs.*
- The funding formula uses student density to estimate transportation costs, but a variety of other factors can also influence costs. (p.20)
  - *The funding formula uses student density to help predict a district's costs because density is strongly related to transportation costs.*
  - *However, the geography of a district and where students live can lead to significant cost differences between districts of similar student densities.*
  - *District policies related to which students the district will transport or how students are assigned to school can also influence costs.*
  - *Last, factors related to bus driver pay and the fuel efficiency of a district's bus fleet can also influence a district's per-student transportation costs.*
- Based on our sample, the current funding formula appears to understate the comparative cost of transporting students who live at least 2.5 miles from school. (p.22)
  - *Under the current funding formula, students who live at least 2.5 miles from school are weighted 2.8 times more heavily than other students when allocating costs.*
  - *For nearly all the districts in our sample, we estimated the comparative cost ratio to transport funded students was significantly greater than the 2.8 ratio currently in statute.*
  - *That is because the vast majority of their total transportation costs were related to transporting students who live at least 2.5 miles from school.*
  - *We estimated a comparative cost ratio of 5.0 might better reflect how districts' costs are allocated between students who live at least 2.5 miles from school and other students.*
  - *We estimate that increasing the comparative cost ratio to 5.0 would increase statewide transportation funding by about $4 million over 2016-17 transportation funding.*

QUESTION 3: *What Types of Transportation Requirements and Funding Mechanisms Do Other Similar States Use to Provide and Fund K-12 Transportation?*

- A 2006 Washington audit identified four primary mechanisms for state funding of transportation services. (p.27)
  - *Predictive or efficiency driven formula funding provides funding at a predicted cost level that assumes similar costs for similar districts. Kansas uses this type of formula.*
  - *Block-grant funding provides funding as part of a per-student grant given to school districts.*
  - *Approved-cost funding provides reimbursement for specific costs incurred by transportation programs.*
  - *Per-unit-allocation funding provides a fixed amount for funding based on a specified unit such as miles driven or students transported.*
- Kansas and the five states we reviewed varied as to which students must be transported. (p.28)
  - *Five of the six states we evaluated, including Kansas, require school districts to provide transportation services, but varied in terms of which students must be transported, ranging from all students to no students*
  - *All six states allow districts to use similar methods to provide transportation services. These include having an in-house bus fleet, contracting for busing, or paying for mileage in lieu of busing.*
- Only three states, including Kansas, provide dedicated transportation funding. (p.29)
  - *Kansas, Missouri, and Oklahoma provide dedicated transportation funding, though Kansas provides funding for a narrower group of students that the other states do.*
  - *Three of the states we reviewed did not provide any specific funding for transportation, although two did consider transportation within their general state aid.*

SUMMARY OF RECOMMENDATIONS

We recommended the Kansas Department of Education remove the minimum funding level from its transportation funding allocation beginning with the 2018-19 school year. We also recommended the department develop a process to ensure their counts are consistent with statutory requirements (p.32).

We recommended the Legislature consider reviewing whether a minimum funding level is appropriate for large, densely populated districts. We also recommended the Legislature consider reviewing the comparative cost ratio to determine if a ratio that better reflects districts' actual costs is more appropriate. (p.32).

AGENCY RESPONSE

The department generally concurred with the audit's findings and recommendations. (p.33)

Although we did not request a formal response from the 16 districts we reviewed part of this audit, three districts provided us with informal feedback. All three districts (Wichita, Shawnee Mission, and Dodge City) expressed concerns regarding our recommendations that KSDE discontinue the funding minimum and that KSDE make other changes to align how the department counts students with statute. The districts noted that changes to how the department allocates funding or how it counts students would likely lead to funding reductions that could be detrimental to students. (p. 33)

HOW DO I REQUEST AN AUDIT?

By law, individual legislators, legislative committees, or the Governor may request an audit, but any audit work conducted by the division must be directed by the Legislative Post Audit Committee. Any legislator who would like to request an audit should contact the division directly at (785) 296-3792.

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PROPOSED SCHOOL FINANCE PLAN
HOUSE SUBSTITUTE FOR SENATE BILL 61
MAJOR POLICY PROVISIONS
Computer Printout SF18-102

- Base aid for student excellence (BASE) will increase from $4,006 to $4,165 in 2018-19. Current law provides a BASE of $4,128 for 2018-19. Beginning in 2019-20, the BASE will increase to $4,302, increase to $4,439 in 2020-21, increase to $4,576 in 2021-22, and to $4,713 in 2022-23. Following 2022-23, the BASE will increase by the CPI.

- Career and technical education (CTE) weighting will be based upon current year in 2017-18 and thereafter.

- CTE weighting was scheduled to sunset July 1, 2019. The CTE study has been completed. This bill would delete the sunset.

- Bilingual education weighting will be based upon current year in 2017-18 and thereafter.

- School-based high-density at-risk pilot program is extended to July 1, 2020.

- The ten percent floor for computing free lunch for any school district offering grades K-12 is repealed.

- The special education funding will increase by $44.4 million in 2018-19 plus $7.5 million each year thereafter until 2022-23.

- Transportation formula for students transported over 2.5 miles has been clarified in statute and remains approximately the same dollar amount as computed in the prior year with a minor adjustment to cost allocation.

- Expands early childhood funding by increasing state aid for three- and four-year-old at-risk by $2,000,000.

- To increase the local option budget (LOB) above 30 percent, school districts must publish a resolution and give the patrons the right to petition and vote. The percentage for the protest petition was made consistent with capital outlay which is ten percent. Patrons have 40 days to gather signatures. Those districts that were previously approved for 33 percent will retain authority.

- LOB state aid is computed using the current year's budget as recommended by the Supreme Court.

- Provides for a minimum LOB of 15 percent.

- School districts must notify the State Board of Education by April 1 of each year if they want to increase their LOB percentage.

- Increases the LOB BASE of $4,490 by the CPI beginning in 2019-20.

- Repeals provision that would count 15 percentage points of LOB in general fund and increase BASE to $4,900.

- Repeals authority for school districts to make expenditures for utilities and property/casualty insurance from capital outlay fund as recommended by the Supreme Court.

- Amends the bond cap to provide that any school district submitting a bond application in excess of $175 million, only $175 million will go against the cap. The cap is increased by the amount of bonds retired the preceding year plus the percentage increase in the Producers Price Index for the last five years.

- Clarifies accountability requirements.

- Amends the law to require that the proportionate share of the general fund weighting for at-risk shall be applied to the LOB and such amount transferred to the at-risk fund.

- Amends the law to require that the proportionate share of the general fund weighting for bilingual shall be applied to the LOB and such amount transferred to the bilingual fund.

- Provides a pilot program for improvement of mental health services for a few selected school districts.

- Reinstates the grandfather clause for special education (guarantees amount received in 2008-09).

ESTIMATED STATE AID INCREASES

House Substitute for Senate Bill 61 – SF18-102

Program	2018-19	2019-20	2020-21	2021-22	2022-23
BASE	$ 4,165	$ 4,302	$ 4,439	$ 4,576	$ 4,713
General State Aid	107,705,000	95,695,000	95,695,000	95,695,000	95,695,000
Special Education State Aid	44,400,000	7,500,000	7,500,000	7,500,000	7,500,000
Four-Year-Old At-Risk	2,000,000	2,000,000	2,000,000	2,000,000	0
Supplemental General State Aid	35,000,000	7,300,000	7,300,000	8,600,000	13,000,000
Mental Health Pilot Program*	7,500,000	0	0	0	0
ACT/WorkKeys	2,800,000				
Teacher Mentoring	500,000				
Adjustments**	(8,000,000)	(3,000,000)			
TOTAL	191,905,000	109,495,000	112,495,000	113,795,000	116,195,000

*The Committee also approved $2.5 million to establish a data system for the mental health pilot program.
**Adjustments—Reduction in new facilities weighting.

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May 1, 2018

To: Curtis Tideman, Legislative Counsel

From: Edward Penner, Principal Research Analyst

Re: Combined Fiscal Effects of 2017 SB 19, 2018 Sub. for SB 423, and 2018 House Sub. for SB 61

This memorandum describes the total amount of increased aid to schools for a six-year time frame beginning in state fiscal year (FY) 2018 attributable to 2017 SB 19, 2018 Sub. for SB 423, and 2018 House Sub. for SB 61. The combined effects of all three bills over that time frame total an increase of approximately $1.007 billion in aid to schools. Approximately $485.5 million of the increase is attributable to 2017 SB 19 for FY 2018 through FY 2023. Approximately $368.0 million of the increase is attributable to both bills from the 2018 Session for FY 2019 through FY 2023. An additional $153.3 million is attributable to increases in local aid for local option budgets (LOB) and increased employer contributions for the Kansas Public Employees Retirement System attributable to the increased aid provided by the three bills combined.

The largest single contributor to the increased aid is the increases in Base Aid for Student Excellence (BASE, formerly Base State Aid Per Pupil). SB 19 (2017) provided for a BASE of $4,006 in FY 2018, $4,128 in FY 2019, and inflationary increases for all years thereafter. The 2018 bills provided for scheduled BASE increases up to $4,713 in FY 2023 and inflationary increases for all years thereafter. For purposes of this memorandum, increases attributable to estimated inflation levels are included in the amount for 2017 SB 19, and the difference between those inflationary increases and the increases scheduled into the 2018 bills are included in the amount for the 2018 legislation in the attached table. Additional increases include special education, Pre-K At Risk, funding for all-day kindergarten, and various changes to other weightings and education programs.

Additionally, for purposes of this memorandum, the state equalization aid for LOBs is included in the section for the bill to which the change of authority was attributable, but the local tax revenue used to finance LOBs is included in the table section labeled “Other Items,” regardless of which year’s bill the authority was attributable. Accordingly, the total amount of additional LOB authority would be the sum of the supplemental general state aid lines for each year and the LOB local authority line in the Other Items section.

For detailed information of all increases in all three bills, please see the attached table.

EFP/kal

Attachment

Combined Aid to Schools Effects by School Years – 2017 SB 19, 2018 Sub. for SB 423 and 2018 H. Sub. for SB 61

	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Totals
2017 SB 19							
BASE Increases	$ 113,820,619	$ 84,790,000	$ 23,066,438	$ 37,971,740	$ 44,605,038	$ 45,500,484	**$ 349,754,320**
Special Education Increases	12,000,000	12,000,000	0	0	0	0	**24,000,000**
Pre-K At Risk Increases	2,000,000	2,000,000	0	0	0	0	**4,000,000**
All Day Kindergarten	60,090,000	0	0	0	0	0	**60,090,000**
At Risk Weighting Increase	21,023,488	0	0	0	0	0	**21,023,488**
Bilingual Weighting Change	4,687,421	0	0	0	0	0	**4,687,421**
High Density At-Risk Change	4,170,246	0	0	0	0	0	**4,170,246**
At Risk 10% Floor	2,511,762	0	0	0	0	0	**2,511,762**
Professional Development	1,700,000	0	0	0	0	0	**1,700,000**
Teacher Mentoring	800,000	0	0	0	0	0	**800,000**
Declining Enrollment Weighting Phaseout	(1,835,149)	(1,835,149)	0	0	0	0	**(3,670,297)**
Transportation Weighting Change	0	0	0	0	(5,000,000)	0	**(5,000,000)**
Supp. Gen. State Aid Effects	(2,372,551)	1,642,255	3,387,045	5,575,720	6,549,744	6,681,230	**21,463,443**
Subtotals — 2017 SB 19	*$ 218,595,835*	*$ 98,597,106*	*$ 26,453,483*	*$ 43,547,460*	*$ 46,154,782*	*$ 52,181,715*	***$ 485,530,382***
2018 Sub. for SB 423 & H. Sub. for SB 61							
BASE Increases	$ 0	$ 25,715,000	$ 72,044,312	$ 57,614,564	$ 52,055,869	$ 51,044,072	**$ 258,473,817**
Special Education Increases	0	32,400,000	7,500,000	7,500,000	7,500,000	7,500,000	**62,400,000**
Pre-K At Risk Increases	0	0	2,000,000	2,000,000	2,000,000	0	**6,000,000**
At Risk 10% Floor Elimination	0	(2,511,762)	0	0	0	0	**(2,511,762)**
ACT and Workkeys	0	2,800,000	0	0	0	0	**2,800,000**
Teacher Mentoring	0	500,000	0	0	0	0	**500,000**
Mental Health and JAG-K Pilot Programs	0	7,515,000	0	0	0	0	**7,515,000**
Transportation Weighting Change	0	1,800,000	0	0	5,500,000	0	**7,300,000**
Supp. Gen. State Aid Effects	0	20,777,912	1,012,500	1,012,500	1,755,000	1,012,500	**25,570,412**
Subtotals — 2018 Sub. for SB 423 & H. Sub. for SB 61	*$ 0*	*$ 88,996,150*	*$ 82,556,812*	*$ 68,127,064*	*$ 68,810,869*	*$ 59,556,572*	***$ 368,047,467***
Other Items (all bills combined)							
Local Option Budget (Local Auth.)	$ 33,766,882	$ (9,264,240)	$ 5,377,222	$ 8,052,268	$ 10,150,243	$ 9,403,448	**$ 57,485,822**
KPERS Attributable to Increased Aid	15,257,000	19,690,000	15,900,000	14,900,000	15,300,000	14,800,000	**95,847,000**
Subtotals — Additional Items	*$ 49,023,882*	*$ 10,425,760*	*$ 21,277,222*	*$ 22,952,268*	*$ 25,450,243*	*$ 24,203,448*	***$ 153,332,822***
Totals	**$ 267,619,717**	**$ 198,019,016**	**$ 130,287,517**	**$ 134,626,792**	**$ 140,415,895**	**$ 135,941,735**	**$ 1,006,910,671**

KSDE Newsroom

Kansas state department of Education NEWS

Seven districts named to take part in Kansans Can School Redesign project

Posted: Aug 8, 2017
Categories: KSDE, Kansas State Board of Education
Author: Ann Bush

TOPEKA — The seven Kansas school districts taking part in the Kansans Can School Redesign project were announced Tuesday, Aug. 8, 2017, during the Kansas State Board of Education meeting.

"We're getting ready to do something we don't know of any other state having done," said Kansas Commissioner of Education Dr. Randy Watson. "We're going to deconstruct the traditional school system and build what Kansans believe best meets the needs of today's students — choice. And, we're doing all of this with existing resources, no new buildings and the same educators."

Twenty-nine school districts (see attached for list of district names) applied for the project. Out of those applications, seven districts, each one representing one of the Mercury 7 astronauts, were selected. Each district designated one elementary school and one secondary school to be redesigned around the five outcomes established by the State Board of Education, the five elements identified as defining a successful high school graduate, and what Kansans said they want schools to provide students.

The vision for education in the state is "Kansas leads the world in the success of each student."

"For the past two years, we've referred to the board's vision for education as our 'moon shot,'" Watson said. "Well, today, with these seven districts representing the original seven Mercury astronauts, we're going to work on putting a man on the moon. It's not going to be easy, and we know we'll encounter plenty of challenges; but we also know doing nothing is not an option."

The following districts and schools, along with the name of the Mercury 7 astronaut they selected, are:

- Coffeyville USD 445: Community Education School and Field Kindley Memorial High (with Roosevelt Middle School staff involved) — John Glenn.
- Liberal USD 480: Meadowlark Elementary School and Liberal High School — Alan Shepard.
- McPherson USD 418: Eisenhower Elementary School and McPherson Middle School — Wally Schirra.
- Olathe USD 233: Westview Elementary School and Santa Fe Trail Middle School — Gordon Cooper.
- Stockton USD 271: Stockton Grade School and Stockton High School — Deke Slayton.
- Twin Valley USD 240: Tescott Elementary School and Bennington Junior-Senior High School — Gus Grissom.
- Wellington USD 353: Kennedy Elementary School and Wellington High School — Scott Carpenter.

These districts and schools will serve as demonstration sites for the remaining 279 Kansas school districts.

The following have committed to partnering with KSDE and the State Board of Education on the project: Lt. Gov. Dr. Jeff Colyer; interim Kansas Commerce Secretary Nick Jordan; business and industry representatives; Dr. Blake Flanders, president and CEO Kansas Board of Regents; John Heim, executive director of the Kansas Association of School Boards (KASB); G.A. Buie, executive director of the United School Administrators of Kansas (USA); Mark Farr, president of the Kansas National Education Association (KNEA); Wayne Pancoast, director and CEO of Jayhawk Area Council of the Boy Scouts of America; Liz Workman, CEO of Girl Scouts of Kansas Heartland; Joy Wheeler, CEO of Girl Scouts of Northeast Kansas and Northwest Missouri; and Wade Weber, department head of 4-H Youth Development and state program leader.

To be considered for the Kansans Can School Redesign project, districts had to agree to redesign one elementary and one secondary school. They also had to have approval by their local school board with a public vote, faculty support with a vote of 80 percent, and support from KNEA or other professional organization. The districts had to be willing to launch a new school redesign in the 2018-2019 school year and be willing to serve as a demonstration site for other districts in Kansas to study, learn from and visit.

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Applications were due by Aug. 1, and KSDE staff members and representatives from KASB and USA served on the selection committee. KSDE's Jay Scott will lead the secondary school redesign, and KSDE's Tammy Mitchell will lead the elementary school redesign.

Background:

The State Board of Education in October 2015 announced a new vision for education in Kansas: Kansas leads the world in the success of each student. To help measure the success of the new vision, the board established five outcomes — social-emotional growth; kindergarten readiness; Individual Plan of Study (IPS); high school graduation rates; and postsecondary completion/attendance.

The board also defined a successful high school graduate as someone who has the academic preparation, cognitive preparation, technical skills, employability skills and civic engagement to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation.
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List of Kansas school districts that applied for the Kansans Can School Redesign project (seven selected school districts are listed in bold):

- Ashland USD 220
- Basehor-Linwood USD 458
- Beloit USD 273
- Burrton USD 369
- Canton-Galva USD 419
- Chaparral USD 361
- Coffeyville USD 445
- Dighton USD 482
- Hillsboro USD 410
- Flinthills USD 492
- Fowler USD 225
- Geary County USD 475
- Kingman-Norwich USD 331
- Leavenworth USD 453
- Liberal USD 480
- McPherson USD 418
- Newton USD 373
- North Lyon County USD 251
- North Ottawa County USD 239
- Olathe USD 233
- Ottawa USD 290
- Renwick USD 267
- Rolla USD 217
- Santa Fe Trail USD 434
- Skyline USD 438
- Spring Hill USD 230
- Stockton USD 271
- Twin Valley USD 240
- Wellington USD 353