

3-87-190-EV

CAUSE NO. 362,516

C 8353

EDGEWOOD INDEPENDENT SCHOOL  
DISTRICT, ET AL

VS.

WILLIAM KIRBY, ET AL

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>

IN THE 250TH JUDICIAL

DISTRICT COURT OF

TRAVIS COUNTY, TEXAS

FILED  
IN SUPREME COURT  
OF TEXAS

JUN 21 1989

JOHN T. ADAMS, Clerk

By \_\_\_\_\_ Deputy

STATEMENT OF FACTS

VOLUME XXIV OF XLVI

FILED

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THIRD COURT CLERK  
SUSAN K. BAGE, CLERK

TAKEN FEBRUARY 26, 1987

MONICA ROSS WEIDMANN

Official Court Reporter  
250th Judicial District Court

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V.24-25

CAUSE NO. 362, 516

EDGEWOOD INDEPENDENT SCHOOL > IN THE 250TH JUDICIAL  
DISTRICT, ET AL >  
>  
>  
VS. > DISTRICT COURT OF  
>  
>  
>  
WILLIAM KIRBY, ET AL > TRAVIS COUNTY, TEXAS

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## STATEMENT OF FACTS

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BEFORE THE HONORABLE HARLEY CLARK, JUDGE PRESIDING

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## APPEARANCES:

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Attorneys at Law, 517 Petroleum Commerce Building,  
201 N. St. Mary's Street, San Antonio, Texas 78205.

-and-

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Cambridge, MA 02138

-and-

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ATTORNEYS FOR THE PLAINTIFFS

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9 ATTORNEYS FOR THE PLAINTIFF-INTERVENORS

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12 78711-2548

13 -and-

14 MR. DAVID THOMPSON, Office of Legal Services,  
15 Texas Education Agency, General Counsel, 1701 N.  
16 Congress, Austin, Texas 78701

17 ATTORNEYS FOR THE DEFENDANTS

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20 at Law, 1500 United Bank Tower, Austin, Texas  
21 78701

22 -and-

23 MR. ROBERT E. LUNA, MR. EARL LUNA, and  
24 MS. MARY MILFORD, with the Law Office of EARL  
25 LUNA, P.C., 2416 LTV Tower, Dallas, Texas 75201

-and-

MR. JIM DEATHERAGE, Attorney at Law,  
1311 W. Irving Blvd., Irving, Texas 75061

-and-

## 1 APPEARANCES CONT'D

2  
3 MR. KENNETH C. DIPPEL, MR. JOHN BOYLE,  
4 MR. RAY HUTCHISON, and MR. ROBERT F. BROWN, with  
5 the law firm of HUTCHISON, PRICE, BOYLE & BROOKS,  
6 Attorneys at Law, 3900 First City Center,

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17 ATTORNEYS FOR THE DEFENDANT-INTERVENORS

18 BE IT REMEMBERED that on this the 26th day of  
19 February, 1987, the foregoing entitled and numbered cause  
20 came on for trial before the said Honorable Court,  
21 Honorable Harley Clark, Judge Presiding, whereupon the  
22 following proceedings were had, to-wit:  
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1 FEBRUARY 26, 1987

2 MR. O'HANLON: Your Honor, for our next  
3 witness, we call Dr. Deborah Versteegen.

4 THE COURT: Okay.

5 DR. DEBORAH VERSTEGEN

6 was called as a witness, and after having been first duly  
7 sworn, testified as follows, to-wit:

8 DIRECT EXAMINATION

9 BY MR. O'HANLON:

10 Q. Would you state your full name for the record?

11 A. Deborah Ann Versteegen.

12 Q. All right. Where do you live?

13 A. Charlottesville, Virginia.

14 Q. Could you detail for us your educational background?

15 A. I received a bachelor of arts, a liberal arts degree  
16 with an English and philosophy major and a chemistry  
17 minor from Loretto Heights College in Denver,  
18 Colorado in 1969. In 1972, I received a master's of  
19 education in curriculum and instruction from the  
20 University of Rochester, in Rochester, New York. In  
21 1981, I received a master's of science from the  
22 University of Wisconsin in education administration.  
23 And in 1983, I received a Ph.D from the University of  
24 Wisconsin in educational administration.

25 Q. If you want to get comfortable, we can move that

1 microphone.

2 A. Okay.

3 Q. All right. What area was your dissertation?

4 A. My dissertation was in the area of education finance.

5 Q. Okay. Have you worked in the area of school finance  
6 since the time your Ph.D was confirmed on?

7 A. Yes.

8 Q. Could you tell us a little bit about your  
9 professional history, what you've done since you've  
10 gotten your Ph.D?

11 A. I was an assistant professor at the University of  
12 Texas from 1984 to 1986, director of the  
13 mid-management supervision program. And I taught in  
14 the area of mid-management supervision. My research  
15 was in the area of education finance. In 1986, I  
16 joined the University of Virginia, both teaching  
17 education finance and researching in that area.

18 Q. Okay. Were you retained to do a study with respect  
19 to school finance, particularly with respect to  
20 Texas?

21 A. Yes.

22 Q. How did that come about?

23 A. The legislative budget board had asked for four  
24 levels of budget to be submitted by the Texas  
25 Education Agency. I was asked to look at possible

1 reductions for what amounted to approximately level  
2 1.5 to level two. That is, a five and a ten percent  
3 reduction. And look at the impact of these  
4 reductions on the State Board of Education goals.

5 Q. Okay. When you're talking about five and ten  
6 percent, how much money are you talking about?

7 A. Approximately \$250 million and \$500 million,  
8 respectively.

9 Q. Okay.

10 MR. O'HANLON: May I approach the witness,  
11 Your Honor?

12 THE COURT: Yes.

13 (Defendants' Exhibit No. 48 marked.)

14 Q. Dr. Verstegen, I'm handing you now what's been marked  
15 for identification as Defendants' Exhibit No. 48.  
16 Is that a copy of the study that you did?

17 A. Yes.

18 Q. All right.

19 MR. O'HANLON: Your Honor, we would offer  
20 Defendants' Exhibit 48. We've already handed a copy  
21 to counsel.

22 MR. KAUFFMAN: Your Honor, I would object,  
23 unless I know what it's being offered to prove.

24 MR. O'HANLON: It's a study on the school  
25 equity system. It's offered as a discussion of that

1 system.

2 MR. KAUFFMAN: Is it offered in support --  
3 is the entire study offered as relevant to the issues  
4 of the constitutionality of the Texas school finance  
5 system?

6 MR. O'HANLON: It's offered as evidence in  
7 the case.

8 MR. KAUFFMAN: Well, then it's -- Your  
9 Honor, I object. I need to know what it's relevant  
10 to, that's all. Whatever issues it's relevant to.

11 THE COURT: The objection is the relevancy.  
12 That gives you the opportunity to explain the  
13 relevancy of it.

14 MR. O'HANLON: The relevancy of it, Your  
15 Honor, is the purpose of this study -- as the study  
16 was designed, was to determine how to effectuate cuts  
17 in the program without impacting equity, or the best  
18 ways to do it. As a design, what Dr. Verstegen then  
19 did, was to analyze equity in the State of Texas  
20 against a number of matters. She ran a number of  
21 correlations to determine whether student  
22 performance, things of that nature, and how they  
23 related to expenditures and a number of other  
24 factors. So it's a hard look at the school system in  
25 the State of Texas. And I think it's relevant to the

1 determination before the Court to determine equity.  
2 To determine, in some respects, what we're buying by  
3 looking at the correlations. What kind of results  
4 we're getting from expenditures, things of that  
5 nature, at least in terms of test scores. It has  
6 information on distribution of teachers in the state  
7 by wealth and by a number of categories. And they're  
8 all relevant to the issues before the Court.

9 MR. KAUFFMAN: Your Honor, one more thing,  
10 if I may. Let me take the witness on voir dire for  
11 just a second, please, before we agree.

12 THE COURT: Okay.

13 VOIR DIRE EXAMINATION

14 BY MR. KAUFFMAN:

15 Q. Dr. Verstegen, on Appendix C of your paper labeled  
16 Exhibit 48, I think you've included parts of a  
17 doctoral dissertation, is that right, on Appendix C,  
18 starting on Page 143?

19 A. I don't have the page number, but Appendix C is part  
20 of a doctoral dissertation to which I have referred  
21 in the body of the text.

22 Q. But this is not a paper that you wrote, is that  
23 correct?

24 A. I did not write it, I supervised the writing of that  
25 paper as chairperson of the dissertation committee.



1 Q. But you're not the author of that report, is that  
2 right?

3 A. Exactly.

4 MR. KAUFFMAN: Your Honor, we would object  
5 to Appendix C as hearsay, bringing on someone else's  
6 study as part of her report.

7 MR. O'HANLON: This witness is an expert.  
8 This paper, this is the type of opinion that  
9 can be relied on by an expert witness.

10 THE COURT: Okay. I'll overrule. I'll  
11 overrule both objections. We'll have 48 in evidence.

12 (Defendants' Exhibit No. 48 admitted.)

13 MR. O'HANLON: I don't know how the Court  
14 wishes to proceed. I've got an extra copy, if you  
15 want to take notes in the margin, or something of  
16 that nature. And then we'll have a marked copy for  
17 the record.

18 THE COURT: Do we have a report marked?

19 MR. O'HANLON: Yes, Your Honor, it's  
20 Defendants' Exhibit No. 48.

21 THE COURT: Okay.

22 DIRECT EXAMINATION (RESUMED)

23 BY MR. O'HANLON:

24 Q. Dr. Verstegen, could you tell us a little bit about  
25 your study design?

1 A. Yes, I basically -- excuse me, I basically looked at  
2 alternatives to current law for reductions in aid.  
3 And I looked at those with regards to four goals of  
4 the State Board of Education. The first goal was  
5 student performance. The second goal relates to a  
6 well balanced curriculum. The third goal relates to  
7 attraction and retention of quality teachers. The  
8 fourth goal that I looked at of the fifth goal of the  
9 State Board of Education, relates to financing an  
10 equitable system in the State of Texas for all  
11 students.

12 Would you like me to detail each of the goals  
13 and the designs, or is there a particular goal that  
14 you would like me to focus in on?

15 Q. Well, I think I'm going to want to focus in on all of  
16 them, actually, in turn.

17 A. Okay.

18 Q. I think they're all relevant to the --

19 A. I'll summarize this, and if there's additional  
20 details, please let me know.

21 Basically, in the beginning, I mentioned -- and  
22 this followed through the study, that there's overall  
23 and in general, three things that a state can do when  
24 a reduction in aid is the goal. And one of these  
25 involves a reduction in revenues -- excuse me, when

1 cost estimates are lower than anticipated  
2 expenditures, one of them is a reduction in aids,  
3 another is an enhancement of revenues, and the third  
4 is an accounting change.

5 Q. Uh-huh.

6 A. I then detailed overall reduction in aids  
7 methodologies. And in the first part, included a  
8 summary of what was to come later. In Section 2, I  
9 detailed the methodology for examining each of the  
10 reductions of aid in terms of the State Board of  
11 Education's goals. So this included the methodology  
12 for each of these. And further, the methodology, in  
13 most cases, was an emperical methodology, it looked  
14 at actual numbers. And it looked at, for the most  
15 part, the entire State of Texas with regards to these  
16 goals.

17 Q. Okay. To do an empirical analysis, let's talk about  
18 equity for a minute. Was it necessary to establish a  
19 baseline or some kind of determination about where we  
20 are right now with respect to equity?

21 A. Well, in order to see how a reduction in aid -- an  
22 option, there were approximately between 26 and 30  
23 options that I looked at for reductions in aid. In  
24 order to see how that might change the equity of the  
25 system, I established a baseline and looked at equity

1           in the Texas Foundation School Program in 1985-'86,  
2           utilizing actual data.

3       Q.    Okay.  Could you tell us about how you went about  
4           doing that?

5       A.    Yes.  I detailed this beginning on Page 10.  First of  
6           all, there is substantial literature at this point in  
7           time on how one measures equity in a state finance  
8           system.  It has grown-up approximately over the last  
9           ten years.  And these measurements of equity, I'll  
10          call "ex post conceptions," they look at actual  
11          spending patterns after the districts have made their  
12          decisions to spend.  This is -- this was the  
13          conception which guided the study.  Also, I looked at  
14          state law, the Texas Education Code.  I'm not a  
15          lawyer, but I do feel that it speaks very clearly to  
16          the equity of the Texas system and what the intent  
17          is.  And I have -- let me find that exact section,  
18          it's in Section 16.001 of the Texas Education Code,  
19          the declaration of policy.

20                   MR. GRAY:  Here is my copy, if you want to  
21           read it.

22       A.    "It is the policy of the State of Texas that the  
23           provision of public education is a state  
24           responsibility and that a thorough and efficient  
25           system be provided and substantially financed through

1 state revenue sources so that each student enrolled  
2 in the public school system shall have access to  
3 programs and services that are appropriate to his or  
4 her educational needs and that are substantially  
5 equal to those available to any similar student,  
6 notwithstanding very local economic conditions." And  
7 in looking at equity, one asks a question, "Equity  
8 for whom? Is it equity for taxpayers? Is it equity  
9 for students?" To me, this speaks very clearly that  
10 it's equity for students that is the concern -- is  
11 the concern here. I therefore investigated equity,  
12 in terms of students.

13 Q. Are there a number of methodologies to measure equity  
14 for students?

15 A. There are -- overall, one can look at inputs,  
16 outputs, or outcomes.

17 Q. You're going to have to explain to us what each one  
18 of those are.

19 A. Inputs, equality or fairness in dollars distributed  
20 to students. Inputs, equality or fairness in a  
21 comparable program for students. Although I'm  
22 mentioning this, I didn't look at it, because state  
23 law under H.B. 246 requires a comparable program, as  
24 I read it, for all students.

25 Outputs would look at, do students achieve, for

1           example, similar results on testing.

2       Q.    Is that outcomes?

3       A.    Outputs.

4       Q.    Okay.

5       A.    Outcomes would relate to jobs.

6       Q.    Okay.

7       A.    Ability to -- ability to capture equivalent types of  
8           jobs, regardless of where you're educated.

9           In the sense of the 1985-'86 school year of --  
10          the House Bill 72 had just been enacted, so outcomes  
11          were very difficult to measure as a result of this  
12          change. I did look at correlations with test scores  
13          for outputs. Other output measures are quite  
14          difficult to quantify --

15       Q.    Okay.

16       A.    -- in terms of contribution to society, and so forth.  
17          So I did look at test scores as outputs. And with  
18          regards to inputs, one might look at actual  
19          expenditures, or one might look at, for example,  
20          revenues. Actual expenditure data were not  
21          available. I looked at revenues. I looked at not  
22          just Foundation School program revenues, because that  
23          didn't capture -- that didn't capture enrichment or  
24          additional funds that go beyond the Foundation School  
25          program. I looked at all dollars, total state and

1       local dollars.

2               And there's some very fine lines there that I  
3       would like to make, and that is co-curricular  
4       enterprizing is not looked at. That's generally -- I  
5       refer to it as a revolving fund. At the school  
6       district level, the money you take in, you use for  
7       that area and you generally turn it back around.

8               And in school finance literature, co-curricular  
9       enterprizing is not utilized. I looked at total  
10      state and local revenues with regards to establishing  
11      a baseline that measured -- that utilized horizontal  
12      measurements. That is, equal dollars for equal  
13      needs. Because I was looking at equal dollars for  
14      equal needs, I did not want to capture additional  
15      dollars that were provided for similar needs. And  
16      what I'm referring to here, for example, some  
17      students perhaps are more expensive to educate, to  
18      give the very same education to. So their cost of  
19      education is more expensive, perhaps than a regular  
20      student. It's an additional dollars for these  
21      additional needs that buy the very same thing. So I  
22      didn't -- I adjusted -- I made allowable adjustments  
23      in the revenue variable. And I can detail those, if  
24      you would like me to.

25   Q.    Yes, if you would, briefly.

1 A. Please excuse me, I'd just like to get something  
2 here.

3 The state revenue variable, for example,  
4 included the available school fund. In that case, it  
5 didn't include textbooks, it didn't include money for  
6 teachers' retirement. The state revenue then  
7 included all of the available school fund money, with  
8 the exception of bilingual summer school, because it  
9 wasn't readily available in the files. It did  
10 include virtually everything else in the available  
11 school fund. Local revenue was the tax levy from the  
12 local district. And budgets were utilized for the  
13 data source. So it was self reports of budgets by  
14 school superintendents.

15 And the total state and local revenue figure,  
16 once it was summed for each district, excluded  
17 transportation costs. And according to Bob Berne,  
18 and Leanna Stiefel, and some of the experts in this  
19 area with whom I've consulted, I've consulted with  
20 Bob Berne. And in the book, it specified that  
21 transportation doesn't really relate to children's  
22 programs. It's additional money that doesn't relate  
23 to an equal treatment of equals, so it's the least  
24 related to program cost.

25 Q. When you say, "the book," what book are we talking



1           about?

2   A.    I beg your pardon.  It's the "Measurement of Equity  
3           in School Finance," a textbook by Bob Berne and  
4           Leanna Stiefel.

5   Q.    You took the transportation out?

6   A.    I subtracted it, the actual cost of transportation,  
7           because we wouldn't want one district to look like it  
8           had more money than another, because its schools were  
9           far apart and the transportation costs were making  
10          that difference.  We wanted to actually look at the  
11          real revenue differences.

12   Q.    Okay.

13   A.    Okay.  And to the bottom line of total state and  
14          local revenue, with transportation subtracted, the  
15          dollar figure was deflated by the Price Differential  
16          Index.  The Price Differential Index, we can  
17          generally or grossly compare to a consumer price  
18          index.  And it more or less relates to the difference  
19          in a purchasing power of the Education Code.  So  
20          these dollars -- by deflating these revenues by that  
21          index because money was sent out to equalize the  
22          differences in the purchasing power of the dollars,  
23          because one district had to pay \$2.00 for something  
24          that was 50 cents in another district, we wouldn't  
25          want that to show up as a difference in resources,

1           because it was buying the same thing. So it was  
2           deflated by the Price Differential Index.

3           Now, there are two parts in what I did to the  
4           methodology to get to per pupil dollars. The first  
5           part was to get a revenue variable, a revenue number  
6           figure. And the second part was to divide that by  
7           students, to find out how many dollars per students  
8           are available in each of these districts across  
9           Texas, so that they could be compared.

10       Q.   Okay. I need to back up for a second. When you said  
11           you deflated for the Price Differential Index, is  
12           that supported by the literature in equity analysis?

13       A.   I believe that everything I did here is supported by  
14           the literature in equity analysis. Bob Berne says  
15           that if you look -- that the most preferable object  
16           to look at is price adjusted dollars. And I have  
17           included citations in the methodology. Jay Chambers,  
18           for example, says, "If a cost of education index is  
19           adopted, then expenditure" -- and in this case, "(and  
20           revenue)" I've included, it wasn't in the actual  
21           quote, but these are two things that you can  
22           exchange, "figures must be deflated by this index so  
23           that disparities are measured in real rather than  
24           nominal terms." So you're actually looking at the  
25           purchasing power of the dollar in these districts and

1           what they do buy.

2   Q.    Okay.

3   A.    Also, Bob Berne mentions this in another source that  
4           was produced by the Education Commission of the  
5           States, with authors Odden, Berne and Stiefel, in  
6           1979. So, yes, it's considered common practice, I  
7           would say, to utilize a Price Differential Index  
8           deflater or cost of education index deflater in the  
9           methodology. And I was trying to use methodology  
10          that had the strength of the literature and the  
11          support of folks that had been working quite some  
12          time in the field behind it, so I did do that. So  
13          that provided a dollar figure then.

14               Excuse me, does that answer your question?

15   Q.    Uh-huh. Yes, ma'am.

16   A.    That provided a dollar figure per district.

17               Then it was an aggregate dollar figure. I  
18          wanted to get to per pupil revenues, because, oh,  
19          Dallas would look like it had lots of money compared  
20          to a small district if I just used aggregate dollars,  
21          so I wanted to look at actual dollars per pupil.

22               And I took then, as the second part -- the  
23          first variable was revenue, the second was pupils,  
24          and took the regular ADA as the number of pupils in  
25          the district. To that, I added a weight for special

1 education, vocational education, bilingual education,  
2 compensatory education, and gifted and talented  
3 education. For example, the state formula sends out  
4 an additional 20 percent for each student in  
5 compensatory education, so it's weighted at a .2.  
6 So, because the revenue figure was that much higher  
7 for the compensatory education child, that child was  
8 weighted then, as 1.2. So that when you divided one  
9 into another, more or less, the additional money for  
10 those additional needs were taken into account. This  
11 also has the support of the literature behind it and  
12 I've cited this in the document. And for example, it  
13 said that by weighting the ADA figure, that you're,  
14 in fact, combining an equal assessment with equals,  
15 with an unequal assessment of unequals, so you're --  
16 this is a methodology that's been utilized in and is  
17 supported.

18 Then, if we look further at additional  
19 adjustments in the Foundation Program to aid  
20 districts in paying for these additional costs  
21 associated with student need, we also find additional  
22 costs associated with district need, such as the  
23 small district adjustment in the sparsity adjustment.  
24 To remove the additional money that was provided for  
25 this same education, because of the diseconomies of

1 scale in this case, the small district weight was  
2 added to the pupil count. Basically, how this was  
3 done, is you take the dollars that were allowed to a  
4 district -- for the small district allotment, and you  
5 take the basic allotment to derive a weight. And  
6 that weight is added to each student.

7 Finally, I looked at the data, both with and  
8 without sparse districts to account for that  
9 additional factor. And I have this detailed for a  
10 sample district to provide the actual numbers.

11 Finally -- so this provided the student count.  
12 And we had one, revenue per district. And two, the  
13 students per district as I've defined it. Then it  
14 was simply divided to find what dollar per pupil was  
15 being received across Texas in each Texas district.  
16 It was this figure that was then measured to  
17 determine the equity of the system for the baseline,  
18 and for each of the options.

19 Q. Okay. Did you include capital outlay or  
20 construction, things of that nature, in your numbers?

21 A. No, I did not.

22 Q. Why not?

23 A. Capital outlay is not included in this analysis, or  
24 in most of these analyses, because it's considered a  
25 long-term investment and it has long-term benefits.

1        So, attributing the cost to any one year is extremely  
2        difficult. A district, for example, could have just  
3        finished paying off for capital construction, but may  
4        reap those benefits for the next 30 years. But they  
5        won't show up in the analysis, because they are  
6        paying for it at this moment. So it's not something  
7        that's considered in the analyses, in general.

8        Q. Does that position have the support of the literature  
9        in equity analysis?

10      A. It does.

11      Q. Okay. All right. Now that we've got our enrollment  
12      -- our per student expenditure figures, what do we do  
13      with them? How do we measure them for equity?

14      A. Let me turn to the section that looks at the  
15      measurements for the baseline. And that section, oh,  
16      beginning on Page 47, where I'm looking at the  
17      measurements of the difference between the dollars  
18      per student in the program as it was currently  
19      operating in '85-'86. I utilized several measures to  
20      look at the equity of the system. I looked at -- and  
21      there is a table on Page 48, which includes most all  
22      of these measures. I looked at the standard  
23      deviations of the distribution. I looked at the  
24      coefficient of variation of the distribution. Both  
25      of these, along with the next one, the Gini

1 Coefficient, looks at how the revenues vary across  
2 districts. And they provide statistics which  
3 determine, or are useful for comparison in the  
4 variation across the districts.

5 Q. Okay.

6 A. The Gini Coefficient, for example, looks at the  
7 question of do equal percentages of students receive  
8 equal percentages of revenue, and it goes between  
9 zero and one. And the closer you are to zero, the  
10 more equitable the objects you're measuring.

11 Q. Okay. You're going to have to define that a little  
12 better. We've heard that -- if you can -- we've  
13 heard the term "Gini Coefficient," but nobody has  
14 defined it at this point.

15 A. Okay. Can I draw it?

16 Q. Yes, ma'am.

17 A. Because some of these things are -- let's see, do you  
18 have -- okay. This accesses expenditures.

19 Q. For purposes of the record, that is the vertical  
20 access?

21 A. The vertical access. This access, the horizontal  
22 access is pupils. Now, as equal percentages of  
23 expenditures go up on this access, they increase.  
24 And as equal numbers of pupils go up on this access,  
25 they increase. Perfect equity, or what we'll call

1 absolute equity in this case, would be a horizontal  
2 line. As one percent of students are provided with  
3 one percent of revenues, two percent of students are  
4 provided with two percent of revenues. This line  
5 shows that that's perfectly equal as you go through  
6 the distribution. Now, something that is associated  
7 with this measure, is the Lorenz curve. And what  
8 happens is that as you plot this, as you plot one on  
9 the other, for each district, a Lorenz curve, for  
10 example, this type of Lorenz curve would show that it  
11 dips below this horizontal -- excuse me, this line.  
12 This would be -- this would show the extent of  
13 disparity from the line. But in terms of numbers,  
14 that's not extremely useful because it's a pictorial  
15 representation and it's hard to compare across states  
16 and across the United States. So, this picture is  
17 converted into numbers through the Gini Coefficient.  
18 And the Gini Coefficient then, is equal to -- we'll  
19 call this Area A and we'll call this Area B. The  
20 Gini Coefficient is equal to Area A divided by Area A  
21 and B, gives the number associated with the inequity.  
22 This number then runs from zero to one. The closer  
23 it is to zero, the more equitable is the  
24 distribution.

25 Q. Okay. Now --



1 A. Okay.

2 Q. And did you compute a Gini Coefficient for the State  
3 of Texas?

4 A. I did.

5 Q. Okay. And is that that .075 that's displayed on  
6 Table 3.8?

7 A. Yes. And when sparse districts are removed from the  
8 analysis, it's .074, so it's somewhat less than  
9 one-tenth of one.

10 Q. Okay. Are we to conclude from the difference there,  
11 that the sparse districts do not have a particularly  
12 disequalizing impact in Texas?

13 A. I don't think we would want to make a conclusion from  
14 one -- one measure.

15 Q. Okay. But the proximity of those numbers would lead  
16 one to believe that there's not a whole lot of  
17 difference, is that right?

18 A. Yes, it would.

19 Q. Okay. And we're going to talk about comparing them.  
20 I understand your reticence to base a judgment on one  
21 index or something to that nature, so we're going to  
22 talk about all of them.

23 Is that a reasonable -- what conclusion do you  
24 draw, just -- is that a reasonable Gini Coefficient,  
25 is that a horribly unequitable number, I mean, how

1           does it compare to other states or other kinds of  
2           measures? What it would be?

3       A.    On the scale of one to ten, then you could say this  
4           is less than one.

5       Q.    Okay. How does that translate?

6       A.    Well, that shows that their, according to this  
7           measure, there's strong reason to believe that the  
8           system is reasonably equitable. I've never seen a  
9           .00, for example.

10      Q.    Okay. All right. Let's talk about the next measure  
11           that you want to talk about.

12      A.    The next measure, as shown on that table, is the  
13           McLoone Index. And some finance -- some individuals'  
14           concern with fairness in school finance feel that  
15           attention should be focused only on the bottom half  
16           of the distribution, that the top should be left to  
17           do what they would like. And that you should concern  
18           yourself with that bottom part from the median, or  
19           the middle district -- or the middle student, in this  
20           case, down. And that's what's in -- this McLoone  
21           Index looks at. It looks at the fairness of the  
22           distribution for the bottom half of the students in  
23           the State of Texas. Basically, the measure will run  
24           from zero to one, but here it's reversed. The closer  
25           you get to one, the more equitable the distribution

1 for the bottom half of students.

2 Q. Okay. Can you kind of tell us how you go about  
3 computing that?

4 A. You take the total dollars that are spent in this  
5 state on students below the median. And when I say  
6 total, this is according to the definition we have  
7 just gone through. You look at what is being spent  
8 on those students, and then you would look at what it  
9 would cost if all students were receiving the dollar  
10 amount of the median student. And you divide the  
11 second into the first. You divide -- what if all  
12 students were receiving the median dollar amount per  
13 student into the dollar amounts they really are  
14 receiving. So you see if that number was the same,  
15 if they were receiving that same dollar amount, it  
16 would be one. That's why the closer you get to one,  
17 the more fair the distribution is.

18 Q. Okay. And you do that for the bottom -- for the  
19 median below, is that correct?

20 A. Exactly.

21 Q. Okay. And you did that for Texas and came out with a  
22 .933 McLoone Index?

23 A. Yes.

24 Q. How does that relate to other states or other systems  
25 that you've looked at?

1 A. I do, in terms of relation to other states, I have  
2 included here, the -- on Page 51, and Page 52, and  
3 Page 53, values for 35 states. These values are 1976  
4 values. I included them to see, because as we may  
5 discuss later, I wanted to compare Texas over time.  
6 In other words, if I was going to be suggesting  
7 alternatives to current law for reduction in aid, and  
8 if the new system showed that it had reduced equity  
9 over time, I may have considered alternatives that  
10 would have changed the current system quite  
11 substantially.

12 Q. Okay. So if we compare that .933 McLoone Index to  
13 Texas in 1976, I'm on Page 52 now --

14 A. Well, if you compare them, you'll see that there has  
15 been a change. That in 1976, it was .884 and now  
16 it's .933. So the equity has increased with the  
17 lower half of the distribution. That these -- the  
18 kids are getting more dollars in these areas that are  
19 below the median.

20 If you look at it in terms of the distribution,  
21 you see it runs from .72 to .961. And today, Texas  
22 would be about sixth in the nation in terms of  
23 equitability on that measure, if you utilize these  
24 numbers. They're 1976 numbers, though, so I don't  
25 know if I'm suggesting that you should.

1 Q. Okay. But we can compare ourselves to 1976, which  
2 was also one year after a significant reform in  
3 educational finance and see how we stood versus at  
4 least ourselves, back then?

5 A. I think comparing yourself to yourself is a strong  
6 way to look at the equity of a system. And that over  
7 ten years, the McLoone Index definitely shows  
8 improvement for the kids below the median in terms of  
9 dollars that they received.

10 I would like to say that this is an  
11 inflation-proof measure, so inflation does not figure  
12 into this. The only measures that I utilize that  
13 inflation does make a difference on, and you need to  
14 be very careful when you look at them, are the range,  
15 the restricted range, and the slope. And those are  
16 not -- are very sensitive to inflation, this one is  
17 not.

18 Q. Okay. Why is this one not?

19 A. It's in the mathematics. In the literature, Bob  
20 Berne also makes a strong point of the  
21 inflation-proof nature of the measure.

22 Q. Okay.

23 A. If I can use -- okay.

24 Q. Go ahead.

25 A. No, that's fine.

1 Q. All right. Back to Page 48, you look at -- one other  
2 question with respect to the McLoone Index. Once  
3 again, if you're comparing it with all districts to  
4 all districts excluding the sparse districts, I  
5 notice that there's not much of a difference between  
6 those two measures?

7 A. The districts compared were only those below the  
8 median expenditure per student. And when you compare  
9 those districts and exclude the sparse districts,  
10 there's very little difference. It's -- you have an  
11 index of .932 instead of .933, so about  
12 one-thousandth of a change.

13 Q. Okay. Does that lead you to believe, once again,  
14 that the existence of sparse districts may not be  
15 that disequalizing by this measure?

16 A. This measure shows very little difference when  
17 they're included or excluded.

18 Q. Okay. Let's talk about the coefficient of variation.  
19 Would you -- did you calculate that?

20 A. Yes, that is the third measure. The coefficient of  
21 variation is a standard deviation divided by the  
22 mean. It looks at the spread in the distribution.  
23 And the standard deviation was found to be 15.89.  
24 Basically, what that means, is 15.89 percent of the  
25 mean -- that dollar amount, that two-thirds of all

1 students within the state fall within that dollar  
2 amount. If you calculate it out, I believe it's  
3 something like \$380.00. And nine-tenths will fall  
4 within two standard deviations, so 15.8 plus 15.8,  
5 31.6.

6 Q. Okay. Could you kind of maybe draw that for us and  
7 explain that -- a bell curve, and show us how that  
8 works?

9 A. I'll try. I'll do my best.

10 Now, if you consider that the distribution of  
11 revenue in the State of Texas is this shape  
12 (indicating), the assumption is it's a bell curve.  
13 Then the middle here will be the mean. And for a  
14 standard deviation, you would say that within this  
15 area right here (indicating), about -- about 35 --  
16 34, excuse me, percent of the students would fall.  
17 That's within one standard deviation, it goes on both  
18 sides of the mean.

19 When you get to two standard deviations -- most  
20 of your students should fall within two standard  
21 deviations, and you have about 96 percent of the  
22 students within two standard deviations of the mean.  
23 There's a very small percentage outside on either  
24 end, on either tail. And they would then compromise  
25 -- comprise the difference, oh, a little bit -- I'm

1           rounding the numbers, about two percent on each side.  
2           So two times two equals four.

3       Q.    Okay. Now, I notice that, back to Page 52, that in  
4           1976, that Texas had a coefficient variation at 22.5.  
5           And now that we've got one of 15.89. What kind of  
6           difference is that?

7       A.    Well, it's -- the difference is on the Table. It's  
8           an actual difference of .66 -- 6.6, excuse me. It's  
9           a percentage difference of approximately 30 percent.  
10          So this has -- so the range is not as large, the  
11          dollars are not as big as in prior law.

12       Q.    Okay. So in other words, we've made the bell curve  
13           higher, and therefore narrower than it was?

14       A.    Exactly.

15       Q.    So if we were to look at that same bell curve, and if  
16           this is the 22, the new system would look something  
17           like that (indicating)?

18       A.    You've included more people, yeah, within a more  
19           restricted range. You've restricted your range.

20       Q.    Okay. So --

21       A.    In other words, there is not as much variation as  
22           before.

23       Q.    Okay.

24       A.    A little less than a third less than there was.

25       Q.    Okay. And that's comparing 1985-'86 to the data that



1           you had for 1976?

2       A.    1975-'76, exactly.

3       Q.    Okay. You've got a measure in here that's called the  
4           federal range ratio?

5       A.    Yes.

6       Q.    How is that computed?

7       A.    It might be better to come back to that after we do  
8           the restricted range.

9       Q.    Okay. Let's look at the restricted range.

10      A.    We can just skip that one and go to the range. The  
11           range is the difference in the very first and the  
12           very last pupil. The one that's receiving the  
13           highest revenues and the lowest revenues. If you  
14           subtract those dollar amounts, that is your range.  
15           Now, if you look at the 95th to the 5th percentile, a  
16           restricted range, and subtract the 95th from the 5th,  
17           you get a dollar amount, in the same sense. To  
18           answer your question, the federal range ratio is the  
19           5th minus -- the 95th minus the 5th, divided by the  
20           5th. It should be about -- it should be the same  
21           number as the restricted range without the one.

22      Q.    You may have to explain that.

23      A.    If you look at it, it's .48 and the restricted range  
24           is 1.48.

25      Q.    Okay.

1 A. So it looks beyond -- the one basically tells you  
2 that there's even dollars there. And this is what's  
3 beyond that.

4 Q. Okay. And I assume that a range ratio of one would  
5 be perfect equity, and then -- and this measures, in  
6 some respects, a percentage of variation?

7 A. Exactly.

8 Q. Okay. So that the district at the 95th percentile is  
9 spending 48 percent more than the district at the  
10 5th?

11 A. Yes.

12 MR. KAUFFMAN: Excuse me, Your Honor, I  
13 guess I would object both to the question and the  
14 answer. Counsel said spending, and I think all of  
15 these are revenue figures. Excuse me.

16 MR. O'HANLON: Excuse me.

17 MR. KAUFFMAN: And secondly, I think all of  
18 these are weighted figures, not actual figures.

19 MR. O'HANLON: I was going to ask about  
20 that.

21 THE COURT: Okay.

22 BY MR. O'HANLON:

23 Q. When you get into that, we're still using the same  
24 weighted students that you described for your  
25 methodology earlier, is that correct?

1 A. Yes, you use actual ADA, but the revenue figure is  
2 the one that's adjusted by the weighted.

3 Now, in the finance literature you may have  
4 seen weighted pupils as -- as being mentioned as  
5 being the way that you should look at it. What they  
6 mean is when you do statewide statistics, you don't  
7 take one number for Pecos and one number for Dallas  
8 and find an average, you take the Pecos number times  
9 the number of students in Pecos and the Dallas number  
10 times the number of students in Dallas, so you're  
11 actually reflecting real numbers of students and not  
12 an artificial number of student in each district. So  
13 that is what's referred to in the literature as a  
14 weighted student. And yes, I did use weighted  
15 students throughout, so it reflects actual students  
16 numbers.

17 Q. Okay. How does the federal range ratio, what does a  
18 range ratio of .48 or 1.48 tell you about the Texas  
19 district?

20 A. Well, back on Page 54, in 1976, the federal range  
21 ratio was .89. Now it's .48. So, decreasing shows  
22 more equity. A decreasing range ratio shows more  
23 equity.

24 Q. Okay. So at least comparing ourselves -- comparing  
25 ourselves to ourselves, that we have made substantial

1 progress towards equity since 1976 --

2 A. Yes.

3 Q. -- by this measure?

4 A. Yes, and I think that a rule of thumb that a finance  
5 expert such as Dr. Rossmiller uses in looking at not  
6 the federal range ratio, but the restricted range, is  
7 that anything that's below .15 -- .15 and below  
8 indicates equity. 2.0 and above indicates inequity,  
9 and the middle is a gray area.

10 Q. Okay. I note that -- and we've heard some testimony  
11 that the federal government uses kind of a  
12 requirement of 1.25 as some kind of a target figure.  
13 How many states can meet that?

14 A. Well, the federal government isn't looking at the  
15 equity of a state finance system. It has very  
16 stringent standards for deliverance of Impact Aid,  
17 which is a federal program. I spoke to Dexter Majors  
18 at the Department of Education not too long ago, who  
19 wrote those standards and who discussed them with me  
20 at some length. From that conversation, I understood  
21 that only two states, Arizona and I believe New  
22 Mexico are the two states that meet the .25, but  
23 it's, again, I don't think it's something that you  
24 want to look at in state education finance.

25 MR. KAUFFMAN: Your Honor, I would object

1 to the last answer as hearsay, as far as the only two  
2 states that meet the standard.

3 THE WITNESS: That's my opinion. I'm  
4 sorry, I thought I had a right to give an opinion. I  
5 beg your pardon.

6 MR. O'HANLON: She does, Your Honor. She  
7 is an expert, and if this is the kind of information  
8 that she relies on in the course of this kind of  
9 information, she relies on it, it's not through  
10 hearsay. It is admissible as expert opinion  
11 testimony.

12 MR. KAUFFMAN: Although it may be  
13 admissible as a base of her opinion, it's not  
14 permissible for the truth of the matter stated that  
15 there are only two states that meet the standard.

16 MR. O'HANLON: That's simply not true.  
17 This witness can testify based upon hearsay as an  
18 expert. And that's what she's doing.

19 THE COURT: And you say what, now?

20 MR. KAUFFMAN: I object to her last  
21 response as hearsay, in that she has stated that only  
22 two states meet whatever the federal range ratio is.  
23 And that was based on a conversation with a person  
24 who is not here for me to cross examine as to what  
25 basis he used to base his opinion. She certainly has

1 a right to base her opinions on conversations from  
2 people, I'm not disputing that. But as far as to the  
3 truth of the matter stated that there are only two  
4 states, we object to that.

5 MR. O'HANLON: This is the kind of opinion  
6 testimony that experts rely on. And they get their  
7 information from hearsay, and that's admissible as  
8 opinion testimony.

9 THE COURT: You --

10 MR. KAUFFMAN: I can't find a rule book.

11 THE COURT: You won't find it in the rule  
12 book.

13 THE WITNESS: Can I say anything?

14 THE COURT: No, it involves law. We'll be  
15 back to you in a minute.

16 THE WITNESS: Okay.

17 MR. GRAY: Your Honor, I believe she can  
18 base her opinion on hearsay. If they ask her  
19 opinion, "Do you have an opinion, is this equitable  
20 or inequitable," she can say, "Yes, I believe it is  
21 fair or unfair," or whatever, "based on A, B, C, D  
22 and E." And that is admissible, but it is not  
23 necessarily admissible that A, B, C, D and E is true  
24 for that matter. But I think all Kevin is trying to  
25 establish, and he's just asked one question ahead of

1           himself, is what is her opinion? And she can base  
2           her opinion on hearsay, but the hearsay, itself, is  
3           not in and of itself admissible for the truth of that  
4           matter.

5                   MR. O'HANLON: 703 is the rule.

6                   THE COURT: Well, to begin with, I don't  
7           know that her statement about these two other states  
8           has much to do with what she's given an opinion  
9           about. She asserts that as a fact, and not as an  
10          opinion. She asserted that as a fact. And the  
11          reason I'm a little bit annoyed, is because this has  
12          been bedeviling me for a couple of years. Under  
13          these new rules, it's really not clear to me what an  
14          expert can drag into evidence. And I've been having  
15          this correspondence debate with a couple of  
16          professors about it. And they think, and they were  
17          partly responsible for these rules, that experts now  
18          can just drag a bunch in just because they say, "I  
19          relied upon it." She could probably bring her high  
20          school calculus book and get it into evidence, if she  
21          relied upon it. But now that's what -- that's a  
22          different issue from what you asked her, and what she  
23          replied. She replied that these two states have  
24          equity. And she got that from somebody else. And  
25          somebody else told her the feeling. I don't know

1           what that has to do with her -- what she's here to  
2           give an opinion about. That's not her opinion, she's  
3           just repeating somebody else's opinion.

4                   MR. O'HANLON: Well, I got objected to  
5           before I asked the question about where I was  
6           leading. and that is, does the mere fact that the  
7           state fails to meet the federal range ratio mean that  
8           it's an inequitable system within that state? So  
9           what I'm trying to do was to set up the empirical  
10          basis for a decision, or for an opinion.

11                   THE COURT: Okay. I'll overrule.

12                   THE WITNESS: Can I say something?

13                   THE COURT: Why don't you ask Mr. O'Hanlon  
14          what you want to say.

15                           (Discussion between attorney and client.)

16 BY MR. O'HANLON:

17 Q.    Go ahead.

18 A.    Is there a question?

19 Q.    The question is, how does the federal range ratio,  
20       then -- what does it apply to? You mentioned  
21       something about restrictive requirements.

22 A.    Yes, if you meet the federal range ratio test, then  
23       you are -- it makes a difference in whether -- in how  
24       state aid will be distributed. I think that what I  
25       wanted -- I would like to be as accurate as I can.



1           And I was indicating and meaning to say -- I see that  
2           I didn't, that he -- that the two states that he had  
3           referred to were meeting these -- as meeting these  
4           criteria, doesn't indicate that there are two states  
5           in the United States that meet the criteria. So, I  
6           was saying that they did comply with -- they are  
7           receiving Impact Aid in that fashion.

8       Q.    Okay. Then I assume there are other states besides  
9           those two states that receive Impact Aid?

10   A.    Exactly.

11   Q.    Okay. And so does the mere fact that a state is  
12           below that federal range ratio lead you to a  
13           conclusion that this state system of finance is  
14           inequitable?

15   A.    I've never known it to be utilized for judging a  
16           state finance system's equity -- that number. It's  
17           used for a different purpose for Impact Aid  
18           distribution.

19   Q.    Okay. And the State of Texas receives Impact Aid at  
20           this time, do they not?

21   A.    I believe so, yes.

22   Q.    Okay. All right. Can we talk some about slope?

23   A.    Well, we missed the correlation. Would you like to  
24           go to the slope?

25   Q.    Yes, let's do the correlation.

1 A. The correlation looks at the relationship between two  
2 objects. And in this case, it's looking at the  
3 relationship between revenue per pupil and wealth per  
4 pupil. And wealth is defined as the full market  
5 property value of the district.

6 A correlation runs from minus one to plus one.

7 Q. Uh-huh.

8 A. Looking at from zero to one, as the relationship  
9 between one increases, if it causes a corresponding  
10 increase in the other, the correlation rises.

11 Q. Uh-huh.

12 A. If one factor goes up, and there's a relationship in  
13 another factor going down, that's what gives the  
14 inverse, or the minus relationship. For example, age  
15 and physical fitness, although it's just used as an  
16 example, that as you get older you get less  
17 physically fit, you get a negative correlation.  
18 Whereas early childhood, height and weight may be  
19 strongly related. And as one goes up, another would  
20 go up.

21 Q. Okay. Now, so you computed a correlation between  
22 wealth and revenue?

23 A. Yes.

24 Q. Why is that important to an equity analysis?

25 A. To see if the two are moving in tandem, if they move

1           together, if there's a relationship.

2   Q.   Okay. And you found that there was a correlation of  
3       .60?

4   A.   Yes, I did.

5   Q.   Okay. How strong of a number -- what does that  
6       number tell us or tell you?

7   A.   Well, that on a scale of one to ten, it's six. But  
8       it measures a relationship, but not the magnitude.  
9       So, if you're looking for how strong, you could say  
10      that's a medium correlation. A strong correlation  
11      would be upwards eight, nine, and so forth. These  
12      are defined differently by different statisticians,  
13      the strength of the correlation.

14   Q.   Okay. Can you take a correlation and turn it into  
15      something called an r square?

16   A.   Yes, you can. You can take a correlation and you can  
17      say the relationship -- the two variables may be  
18      moving together, but how much exactly in r square,  
19      we'll ask how much variation does one account for in  
20      the other?

21   Q.   Okay. And is an r square simply the squaring of the  
22      correlation?

23   A.   Exactly.

24   Q.   Okay. So if we have a correlation of .60, and we  
25      square that, we end up with an r square, if my

1 mathematics serves me correctly, of 36 percent?

2 A. 36 percent, exactly. So if you say -- you have all  
3 of the actual differences in dollars per student  
4 across the State of Texas. Now, if you were to look  
5 at wealth and say what percent of the variation can  
6 be predicted by the wealth of the district, you would  
7 have between 35 or 40 percent -- or definitely less  
8 than half being predicted by the wealth variable.

9 Q. Okay.

10 A. But there's something else you need to, I think,  
11 consider when you look at a correlation.

12 Could I draw it?

13 Q. Sure.

14 A. Okay. Is that if you take each district and you say --  
15 you find what the dollars per student are. And then  
16 you find what their wealth is and you plot it. And  
17 you take all 1,068, at the time I did this study,  
18 districts and you plot them. This isn't an actual  
19 representation, this is just an example. It's not a  
20 very good example, let me change it a little bit.  
21 I'm trying to show that there's a few out here, not  
22 an even amount out here, and that there's a lot down  
23 in here (indicating), that you can get a high  
24 correlation -- you can get a very high correlation,  
25 because as one moves, so does another. But it

1 doesn't necessarily indicate inequity, because they  
2 move at such a small magnitude.

3           Whereas you can get another correlation that  
4 could be the very exact same number, but the changes  
5 are of a very large magnitude. That as -- excuse me,  
6 as your wealth rises, you get a real steep increase  
7 in revenues, rather than as your wealth rises there  
8 is an increase but it's of a low magnitude. And  
9 that's what the slope looks at.

10           That's the next one, the slope looks at what  
11 kind of a relationship is this? Is it one of a big  
12 magnitude or a small magnitude? You can think of  
13 kids and if you're looking at the relationship  
14 between age and weight in a young child, you might  
15 find the same correlation as the relationship between  
16 age and weight in over 50 citizens. And this is just  
17 an example. But you find for the young child,  
18 they're gaining a lot of weight each year because  
19 they're growing so fast, whereas the older citizen is  
20 gaining just a little weight each year. The  
21 correlation can be the same, but what you're talking  
22 about -- in this case, we're talking about the  
23 dollars difference will be different based on the  
24 slope or the magnitude of the relationship. Also an  
25 elasticity will measure the magnitude of the

1 relationship.

2 Q. Okay. What is the elasticity?

3 A. Whereas the slope looks at the absolute change, it  
4 looks at the -- if you're talking about dollars, it  
5 looks at what a \$1.00 change in wealth would mean to  
6 a change in revenues. The elasticity looks at a one  
7 percent change in wealth to a percentage change in  
8 revenues. So one is in absolute units and another is  
9 in percentages.

10 Q. Okay. What does the relationship between the  
11 correlation of .6 and the slope of .0010 indicate to  
12 you?

13 A. I was wondering if there was -- if this correlation  
14 was of a large or a small magnitude, which one it  
15 was. And it's of a very low magnitude. For every  
16 \$1.00 change in wealth, there's a one-tenth of one  
17 penny change in revenue. A slope -- the slope also  
18 looks at that and it's not on this table.

19 Q. Okay.

20 A. I do have those figures, if you're interested. I did  
21 look at the slope then as well.

22 Q. Yes.

23 MR. KAUFFMAN: Are you on Page 48? Isn't  
24 the slope on Page 48?

25 THE WITNESS: Yes, but the elasticity --

1 MR. KAUFFMAN: Oh, okay.

2 THE WITNESS: -- The percentage change,  
3 because it's an inflation-proof measure.

4 A. And the elasticity was .099. So what that indicated  
5 was that for every one percent change in wealth, a  
6 .099 change in revenue existed. Or a ten percent  
7 change in wealth would have less than a one percent  
8 change in revenue. Or put another way, a 50 percent  
9 change in wealth would be less than five percent  
10 change in revenue. So, in summary, the correlation  
11 indicates whether the two variables move together and  
12 the slope and elasticity tell the magnitude of the  
13 way they move.

14 Q. Okay. So in other words, going back to this chart  
15 here, is that we've got a -- given a slope, even  
16 though they move together, it's not a huge increase.  
17 In other words, as wealth increases, you don't see a  
18 high increase in the amount of revenue?

19 A. Yes.

20 Q. Okay. Now, if you had a high slope on the other  
21 hand, you would see --

22 A. Even with a lower correlation, or a very quite low  
23 correlation with a high slope, it can indicate that  
24 there's a problem in terms of the equity of the  
25 system.

1 Q. Okay. And then once again, with respect to the  
2 correlation, if we're going to say that it will  
3 predict a certain amount of variation, we need to  
4 just square that correlation, is that correct?

5 A. Yes.

6 Q. Okay.

7 A. It needs to be squared.

8 Q. So that given this slope, we've -- and a correlation  
9 of .60, we have only predicted, by looking at wealth  
10 in the district, 30 -- 36 percent of the variation  
11 among expenditures?

12 A. (Witness nodded head to the affirmative.)

13 Q. You've got to do it verbally, so she can write it  
14 down.

15 A. Yes.

16 Q. Okay. Did you look at any other measures of equity  
17 in the state?

18 A. Well, I don't know if I can answer that. I did look  
19 at additional measures of equity in this sense,  
20 besides the elasticity which I mentioned. Although I  
21 did look at the quintiles. Or I looked at -- I went  
22 further in breaking down then the distribution of  
23 revenues by looking at how many dollars were at each  
24 ten and five percent change in per pupils. In other  
25 words, I took the dollars per district and I ranked



1           them from high to low. I beg your pardon, from low  
2           to high. So the district with the lowest dollars, I  
3           ranked first and so forth. Then I looked at the  
4           number of pupils in that district. And I carried  
5           along the cumulative pupils in the state. And I was  
6           interested in how the revenue distribution across the  
7           entire state looked at every five and ten percent  
8           interval of pupils.

9       Q.    Okay.

10   A.   The results of that analysis are shown on Page 55.  
11       And the graphic representation of that analysis is  
12       shown on Page 56.

13   Q.    All right. Now, I notice that there is between -- at  
14       the lowest quintile, you see that the -- which is the  
15       zero percent, you see that there is a smaller  
16       expenditure level or revenue level than the next  
17       quintile up?

18   A.    Yes.

19   Q.    And does that appear to be somewhat of a deviation  
20       from the pattern? From the slope of it?

21   A.    The total dollars per student? Yes, somewhat.

22   Q.    Okay. Now, I'm showing you now what has been  
23       introduced as Plaintiffs' Exhibit 106. And what I'll  
24       represent to you, that this is the tax rate of these  
25       districts. And it appears that the lowest -- and

1           this is the quintile right here (indicating).

2       A.   (Witness nodded head to the affirmative.)

3       Q.   It appears that the lowest quintile has a lower tax  
4           rate than the next ones up?

5       A.   Yes.

6       Q.   Okay. And I'll represent to you, that there are a  
7           number of districts in the state in that situation  
8           that are not maximizing either -- they're not  
9           maximizing their state entitlement, because of their  
10          insufficient tax rate.

11                Do you think that that would have an influence  
12          on this first quintile?

13       A.   The effort of the district in terms of their tax  
14           rate, would influence all of the quintiles. And a  
15           lower or a weak effort would definitely show dollars  
16           per student as being less, because we're looking at  
17           total state and local dollars.

18       Q.   Okay. And this figure on Page 56 represents a  
19           display of expenditures per weighted pupil, is that  
20           correct?

21       A.   The dollar amount was derived at by using weighted  
22           pupils. Those represent actual pupils. We didn't  
23           want to do it twice.

24       Q.   Okay.

25       A.   So it represents actual pupils.

1 Q. And the percentages that are displayed here on Page  
2 56 are percentages of students rather than district?

3 A. They are percentages of students, exactly. Because  
4 its at a student analysis. That's what's meant by  
5 the weighted student, I guess, in your previous  
6 question. I'm sorry. I was referring, myself, to  
7 program weighted students, and so therefore, I missed  
8 what you had intended.

9 Q. Okay. Did you look at the 95th percentile or the  
10 95th quintile by itself?

11 A. I did. And both on Table 3.13 on Page 55, and on  
12 Table -- or excuse me, figure 3.2 on Page 57. I  
13 looked at every one-half of one percent of students  
14 ranked by dollars, and indicated the dollar level.  
15 And then displayed that graphically on the Table to  
16 break down that top five percent and see if we would  
17 -- if it was representative of the entire group or a  
18 portion of the group.

19 Q. So what figure 3.2, on Page 57 represents, is a  
20 blow-up, in essence, of this last quintile on Page  
21 56?

22 A. Yes.

23 Q. As an equity analyst, what kind of information does  
24 this kind of distribution give you about the system  
25 as financed in the state?

1 A. Well, overall, it raised some questions to me. And a  
2 cursory analysis of this, I was able to draw some  
3 further conclusions. It appears -- which table would  
4 you like me to --

5 Q. Both of them, either one.

6 A. It appeared on the table on Page 56 that there was a  
7 fairly flat distribution of revenue accepted at the  
8 95th to the 5th percentile, where revenues increased.  
9 When that was broken down, it seemed further that in  
10 large measure, one-half of one percent of Texas  
11 students account for the perceived disparity in  
12 dollars that we discussed with the measures.

13 The measures I utilized, you see, were  
14 including everyone. So therefore, not wanting to  
15 make a decision based on that alone, I undertook  
16 further analysis excluding the top five percent to  
17 see what actual statistical numbers would be derived  
18 for the total population of Texas school districts  
19 without considering the top five percent. The  
20 attempt was to see if that was skewing what actually  
21 was occurring in the districts and making it appear  
22 somewhat different than what actually was occurring.

23 Q. Okay. What were your findings when you made that  
24 investigation?

25 A. Those findings are shown in Table 59 and the figure

1 on -- in the figures on Page 60.

2 On Page 59, as you can see, the coefficient of  
3 variation changed from 15.89 to 10.16, when an  
4 analysis was undertaken including 95 percent of the  
5 pupils. The Gini Coefficient changed from .075 to  
6 .056. The federal range ratio changed from .48 to  
7 .41. The McLoone Index, as you might expect, because  
8 it deals with the lower half of the distribution, was  
9 not affected by this.

10 Perhaps the most dramatic was the change in the  
11 range, which was reduced to \$1,265.00 between the top  
12 and bottom student when 95 percent of the students  
13 were considered. The restricted range was changed --  
14 was found to be \$808.00. And the difference in  
15 dollars at the 90th and 10th percentile was found to  
16 be \$606.00.

17 Q. Okay.

18 A. These are shown pictorially on Page 60. And you can  
19 see that with the exception of the McLoone Index, the  
20 measures were reduced, showing greater equity. I  
21 included this same analysis as both of the analyses  
22 in which we were talking for districts excluding --  
23 for all districts excluding sparse districts. But  
24 the differences were so small that I did not write up  
25 the differences all the way through. And I base my

1 analysis of the options on all districts.

2 Q. Okay. Once again, does that -- so that the presence  
3 of small and sparse districts in the state does not  
4 particularly affect the equity of the system?

5 A. It doesn't appear to, no.

6 Q. Okay.

7 A. Not according to the measurement of equity.

8 Q. Okay.

9 THE COURT: Let's stop there for morning  
10 break. We'll get started again at five 'til.

11 (Morning Recess)

12 THE COURT: All right, sir.

13 DIRECT EXAMINATION (RESUMED)

14 BY MR. O'HANLON:

15 Q. Dr. Verstegen, have we got through talking about the  
16 charts that you have and some of the calculations?  
17 Was there anything else that you did to look at  
18 equity in the state?

19 A. Well, I did look at the equity of the alternatives to  
20 current law for reduction in aid.

21 Q. Okay.

22 A. And I looked at -- I reviewed the implementation of  
23 House Bill 72, with regards to another goal -- excuse  
24 me, the implementation of House Bill 246, with  
25 regards to another goal of the State Board of

1           Education. But basically, this, as we've reviewed  
2           it, provided the baseline that I was attempting to  
3           have for the analysis of the reductions in aid.

4       Q.    Okay. Now, before we get to talking about the  
5           reductions in aid, looking at all of your  
6           calculations and all of the various methods and  
7           methodologies of examining equity, were you able to  
8           arrive at a conclusion as to whether or not the State  
9           of Texas has an equitable system of school finance?

10     A.    I did include a conclusion to the baseline section.  
11           And that is, I found that the system of school  
12           finance in Texas is relatively equitable, given that --  
13           given an assumption that a state finance plan cannot  
14           be drafted for every single last case, and that high  
15           wealth districts provide valuable lighthouse effects  
16           for other districts. That especially, when we looked  
17           at the vast majority of the students in the State of  
18           Texas, 95 percent of them, Texas, as I saw it, had an  
19           equitable system, for the most part, of school  
20           finance.

21     Q.    Okay.

22     A.    There was something else here that we didn't discuss.  
23           And you said, "Did you do anything else." And on Page  
24           63, I did look at regressions and slopes by 100  
25           percent, 99 percent, and 95 percent of pupils. And

1           you see that although the correlation is .60 for a  
2           100 percent of pupils, when 95 percent of pupils were  
3           considered, the correlation was .41. This accounted  
4           for less than one-fifth of the variation in revenues.  
5           Then wealth accounted for less than one-fifth of the  
6           variation in revenues.

7   Q.    Okay.

8   A.    Excuse me?

9   Q.    All right. And again, if we're going -- to compute  
10          that, we have to go back and compute the r square,  
11          again?

12  A.    Yes.

13  Q.    And if it's -- four times four is 16, so we're  
14          talking about, if you only look at 90 -- from the  
15          95th percentile of students, down, then revenue -- or  
16          wealth of a district only accounts for 16 percent of  
17          the variation of revenues?

18  A.    For approximately 17 percent --

19  Q.    Okay.

20  A.    -- with the correlation of .41.

21  Q.    Okay. So by examining from the first -- from the  
22          poorest student, I suppose to the 95th percentage of  
23          students, if you look at that 95 percent of students  
24          in the state, only 17 percent of the variation in  
25          expenditures or revenues is explained by the wealth



1 of that district?

2 A. Exactly.

3 Q. Okay. And then if we go up to 100, then the  
4 correlation becomes 60 and the percentage becomes 30  
5 -- what, 36 percent?

6 A. Yes.

7 Q. Okay.

8 A. Less than flipping a coin.

9 Q. Okay. Is it fair, when looking at it, to make those  
10 kinds of views between the 100th and the 95th?

11 A. I beg your pardon. What -- what kinds --

12 Q. In other words, is there a reason to drop off that  
13 five percent? Why did you do that?

14 A. Well, embedded with the measures are different  
15 philosophies. And in most cases, a 5th to 95th  
16 percentile analysis is undertaken. In some cases,  
17 it's below that, the 90th to 10th, or even the 80th  
18 to the 20th, to look at the equity of the revenues  
19 within that range.

20 I didn't want to drop off the bottom five  
21 percent of pupils, because I feel that we need to be  
22 concerned about them. So I only dropped off the top  
23 five percent of pupils. So it is a bit more  
24 conservative than what is -- you may find embedded in  
25 some of the other measures. And my concern here was

1 to see if the measures looked substantially the same  
2 with that top five percent removed. That is, I guess  
3 -- I was attempting to see what effect the top five  
4 percent of districts exerted on the measurement of  
5 equity on the State of Texas. So, I was looking at  
6 substantially the vast majority of students in Texas.  
7 And embedded within that philosophy, or within that  
8 measurement, is the idea that perhaps not all 100  
9 percent of cases can be accounted for within a  
10 program. And therefore, as I said, you have your  
11 restricted range, which is utilized -- often the  
12 range is not presented as in the early Berne and  
13 Stiefel book -- Odden, Berne and Stiefel writing for  
14 the Education Commission of the States. And as I  
15 said, sometimes it's the 90th and 10th, but I didn't  
16 feel comfortable in dropping off that bottom five  
17 percent.

18 Q. Okay. Does this then lead you to some conclusions,  
19 all of these views, with respect to equity of the  
20 state system as a whole?

21 A. I feel that, generally, the state system as a whole  
22 is an equitable system of school finance. I say  
23 generally, because the top five percent of districts  
24 do receive larger revenues than the other districts.  
25 But I feel that within the total context of 100

1       percent of the pupils, that they may have a valuable  
2       role to play in the context of financing education in  
3       the State of Texas. And that the disparity is  
4       contained within that very small percent of students.  
5       So therefore, yes, I -- I did reach that conclusion.

6   Q.   Okay. Before we get into discussing alternatives and  
7       things of that nature, did you look at teacher  
8       ability to hire teachers and teachers' salaries, and  
9       run some correlations with respect to those?

10  A.   I did look at a number of correlations, related a  
11       number of variables to each other. And that is in  
12       the first section of part three. The correlations  
13       between teachers' salaries and selected variables  
14       begin on -- in textural form on Page 34, and the  
15       actual data are presented on Page 35.

16  Q.   Okay. Could you tell us a little bit about what a  
17       Pearson product moment correlation is and what the  
18       significance of that is in the analysis?

19  A.   We, as you might recall, discussed correlations prior  
20       to this, in that it looks at the relationship between  
21       two factors or two variables, and measures if they  
22       move in tandem or if they move in inverse order, or  
23       if, for example, they have no relationship to each  
24       other.

25  Q.   Okay. The same as what we talked about earlier?

1 A. Yes.

2 Q. Okay.

3 A. Those were Pearson product moment correlations.

4 Q. And why would you want to look at teachers' salaries  
5 as it related to other variables?

6 A. One of the State Board of Education goals for Texas  
7 public education related to teachers. In particular,  
8 it said -- it states that qualified and effective  
9 teachers will be attracted and retained.

10 Q. Okay.

11 A. I felt that it may have some relationship to this  
12 goal.

13 Q. All right. What did you find was the relationship  
14 between teachers' salaries and total state and local  
15 revenue, for example?

16 A. The relationship between beginning teachers' salaries  
17 and total state and local revenue was .302.

18 Q. Okay. That's the correlation?

19 A. Yes.

20 Q. Okay.

21 A. With regards to average salaries, it was .34.

22 Q. Okay.

23 A. So this is a low, or a low moderate correlation.

24 Q. Okay. Are there any other correlations that stick  
25 out to you as significant in your analysis here?

1 A. Well, I was interested in the relationship between  
2 beginning and average salaries and minority students,  
3 for example. Minority students as a percent of  
4 total. And there's no relationship at all between  
5 schools that did not have minority students or  
6 schools that do have minority students and ability to  
7 pay teachers, according to these correlations, at a  
8 beginning or average salary.

9 Q. Okay. If we're looking at minority students, the  
10 table is on Page 35, is that correct?

11 A. Yes, it is.

12 Q. Okay. And that --

13 A. And the correlation is .08 or .04. So on a scale  
14 from one to ten, it's not one, even.

15 Q. Okay. And again, if we took that .04 to determine  
16 it's predictive ability of variation, we would have  
17 to square it, correct?

18 A. Exactly.

19 Q. So we would end up with -- if you're comparing  
20 minority students, if you're looking for predictive  
21 ability, you would end up with .0 -- it would explain  
22 -- percentage of minority students would explain  
23 .0016 of the variation, is that correct?

24 A. I believe so, uh-huh.

25 Q. So considerably less than one percent?

1 A. Yes.

2 Q. And beginning salary, at .08 would be .0064?

3 A. Yes.

4 Q. Which would be 64 hundredths of one percent of the  
5 variation in salaries?

6 A. Yes.

7 Q. Okay.

8 A. So, in some, there was no relation found between  
9 those salary variables and minority students as  
10 percent of total.

11 Q. All right. What other things -- what other  
12 categories are significant, as you look down this  
13 Table 3.3?

14 A. Well, I'm looking -- I was interested in the  
15 relationship between teacher experience and wealth  
16 -- property wealth assessed valuations, and that's  
17 on Page 29.

18 Q. Okay.

19 A. This minimum salary ratio was utilized to represent  
20 experience. And that's the state average salary to  
21 the district average salary, so the difference would  
22 relate to an experience factor. And it's utilized to  
23 allocate, I believe, the experienced teacher  
24 allotment. And looking at the relationship on Page  
25 29, the very last two correlations between wealth and

1           the experience variable that I've called minimum  
2           salary ratio, the correlation is .153, or .149, a  
3           very low -- almost insignificant relationship between  
4           those variables.

5   Q.    Okay. And again, to get the predictive -- I'm not  
6           going to try and figure that one out, because I can't  
7           do it in my head. But you've got to square them to  
8           get a predictive ability, is that correct?

9   A.    Exactly.

10   Q.    Okay. What other variables were significant with  
11           respect to looking at teachers' salaries and  
12           experience?

13   A.    Well, because I utilized every data, every data point --  
14           in other words, I didn't use a sample here, all the  
15           results are significant. Significance is a test that  
16           tells you how your sample relates to the broader  
17           population, so that you're sure you're not pulling  
18           out an example that's just not true of the whole  
19           population.

20   Q.    Okay.

21   A.    But I used every single last measure, so there's no  
22           question of significance.

23   Q.    By looking at teachers, then, were you able to draw  
24           some conclusions with respect to dispersion patterns  
25           and experience patterns in the state?

1 A. Well, I did include that in the text on Page 34 and  
2 37. And because there's so many variables, the  
3 analysis is quite lengthy.

4 Q. Okay. Well, to hit some of the ones that you've  
5 done, I see you find that total salaries were not  
6 related to Hispanic populations? I'm at the bottom  
7 of Page 34.

8 A. At the bottom of Page 34, or minority students as a  
9 percent of total students.

10 Q. What about local enrichment?

11 A. Local enrichment and state and local enrichment, both  
12 exhibited a strong moderate relationship to total  
13 teachers' salaries, as did total state and local  
14 revenue per pupil, which was a low moderate  
15 relationship of .3, which comments a little of the  
16 variation.

17 I think that when you look at enrichment, you  
18 have to look at it in terms of total dollars  
19 available and not isolate as only the additional  
20 dollars that that district is spending. Because you  
21 know, the purpose of the system is to provide  
22 additional state dollars for those districts that  
23 have low local dollars, and therefore, to try to  
24 equalize the total dollars. So if you look at one,  
25 you're really drawing something out of context.



1 Q. Okay. So you think looking at the total enrichment  
2 is the best way to look at the -- for total revenue?

3 A. Total revenue, yes.

4 Q. Okay.

5 A. Because it includes the state and the local.

6 Q. Okay. I see there that you make -- you've calculated  
7 the r squares for those down in Footnote No. 11?

8 A. Yes. The r squared for the variation explained by  
9 local enrichment and state and local enrichment  
10 revenue were .257 and .179, respectively. In other  
11 words, if you did take the worse -- if you did draw  
12 these out of context, and didn't include the state  
13 revenue, which would be going to those poorer  
14 districts, even at this point, they account for  
15 one-fourth or less of the variation with regards to  
16 teachers' salaries.

17 Q. And total revenues account for only ten percent of  
18 the variation or thereabouts?

19 A. Yes.

20 Q. Okay.

21 A. Approximately.

22 Q. I see that you look at it with respect to the Price  
23 Differential Index as well?

24 A. Yes, I looked at teachers' salaries in terms of the  
25 Price Differential Index.

1 Q. Okay.

2 A. The Price Differential Index showed a moderately  
3 strong relationship to total salary, which might be  
4 expected, because the Price Differential Index was  
5 distributed according to a teacher's salary variable.  
6 In other words, the main variable predicting  
7 variation in the cost of education, a very large part  
8 of that is teacher's salary.

9 Q. Okay. And you found that -- down at the bottom of  
10 37, could you tell us -- your last paragraph, some of  
11 the other relationships that you noted there?

12 A. Districts with higher average daily attendance, is  
13 this what you are indicating?

14 Q. Uh-huh.

15 A. And districts with high density showed moderately  
16 positive correlations to total teachers' salaries in  
17 the nature of a .3, a .7, respectively, as did  
18 districts with larger special populations -- gifted  
19 and talented, related to teachers' salaries of .37;  
20 bilingual, .21; compensatory, .26; special education,  
21 .335; and vocational education, .364. Thus, the  
22 larger and more densely populated districts and also  
23 districts with larger special populations tended to  
24 pay higher teachers' salaries. But in all cases,  
25 these correlations are not strong and they account

1           for little difference in the variation.

2       Q.    Okay. Did you also take the occasion to do  
3           correlations with respect to test scores?

4       A.    I did. And I looked at the relationship between a  
5           number of variables and test scores, and these are  
6           shown on Page 39. The test that I looked at were the  
7           ninth-grade tests in 1984-'85, the TABS test. And  
8           the eleventh-grade 1985-'86 TEAMS test.

9       Q.    Okay.

10      A.    The variables that showed a very insignificant or  
11           almost no relationship to TABS or TEAMS test scores,  
12           included teachers' experience, I & S tax rates, M & O  
13           rate. In other words, the tax rates didn't really  
14           relate to high test scores. Operating costs per  
15           pupil...

16      Q.    Okay. What were the -- I notice that there's a  
17           slight negative correlation with respect to teacher  
18           experience?

19      A.    Yes, it's -- it's interesting. The teacher  
20           experience and test scores, for TABS, was minus --  
21           minus .079 and minus .043. But these are so low,  
22           that whether it's minus or plus, there's just not a  
23           relationship, it seems --

24      Q.    Okay.

25      A.    -- from these data.

1 Q. For illustrative purposes, though, if we've got a  
2 negative correlation, that means there's an inverse  
3 relationship, is that correct?

4 A. Yes.

5 Q. Okay. So if you've got, although it's probably  
6 insignificant because of the low of the correlation,  
7 if you've got -- the nature of that relationship is  
8 that if you've got high -- the higher the experience,  
9 then the lower the test scores, is that correct?

10 A. Yes.

11 Q. Okay.

12 A. But --

13 Q. I'm not saying that it means anything because of the  
14 numbers --

15 A. It's too low.

16 Q. -- I'm just trying to explain what a negative  
17 correlation looks like.

18 A. Yes.

19 Q. And tax rates don't have much to do with it?

20 A. Just the tax rate, the debt service rate was -- the  
21 variables were the -- I beg your pardon, the  
22 correlations were .1 and .079 for the TABS and the  
23 TEAMS test, and the M & O rate was .14 and .12, very,  
24 very low. I think if we graphed it out, it would  
25 look like no relationship at all. You would be hard

1           pressed to tell what direction anything was going in.

2       Q.   And then you ran correlations of test scores against  
3           total operating costs per student?

4       A.   Yes.

5       Q.   Okay. Now, let's see if we can't calculate an r  
6           square for that.

7       A.   For the total operating cost per student?

8       Q.   Uh-huh.

9                   THE COURT: While you all are getting set  
10           up, I'm going to step down for one minute.

11                               (Discussion off the record.)

12       Q.   If we're going to talk about predicting one variable  
13           by another, if we look at total operating revenues,  
14           once again, we do it by computing an r square, is  
15           that correct?

16       A.   Yes.

17       Q.   Okay. And that's what I've done here, is I've  
18           multiplied that out. So if we're going to express  
19           the predictive power of total operating revenues, and  
20           this is for the -- the .005 was for TEAMS or TABS?

21       A.   The .005 was for the TABS test scores.

22       Q.   And this is ninth graders, and this is eleventh-grade  
23           TEAMS test, correct?

24       A.   Yes.

25       Q.   Okay. Now, if we're going to express that in terms

1 of a percentage, as I see it, then operating  
2 expenditures explained 25 ten-thousandths of one  
3 percent of the variation?

4 A. It's so minuscule, as you can't discern what it is,  
5 it's so small.

6 MR. KAUFFMAN: Counsel, can I ask one  
7 question on that? That's comparing TABS data in  
8 '84-'85 to operating cost in '85-'86?

9 THE WITNESS: And then the other one is  
10 TEAMS in '85-'86. The second one there --

11 MR. KAUFFMAN: Okay.

12 THE WITNESS: -- to operating costs in  
13 '85-'86.

14 BY MR. O'HANLON:

15 Q. Okay.

16 A. To answer your question, yes.

17 Q. Okay. If we're going to compare TEAMS tests, then if  
18 we express it in a percentage, then we've got about  
19 18 hundredths of one percent, does that sound right?

20 A. Thousandths.

21 Q. 18 thousandths of one percent?

22 A. (Witness nodded head to the affirmative.)

23 Q. Okay. So not very much. If we're going to say that  
24 test scores are dependent upon how much money you  
25 spend, that relationship doesn't exist, does it?

1 A. Well, this is one of the outcome measures that I  
2 spoke of before, and there isn't a relationship there  
3 at all.

4 Q. Okay.

5 A. In other words, some analysts would utilize this as a  
6 main criteria of equity, in that it is an outcome of  
7 the dollars spent. And how does that relate to  
8 wealth? It doesn't have any relationship at all to  
9 wealth.

10 Q. Does this kind of -- this non-relationship between  
11 expenditures and outcomes as measured by test scores,  
12 does that have -- does that surprise you, from a  
13 review of literature and work that other people have  
14 done?

15 A. Well, I did include a review of some of the  
16 literature in that area. And generally, if I can sum  
17 it up in one line, the idea is that it's not the  
18 amount of revenue, it's how the revenue is used that  
19 makes the difference.

20 Q. Okay. And have there been a number of studies that  
21 have looked at those kinds of relationships?

22 A. Yes, there have been. And I reviewed some of those  
23 in this paper.

24 Please excuse me, I need to get over to the  
25 proper section.

1           The data analysis, as I summed on Page 96, show  
2           that there was no student or district characteristic  
3           that was strongly associated with increased test  
4           scores, nor was any Foundation School Program element  
5           or revenue variable related strongly to student test  
6           score gains. And I stated further, "These findings  
7           concur with current research in such fields as  
8           student achievement, school effectiveness and student  
9           improvement."

10           They talk -- this literature, for example,  
11           Purkey and Smith, Cuban, and other writers in this  
12           area, Clark, talk about such school level variables  
13           as leadership by the principal, of the school  
14           climate, the including of teachers in decision  
15           making, that seems to make a difference, that seems  
16           to make or result in effective schools. And I quote  
17           there saying, "Previous research was unsuccessful in  
18           finding variables, easily manipulable by policy  
19           directives that had a demonstrable effect on student  
20           achievement." And further, "Input-output analyses of  
21           quantitative measures such as class size, cost of  
22           school buildings or equipment, or the presence of  
23           compensatory education programs failed to find school  
24           level characteristics that were significantly related  
25           to academic achievement."



1           Additional research on this then, is -- follows  
2           on Page 99 and Page 100. For example, the much  
3           acclaimed Coleman study in the '60s, found that what  
4           was related to outcome seemed to be social heritage.  
5           In a study by the Rand Corporation for the  
6           President's Commission -- excuse me, I'll have to get  
7           you the date of that, it followed the Coleman study.  
8           One key finding was that the variations in the level  
9           of students' achievements bore little or no  
10          relationship to the resources of the programs of the  
11          schools.

12          Since publications of that report, there have  
13          been many studies looking at the validity of its  
14          methodology. And one such study looked at 130 other  
15          studies, that -- by a very well respected researcher,  
16          Hanushek. And it looked at a 130 studies that tried  
17          to discredit the Coleman study, or tried to reanalyze  
18          it and test what it had found. The author called it  
19          an "exhaustive compilation of 130 studies," and it  
20          analyzed -- each of these studies analyzed the  
21          relationship between student performance and student  
22          expenditures, or the determinants of such  
23          expenditures. And quoting, it found that "The inputs  
24          on which schools tend to concentrate and which lead  
25          to a difference in expenditures, appear to have

1           little" -- I beg your pardon, "appear to have no  
2           consistent pay off in terms of higher student  
3           performance."

4           The literature continues to find that there's  
5           little or no relationship between dollars and test  
6           scores.

7   Q.    Okay.

8           MR. KAUFFMAN: Your Honor, I didn't want to  
9           interrupt during the presentation, but we would  
10          object to the statements from these other books to  
11          the extent that they're offered for the truth of the  
12          matter stated, the quotes that Dr. Verstegen was  
13          making from these other books. We agree that she  
14          certainly can, as an expert, to the extent of that  
15          expertise, rely on hearsay information, I understand  
16          that. But to the extent that those statements are  
17          offered for the truth of the matter stated, we would  
18          object to them.

19          THE COURT: Okay. I'll overrule.

20          We're going to need to stop at 11:45, we've got  
21          a bit of an emergency working. Let's stop at a  
22          quarter 'til, please.

23   BY MR. O'HANLON:

24   Q.    So when we look at --

25   A.    Well, I just wanted to say I wanted to be sure that

1           the Texas data were not unusual, in terms of the  
2           larger world of education. And that's why I went to  
3           the literature.

4   Q.    Okay.

5   A.    Because it seems quite shocking at first glance that  
6           there's just no relationship. And it was found  
7           elsewhere very strongly, the same thing.

8   Q.    So, when you compare the -- when you look at test  
9           scores of students, you're not -- you're finding the  
10          same thing in Texas that other researchers have  
11          found, in essence, nationwide?

12   A.    Exactly.

13   Q.    Okay. Now, could you discuss with me the notions of  
14          vertical and horizontal equity?

15   A.    Yes. The idea of horizontal equity is that everyone  
16          should have equal, whatever it is, we'll call it  
17          dollars. And those are what those measures that I  
18          utilized tested, how equal were the dollars.

19   Q.    So that's like the chart on Page 56, is in some  
20          respects a measure of horizontal equity?

21   A.    Well, yes, but this chart on Page 56 is all summed in  
22          those earlier measures.

23   Q.    Okay.

24   A.    It's just the depiction of the quantiles.

25   Q.    Okay.

1 A. But every one of those was included in the overall  
2 measures that we talked about earlier, about the  
3 McLoone Index, the coefficient of variation, the Gini  
4 Index, and so forth.

5 Q. Okay. So those are all measures of horizontal  
6 equity?

7 A. Yes.

8 Q. All right. What's vertical equity?

9 A. Vertical equity says that some students cost more to  
10 educate, for example. And that according to equity  
11 principles, they should be given more dollars for a  
12 similar education. For example, a handicapped  
13 student or several handicapped students might require  
14 smaller class sizes. For example, they might require  
15 more teachers per number of students, and this is  
16 expensive. If we treated them the same as a regular  
17 child, no doubt their equal opportunity to realize  
18 outcomes of the school in process would be decreased.  
19 So therefore, the equity principles embedded in the  
20 vertical equity assessment, or idea, is that unequals  
21 should be given correspondingly more unequal amounts  
22 of revenue. Unequals the compensatory education is  
23 how we've defined it in the current law. Bilingual  
24 education receives more money, gifted and talented,  
25 vocational education -- I believe there's one other

1       -- and special education I mentioned earlier. So  
2       they receive additional dollars for the same thing.  
3       And vertical factors also can figure in, in terms of  
4       districts. Districts that are sparsely populated and  
5       it takes transportation costs. And oh, you may have  
6       three or five students in the classroom, and need to  
7       fund teachers, and so forth, is another consideration  
8       that is inherent in a vertical adjustment. So for  
9       additional student needs, and for additional district  
10      needs to more or less fund the very same thing,  
11      vertical equity says they should be getting more for  
12      these unequal needs.

13   Q.   Okay. Do the two notions tug at each other a little  
14       bit, horizontal equity and vertical equity? Do they  
15       kind of end up sometimes getting in competition with  
16       each other?

17   A.   Well, I suppose you could say if you had no vertical  
18       equity in the Foundation Program, you could increase  
19       the dollar amount of the horizontal equity. In other  
20       words, if you had -- didn't allocate those dollars in  
21       one direction, you could allocate them in another.  
22       If you didn't have your cost differentials, you could  
23       put that into a basic allotment, for example.

24   Q.   Okay.

25   A.   But I'm not suggesting that that would be a good

1 solution.

2 Q. Well, just to work through that, if we've got -- if  
3 the state is spending \$5 billion, and they were  
4 getting an extra -- it was a two-thirds/one-third  
5 split, so this \$5 billion represented two-thirds of a  
6 whole, then we've got 7.5 billion dollars in the  
7 Foundation School Program, correct?

8 A. Yes.

9 Q. And if we merely allocated that on the basis of 3  
10 million children equally, then we could raise a basic  
11 allotment of \$2,500.00 a student, couldn't we?

12 A. I haven't gone through the numbers, I don't have a  
13 calculator. But trusting your numbers, the dollar  
14 amount of the basic allotment would definitely rise.

15 Q. Okay. So we could have, under our present system, we  
16 could have a \$2,500.00 basic allotment instead of a  
17 \$1,350.00, but we've chosen to do this basic -- to  
18 reduce the basic allotment to \$1,350.00 so we can  
19 address some other needs. Is that the kind of tug  
20 that goes back and forth between those two notions?

21 A. Yes, that's a good illustration, I think.

22 Q. Okay. How do you determine priorities among those  
23 two notions -- for purposes of equity analysis, I  
24 suppose?

25 A. I'm not sure if I have an opinion on that.

1 Q. Okay. I mean, is there any way that we can -- for  
2 purposes of equity analysis, determine priorities?  
3 Or is that kind of a policy judgment that has to be  
4 made by somebody?

5 A. I believe that that's a policy decision that's best  
6 made in the legislative process.

7 Q. Okay. Now, when you looked at -- when you looked at  
8 the possibility of making cuts, didn't you kind of  
9 look at some of the balances and how they were  
10 changed, or are going to have to be changed?

11 A. Between the vertical and horizontal equity?

12 Q. Yes.

13 A. Well, the thing about the equity measures that I  
14 utilized, is I had to reduce all to -- I reduced the  
15 vertical measures out.

16 Q. Okay.

17 A. And measured only horizontals, so it may be an  
18 underestimation if you want to look at total funds.  
19 But I did look at a number of different alternatives  
20 and the alternatives in cases did include different  
21 conceptions of equity.

22 Q. Okay. Let me ask you one question. Your analysis in  
23 which you look at options for cutting, could also, I  
24 suppose, be turned around and looked at as a way of  
25 how to improve equity through some kinds of

1 increases?

2 A. I guess -- I guess that's so, yes.

3 Q. Okay. So, I mean, the same type of analysis would  
4 work that you -- that we're about to talk about in  
5 terms of the increasing as well as decreasing?

6 A. Yes.

7 Q. Okay. Now, how did you set about making -- setting  
8 up your, I suppose, some kind of matrix for decision?

9 A. The matrix for decision making, the final matrix for  
10 decision making was -- is on Page 110. And for  
11 example, in equity --

12 THE COURT: Let's do this, before we get  
13 into that, let's stop. And let's start up there, I'm  
14 interested in that. You say Page 110?

15 MR. O'HANLON: There's two Page 110s,  
16 Judge.

17 THE WITNESS: I'm sorry.

18 MR. O'HANLON: The second Page 110.

19 MR. GRAY: Is that Table 4.22?

20 MR. O'HANLON: Yes.

21 THE COURT: Okay. Let's start up there at  
22 2:00, and I'll see you all at that time.

23

24

(Lunch Recess)

25



## DIRECT EXAMINATION (RESUMED)

BY MR. O'HANLON:

Q. Dr. Verstegen, when we broke for lunch, we were on Page 110 of your report and talking about your kind of decisional matrix here. What were you trying to do when you set it out and can you kind of explain that to us?

A. Yes, I can. I would refer you to two tables that were summary tables, and one is on Page 108 and one is on 110. And what I did, was I looked at a variety of options to reduction in aid to education. And developed a methodology for measurement of the impact of reduction in aid on the State Board of Education's goals. On these two tables are four areas that those goals speak to, financial equity, attracting and retaining teachers, local impact and a well-balanced curriculum.

Q. Okay. Now, I see the numbers that are spread out there, what do they mean and how were they arrived at?

A. For example, taking the very first goal, the financial equity goal, I looked at a variety of alternatives to current law, utilizing many measures. These are shown on Page 73.

On Page 73, it shows the measures that were

1 utilized to assess that one goal criteria. The  
2 range, the restricted range, the Federal Range Ratio,  
3 the Gini Index, the coefficient of variation and the  
4 McLoone Index. These measures were calculated for  
5 each of the alternatives to current law which would  
6 reduce aid at approximately five or ten percent of  
7 the second year of biannual appropriations for the  
8 Foundation School Program.

9 For each one of the measures, the calculations  
10 are shown. These calculations were then summed  
11 across, in relation to the current Foundation Program  
12 measure of equitability. In particular, the  
13 statistic for each of those measures.

14 Q. Uh-huh.

15 A. So looking at, for example, the guaranteed tax base  
16 option, which is under programmatic reductions. You  
17 can see that the range is less than the range for  
18 current law, so that was given a plus. These were  
19 basically overall, some plus, minus and neutral zero.  
20 The restricted range increased, and it was therefore  
21 a minus. The Federal Range Ratio increased under  
22 that alternative, and it was a minus. The Gini Index  
23 increased under that alternative, it was a minus.  
24 The coefficient of variation increased under that  
25 alternative, and it was a minus. And then the

1       McLoone Index, the only one where increases show  
2       greater equity, decreased, and it was therefore a  
3       minus. Overall, there were four minuses and one  
4       plus. So netting that out, you ended up with a  
5       minus. I did the same for each one of the  
6       alternatives.

7               In the case where there appeared to be a  
8       positive effect over current law, it was given a rank  
9       of one. In a case where there was a neutral effect  
10      to current law, that is the differences were  
11      difficult to ascribe to a real positive or negative  
12      result, it was given a two. On most of these  
13      criteria, that is, on most of the State Board of  
14      Education goals for Texas education, when assessing  
15      reductions in aid, the alternatives were negative,  
16      overall. For example, attraction and retention of  
17      teachers, translating dollars into losses of salary  
18      and losses of teachers, did not net out in any case  
19      to a neutral or a positive. So utilizing what is  
20      termed in the literature, the constant comparative  
21      method, you look at the negatives and you determine  
22      the least and the most negative. That's what three,  
23      four and five indicates. Three would be the least  
24      negative, five would be the most negative in  
25      comparison with each other, and four would be

1 in-between. Therefore, on Page 108 and 110, the  
2 overall score is shown, although each of the data  
3 that goes into that score is indicated for each of  
4 the different alternatives and each of the different  
5 goal criteria. If you look at that table, you'll see  
6 that there are two parts to attracting and retaining  
7 teachers. And one part looked at reductions in  
8 salary, and one part looked at reductions in staff.

9 Under the local impact, looking at tax  
10 increases and reduction in aid, resulted in two parts  
11 to the local impact criteria. Therefore, each goal  
12 was weighted as one. In other words, attracting and  
13 retaining teachers had two parts, which when you sum  
14 together, is nine. You divide it by two, to weight  
15 it as one, and it's 4.5. The same, or likewise, for  
16 local impact. Four plus four is eight, divided by  
17 two, is four. So then you sum across, three plus  
18 4.5, plus four plus four, to get a total overall  
19 score. Then, with regard to the scoring, a lower  
20 score is considered more positive than the higher  
21 score. I did it in this manner, should the state  
22 board or other policy -- other individuals interested  
23 in policy, should they wish to weight these  
24 differently, they had the actual data and then they  
25 could weight whatever part they wanted, according to

1        their consideration of the importance of that goal  
2        criteria over other goals.  It's presented here as an  
3        even weight for each goal.

4 Q. Now, I notice that looking at Page 108, that the  
5 guaranteed tax base approach has got a five, and  
6 therefore the least equitable score. Why is that?

7 A. Well, should I conclude that you are referring to the  
8 equity score of five?

9 Q. Yes, ma'am.

10 A. As we just reviewed on, I believe, Page 73, it showed  
11 the greatest decrease in equity over the current  
12 system, in accordance with this scale.

13	EXAMINATION
----	-------------

14 BY THE COURT:

15 Q. Excuse me, what showed the greatest decrease in  
16 equity? If what?

17 A. I don't mean the absolute one most greatest decrease,  
18 but looking at the group that had the greatest  
19 decrease versus the group that had the least decrease  
20 in equity, the guaranteed tax base, on Page 73 --

21 Q. Uh-huh.

22 A. You look at the range under current law, and then you  
23 compare it to the guaranteed tax base range. And  
24 that -- it shows a better range, a more positive  
25 range, so that would be a plus.

1           When you look at the restricted range, you see  
2           it increases, so that would be a minus. Then, when  
3           you look at the Federal Range Ratio, it goes up to  
4           1.47 and 1.48, depending on the amount of decrease,  
5           so that's another minus. When you look at the Gini  
6           Index, it also increases, so that's a minus. When  
7           you look at the coefficient of variation, it also  
8           increases, so that's another minus. And when you  
9           look at the McLoone Index, it decreases, but that's  
10          the only one where decreases are less equitable.

11       Q.   But your guaranteed tax base is \$49,000.00, something  
12           like that?

13       A.   Yes, it is. It's \$42,900.00, at a reduction of  
14           \$250,000.00. And it's \$41,600.00 -- \$41,620.00  
15           guaranteed, at a reduction of \$500 million. That  
16           capitalizes all tax rates. That -- excuse me,  
17           provides a guarantee on every single cent of tax rate  
18           that is currently being taxed, for an M & O rate,  
19           excluding debt. I did do it with debt included, to  
20           figure that into a tax rate, and that is shown right  
21           beneath it.

22           Does that answer your question? It has more  
23           negatives than some of the other negatives, in that  
24           overall, there's one, two, three, four, five  
25           negatives and one plus, netting up to four negatives.

1 Q. Yeah, I'm not sure I understand guaranteed --

2 MR. O'HANLON: Tax base?

3 THE COURT: Yeah.

4 BY THE COURT:

5 Q. I'm looking at Page 108. Is that a page I could look  
6 at and view -- and know something?

7 A. I beg your pardon, Your Honor?

8 Q. Answer this, what guaranteed tax base figure did you  
9 use?

10 A. For the one where it says guaranteed tax base.

11 Q. Uh-huh.

12 A. I utilized the two tax bases and provided a common  
13 score.

14 Q. Okay. What page is that on?

15 A. That's on Page 73.

16 Q. 73?

17 A. Yes.

18 Q. I had it just a minute ago.

19 So you've got a guaranteed tax base of  
20 \$42,900.00 and \$41,600.00?

21 A. Yes. This dollar amount was backed into, utilizing  
22 all of the current revenue with the two reductions of  
23 \$250 million and \$500 million, so it utilized every  
24 bit of revenue. I should say, too, that I weighted  
25 the guaranteed tax base for cost differentials, which

1 is suggested by Coons and Sugarman. So in other  
2 words, it would take into consideration vertical  
3 pupil needs, additional costs for handicapped kids  
4 and additional costs for compensatory education kids  
5 and so forth, according to current law.

6 Q. Okay. If you had a guaranteed tax base that was  
7 substantially higher, then do you think that  
8 legislative reductions would not be felt in the same  
9 negative way as your guaranteed tax base of  
10 \$42,900.00? Say it was double. Say your guaranteed  
11 tax base was double.

12 A. Uh-huh.

13 Q. And assuming the reductions you were talking about,  
14 would you have as many negatives out of that as you  
15 have out of, say, an \$84,000.00 guaranteed tax base,  
16 as you do a \$42,000.00 tax base?

17 A. I can't answer conclusively, but I would think that  
18 the negatives here -- I can't answer conclusively,  
19 Your Honor, I --

20 Q. Okay. Let's say a guaranteed tax base is five times  
21 \$42,000.00. Let's say it's a \$200,000.00 tax base,  
22 does that make it more possible for you to answer  
23 conclusively?

24 A. Well, I can say that I did look at no reductions, and  
25 -- with '85-'86 data, and modeled a guaranteed tax



1 base, because I had this same sort of question. So I  
2 utilized no reductions in aid, so that I could  
3 compare it to reductions to the '85-'86 baseline.  
4 And I did compare it across the measures. And  
5 overall --

6 MR. O'HANLON: I think -- can we ask you to  
7 explain the calculations? I don't think you're --

8 THE COURT: You're not answering --

9 MR. O'HANLON: You're not answering quite  
10 the same question that the Judge is asking.

11 THE COURT: Okay.

12 MR. O'HANLON: Could you kind of explain  
13 how you arrived at the tax -- how you arrived at that  
14 calculation?

15 THE COURT: Which calculations are you  
16 asking about?

17 MR. O'HANLON: The guaranteed tax base.

18 THE COURT: In arriving at the \$42,900.00?

19 MR. O'HANLON: Yes.

20 THE COURT: Okay.

21 A. Well, a guaranteed tax base takes a tax rate in the  
22 district times that guaranteed base to determine  
23 dollars available locally. It begins with the total  
24 district budget and it takes the tax rate in the  
25 district times the guaranteed tax base, as if all the

1 districts had the very same tax base --

2 Q. Uh-huh.

3 A. -- and it gives you a dollar figure. Then you take  
4 actual tax rate times the district's actual assessed  
5 evaluation, full market assessed evaluation, their  
6 real tax rate, their real property value, and get  
7 another dollar calculation. Then you subtract the  
8 two and the state provides the difference.

9 Q. Okay. Let me give you back to Counsel there.

10 THE COURT: Go ahead.

11 MR. O'HANLON: Okay.

12 DIRECT EXAMINATION (RESUMED)

13 BY MR. O'HANLON:

14 Q. Okay. One of the things that you run into whenever  
15 you talk about equity with respect to tax bases,  
16 you're putting more decision making on the local  
17 decision -- on the local voters, is that correct?

18 A. We find in the literature, and I found, I think, in  
19 looking at this, and I did write about it in here,  
20 somewhat, that goals that underscore a policy  
21 sometimes are at tension with each other. Sometimes  
22 by providing, for example, more taxpayer equity, more  
23 choice and a guarantee to the taxpayer, you, on the  
24 other hand, take away from pupil equity or dollars  
25 per pupil, in that taxes vary, bringing different

1 dollars to the district with no state foundation to  
2 equalize. This is something that we see in different  
3 ways of writing finance formulas. And I think, in  
4 looking at equity, in that some formulas speak  
5 directly to pupil equity and some, more to taxpayer  
6 equity. In this latter case, sometimes by supporting  
7 one goal more, you take away from another goal, and  
8 the question remains, if you can have both.

9 According to these data, it looks like, in the  
10 Texas system as it currently operates, you can't have  
11 both.

12 THE COURT: Can't have both?

13 THE WITNESS: Taxpayer equity, overall, and  
14 pupil equity.

15 THE COURT: Okay. If what? If local  
16 districts can tax and raise money?

17 THE WITNESS: No, if the state supports a  
18 program based on effort, on effort.

19 Actually, in looking at the data under a  
20 guaranteed tax base plan for '85-'86, we see there  
21 would be losses in dollars to the poorest and to the  
22 wealthiest districts, the two extremes. This relates  
23 to perhaps lower tax rates at both of these two  
24 extremes.

25 THE COURT: Okay.

1 BY MR. O'HANLON:

2 Q. Perhaps we can illustrate this point. Dr. Verstegen,  
3 I'll show you now what's been admitted into evidence  
4 as 106, Plaintiffs' Exhibit 106. And what -- if I'm  
5 hearing you properly, if you've got a guaranteed tax  
6 base yield system, what you've got is a situation  
7 where everybody gets the same amount of dollars for  
8 the same amount of tax rate?

9 A. For every penny taxed, under a system that guarantees  
10 a \$42,000.00 tax base, would be -- you would get  
11 approximately \$42.00 per pupil for each cent taxed.

12 Q. Okay. So if you have this kind of variation as  
13 displayed by Plaintiffs' Exhibit 106 in tax rates,  
14 then you're going to have that kind of variation and  
15 the exact same variation in revenues?

16 A. Yes.

17 Q. Okay. And because that is a lot more skewed, or a  
18 lot more varying than, for example, than the present  
19 system in Texas, that's why we could say it's less  
20 equitable?

21 MR. KAUFFMAN: Your Honor, I would object  
22 to the factual assertion there, that this is more  
23 skewed than the present system in Texas. There's no  
24 predicate for that.

25 THE COURT: Well, I'll let him put the

1 question, she may answer.

2 BY MR. O'HANLON:

3 Q. I think you looked at the '85-'86 data with respect  
4 to equity analysis, itself, did you not?

5 A. Yes, I did. Looking at the '85-'86 dollars available  
6 to districts at an equal tax base, I can tell you how  
7 each of the measures compare.

8 Q. Yeah, why don't you?

9 A. The coefficient, under the current system in '85-'86,  
10 the coefficient of variation --

11 Q. Are you going to compare the present system to this  
12 guaranteed tax base system?

13 A. Yes, utilizing the same cost differentials in number  
14 of students.

15 Q. Okay.

16 A. The revenue, under the current system for all pupils,  
17 was \$2,390.00. Under the guaranteed tax base system,  
18 it's \$2,445.00.

19 MR. KAUFFMAN: Excuse me, where does that  
20 number come from? I'm sorry.

21 THE WITNESS: I have the printouts, if you  
22 would like to look at those.

23 MR. KAUFFMAN: It's not from one of the  
24 exhibits?

25 THE WITNESS: No.

1 MR. GRAY: Are you using the \$42,910.00 tax  
2 base, or the \$41,620.00 tax base?

3 THE WITNESS: Because both of those  
4 included reductions in aid and I had questions  
5 whether the reductions in aid apparently caused this  
6 difference, I did it with no reductions in aid. And  
7 it's \$46,350.00, \$46,350.00 guaranteed, as a tax  
8 base. The coefficient of variation is 15.89 under  
9 the Foundation School Program, and under the  
10 guaranteed tax base, it's 27.75.

11 BY MR. O'HANLON:

12 Q. Okay.

13 A. The Gini Coefficient, under the Foundation School  
14 Program, is .075, and under the guaranteed tax base,  
15 is .153.

16 Q. Under the guaranteed tax base, it's .153?

17 A. Yes, it's increased. The Federal Range Ratio is .48,  
18 currently. Under the guaranteed tax base, it's 1.44.

19 MR. KAUFFMAN: Your Honor, so I can  
20 understand this, can I just ask her a couple of  
21 questions?

22 THE COURT: Sure.

23 VOIR DIRE EXAMINATION

24 BY MR. KAUFFMAN:

25 Q. Your present system, you mean '85-'86?

1 A. We utilized the dollars in the taxing -- the M & O  
2 tax rates for '85-'86.

3 Q. Okay. And the guaranteed tax base is for the '87-'88  
4 year? Is that what your model is?

5 A. It's for '85-'86, so there were no assumptions built  
6 in, in terms of revenue.

7 The McLoone Index, currently, is .933, and  
8 under the guaranteed tax base, it's .801. This is  
9 the only one where a decrease shows less equity. The  
10 range, currently, is \$9,781.00, under the guaranteed  
11 tax base, it's \$10,846.00. That's a range ratio of  
12 6.77, or 18.24. Under the two systems, as the bottom  
13 also went way low, as well as the top going up.

14 The restricted range changed from \$965.00 to \$2  
15 thousand.

16 DIRECT EXAMINATION (RESUMED)

17 BY MR. O'HANLON:

18 Q. \$965.00, excuse me.

19 A. \$965.00 to \$2,161.00. Those ratios changed from 1.48  
20 to 2.44. The correlation, under the current system,  
21 is .60. Under the guaranteed tax base, it's .30,  
22 it's reduced by approximately one-half. But the  
23 magnitude of the difference is about the same under  
24 both of them, that is, the slope. The slope, under  
25 the current system, is .0010. Under the guaranteed

1 tax base system, it's .0080.

2 Q. Now, if we simply take this system and enlarge the  
3 numbers, and I know you don't have a calculator in  
4 front of you, but if you simply just enlarge the  
5 numbers, you're still going to have these same kinds  
6 of variations because of the existing variations in  
7 the tax rate, isn't that right?

8 A. Because of the existing variations in the tax rate.

9 Q. So no matter how big the tax base is, whether it's  
10 \$40,000.00, whether it's \$400,000.00, in fact, the  
11 rate compounds as the base gets bigger, doesn't it?

12 A. The rate -- I beg your pardon?

13 Q. Well, let's assume that I've got a 10 cent variation  
14 in my property tax from one district to another. On  
15 a \$40,000.00 base, that's -- I would have to do the  
16 math. I've got to remember which way to put my  
17 decimal points. Let's say on \$1,000.00 -- well, on a  
18 \$10,000.00 base -- let me sit down and do it.

19 A. I will say that the -- I think the goal of a  
20 guaranteed tax base is not equalizing expenditure,  
21 but it's equalizing the ability of districts to raise  
22 money that comes out in different dollars per pupil.  
23 And these dollars can vary quite a bit.

24 MR. KAUFFMAN: So this guaranteed tax base,  
25 as you've used it here, is based on '85-'86 data.



1 And it assumes that, given the opportunity to have  
2 more money as you raise taxes, districts would ignore  
3 that and keep with their same tax rates, is that  
4 right?

5 THE WITNESS: It utilizes no projections,  
6 that's right.

7 MR. KAUFFMAN: So every district would  
8 still be assumed to have the same tax rate it does  
9 now, even though they would have the opportunity to  
10 have the same amount of money as any other district  
11 if they had a normal tax rate.

12 THE WITNESS: Yes. I guess inherent in  
13 this guaranteed tax base as it's worked out, is that  
14 states don't have as much money as tax rates might  
15 require, so there's usually a certain amount of  
16 revenue available for distribution as well, which  
17 figures into the absolute ability to support all tax  
18 rates.

19 MR. KAUFFMAN: Thank you.

20 I'm sorry.

21 BY MR. O'HANLON:

22 Q. Okay. Now, what I was talking about on compounding,  
23 is that if I've got a \$40,000.00 tax base, and I  
24 raise my taxes by 10 cents, I'm going to raise  
25 \$40.00. And if I've got a -- and if I multiply that

1 times that \$40,000.00 and make it a \$400,000.00 tax  
2 base, and I've got a 10 cent difference, that  
3 difference is going to be 10 times as much?

4 A. Exactly. That's why these goals of supporting  
5 district's ability to pay on a tax rate, or more  
6 liberty, sometimes requires our attention with more  
7 equity in terms of kids' equity or equal dollars per  
8 student.

9 Q. Okay. And the only way that when -- if you talk  
10 about equal expenditures, the only way that you can  
11 do that is to assume that all voters in the state are  
12 going to put forth the same effort?

13 A. Exactly, if you would like to combine the two. But  
14 part of it is allowing districts to set their own tax  
15 rate. It's -- inherent in that system, is that  
16 voters set their own tax rate rather than they're  
17 required to, because then it becomes full state  
18 funding. It's a different system then.

19 Q. Okay. Is it reasonable to believe -- have you known  
20 anybody that has done that and has gotten a uniform  
21 rate?

22 A. Michigan has this kind of a plan.

23 Q. Uh-huh.

24 A. And I don't know what its rates look like. No, I  
25 don't. I would be very surprised if they were

1 uniform.

2 Q. Okay. Is it reasonable to believe that people out in  
3 Lampasas -- do you know where Lampasas is? That's  
4 all right, we'll talk about that one.

5 MR. KAUFFMAN: Your Honor, before she goes  
6 on from guaranteed tax base, can I take her on Voir  
7 Dire on this exhibit she's referring to?

8 MR. O'HANLON: Wait a minute.

9 MR. KAUFFMAN: Excuse me, Your Honor, may  
10 I?

11 THE COURT: I don't know what exhibit she's  
12 referring to.

13 MR. KAUFFMAN: The witness was reading  
14 numbers from her exhibit.

15 THE COURT: Okay. I understand. Now,  
16 what's the problem?

17 MR. KAUFFMAN: Okay. I would like to see  
18 the exhibit. I mean, it's an exhibit that she is  
19 relying on to give her testimony as an expert. And  
20 we have a right to see it during cross examination.  
21 I wanted to make sure that we could have an  
22 opportunity to view it as soon as your examination is  
23 over.

24 MR. O'HANLON: I have no objection to that.  
25 That's significant.

1 MR. KAUFFMAN: Okay. That's all I wanted.

2 THE COURT: Okay.

3 BY MR. O'HANLON:

4 Q. So when you're talking about doing anything, you're  
5 looking at kind of conflicting tugs, aren't you? If  
6 you do taxpayer equity, then you may be impairing  
7 student equity?

8 A. In general, that's right, although the Foundation  
9 School Program provides perfect taxpayer equity  
10 within the program. There's an equalized tax rate in  
11 this, similar revenues to everyone.

12 Q. Okay. It's only when you allow somebody to get  
13 outside of the Foundation School Program that that  
14 equity gets out of kilter, when you allow enrichment?

15 A. That the dollars -- they would look different,  
16 anyway, because of special student needs and special  
17 district needs, so in general, they would look  
18 different. But the intent is that you have both  
19 within that program through a state and a local  
20 combination.

21 Q. Okay. And similarly, when you're talking about  
22 horizontal, like we were talking before lunch, you've  
23 got the same kinds of trade-offs between horizontal  
24 equity and vertical equity?

25 A. Yes.

1 Q. Based upon all your examinations of the Texas system,  
2 do you have any conclusion with respect to the system  
3 of financing in Texas, with respect to its equity?

4 A. Nothing to add to the conclusions that I stated  
5 earlier.

6 Q. Okay. And you think that on balance, it's an  
7 equitable system of school finance?

8 A. In general, it's an equitable system of school  
9 finance. You need to be willing to discount, I  
10 think, the top five percent of districts, in that  
11 there is such a small proportion of students. Even  
12 considering them, the measures are quite laudatory.  
13 But without -- in looking at the overall majority of  
14 students in Texas, yes, I do think that the system,  
15 in terms of distribution of revenues, is really quite  
16 equitable.

17 Q. Okay. Now, we were talking at lunch time, I believe,  
18 that you had just a couple of small little  
19 corrections that you wanted -- mathematical  
20 corrections that you wanted to inform the Court  
21 about?

22 A. Well, I did. I wanted to point out that in the body,  
23 when I talked about the data sources on Page 9, that  
24 years 1984-'85, and although it is stated in the  
25 second paragraph down, that is a correction, that

1           that data source is 1984-'85. And also --

2                   MR. KAUFFMAN: I'm sorry, where is that?

3                   THE WITNESS: On Page 9, at the very top.

4                   MR. GRAY: The '85-'86 is '84-'85?

5                   THE WITNESS: Exactly. And that's stated  
6           in the second paragraph. You'll see that they're at  
7           odds with each other.

8   A.   And then there's one other, and that is on Page 48,  
9       looking at the 90th and the 10th, the ratio is not  
10      1.25, it's 1.34.

11                   THE COURT: 1. --

12   A.   34, at the 90th and 10th. Those have come to my  
13       attention, and I thought I would like to point those  
14       out.

15   BY MR. O'HANLON:

16   Q.   Okay. Do either one of those corrections change your  
17       testimony with respect to the system?

18   A.   Not at all.

19                   MR. O'HANLON: We'll pass the witness.

20                   CROSS EXAMINATION

21   BY MR. TURNER:

22   Q.   Dr. Verstegen, we have had a witness called by the  
23       Plaintiffs in this case, before you arrived, to talk  
24       about equity and make the statement to the effect  
25       that this witness didn't think you ought to look at

1 all of these kind of calculations and formulas to  
2 determine equity, but you just sort of looked at the  
3 raw data and you ought to be able to make a judgment  
4 from that.

5 I take it that you hold the view that proper  
6 determinations of what is equitable in terms of  
7 school finance, is a somewhat more sophisticated  
8 process than the one to which I referred.

9 MR. KAUFFMAN: Your Honor, we would object  
10 to the question. Dr. Hooker, when he was talking  
11 about that, spoke of analyzing it in terms of groups  
12 of districts and ranges of districts. He merely said  
13 you didn't have to do elasticity measures. He never  
14 said you just used the raw data, so the question  
15 mischaracterizes the record.

16 MR. TURNER: Well, Your Honor, I had the  
17 Berne and Stiefel book, if you'll recall. I showed  
18 him all of the various methods that have been  
19 referred to here by this witness. And he disavowed  
20 those, he didn't think all of those were necessary.  
21 And that's the inquiry I'm trying to make here of  
22 this witness, as to what her view is on that kind of  
23 simplistic approach to equity analysis, that it would  
24 ignore these various methodologies that are set out  
25 in this report.

1 THE COURT: Okay. You may continue, I'll  
2 overrule.

3 BY MR. TURNER:

4 Q. You may answer the question, Dr. Verstegen.

5 A. I believe that if you're interested in getting at a  
6 non-distorted view of a total system, that there are  
7 procedures in place for arriving at that. The set of  
8 measures I utilized would do that. The measurement  
9 of equity in school finance has developed a science,  
10 a scientific basis to some extent, over -- over the  
11 last, oh, ten years, maybe a bit more than that. And  
12 it is a bit more refined than it used to be. You  
13 specifically referred to categories, I believe, and  
14 on -- oh, we look at in Texas on the wealth  
15 categories, for example, they look as if each one of  
16 those is equal, but the top category is only 1.93  
17 percent of pupils. It doesn't have an equal weight  
18 with another category that may be 18 percent of the  
19 pupils, so likely provides some different answers  
20 than you utilizing all of the values in utilizing the  
21 whole universe of values, and in determining an  
22 answer from that.

23 Q. Dr. Verstegen, you referred to a Dr. -- is it Robert  
24 Berne and Dr. Leanna Stiefel, who are authors of a  
25 textbook that I have looked at a copy of before.



1           What is the significance of that particular work in  
2           school finance analysis?

3       A.    I don't know if I have attempted to determine the  
4           significance of that work, but I can give you my  
5           opinion that it brought together a lot of information  
6           that had been building and growing over the years in  
7           school finance, starting back in 1976 at the  
8           Education Commission of the States, when Allan Odden  
9           and Robert Berne and Leanna Stiefel collected data  
10          from 35 states and began to compare them on these  
11          measures and began to refine the methodology in the  
12          measurement of equity and school finance. I  
13          considered it -- I consider it an authoritative text,  
14          in many respects, on the subject.

15       Q.   Dr. Verstegen, I was looking to see -- you had  
16           footnoted that text, and I do not recall the date  
17           without finding the footnote, that that text was  
18           authored and published. Do you recall when that text  
19           first became available?

20       A.    I believe I'll need to refer to the footnote, as  
21           well, just to be sure that -- and the footnote is  
22           Footnote 10, on Page 10.

23                       MR. KAUFFMAN: We have a 1984 copy, right?

24                       THE WITNESS: 1984.

25

1 BY MR. TURNER:

2 Q. And I do not recall if that was the first publication  
3 of that book in '84, or whether it was actually a  
4 book that had been published earlier, or do you  
5 recall?

6 A. I didn't note that it was a second edition, although  
7 the work on this area, by those authors, began much  
8 earlier. And is included, probably, in the journal  
9 literature and as I said, the Education Commission on  
10 the States in Denver, Colorado.

11 Q. Dr. Verstegen, are there other experts in the field  
12 of finance that have recognized these approaches to  
13 equity analysis?

14 A. Yes, indeed.

15 Q. And give us some idea of what other individuals are  
16 in the field and have used similar methodology?

17 A. Kern Alexander has written text in finance, in law,  
18 both as they relate to education, and prolifically in  
19 the field. I believe when I last saw him introduced,  
20 they said he had written some 40 books. But again,  
21 this isn't something that I checked and counted.  
22 He's the executive editor of the Journal of Education  
23 Finance, the most highly respected academic journal  
24 in the field. Kern Alexander has provided analyses  
25 for Florida, for example, utilizing these measures.

1 Hickrod from Illinois, is another example, who has  
2 been very fastidious in keeping track of the equity  
3 of the Illinois system. And has written in the field  
4 and has a position with a research-funded area, in  
5 the area of finance. And is -- at any rate, he  
6 utilizes these measures and has written, analyzing  
7 Illinois using these measures, for example. Virginia  
8 finance has been analyzed by Dick Salmon, who is  
9 currently putting together a publication on all of  
10 the state systems, and is active in the field of  
11 education finance.

12 I beg your pardon, I'm not sure it was actually  
13 produced by Dick Salmon or by his students, with him  
14 directing the research. However, he wrote the  
15 results and presented them. And it was published in  
16 the Journal of Education Finance. There are a number  
17 of experts in the field that utilize this methodology  
18 in measuring school finance.

19 Q. Have you had occasion, personally, to work with any  
20 of these people that you have mentioned, these other  
21 experts in school finance, or done joint projects  
22 with them?

23 A. I spent some three to four years at the University of  
24 Wisconsin, Wisconsin Center for Education Research,  
25 working with Richard Rossmiller, who was instrumental

1           in formulating the conceptualizations of weightings  
2           for vertical equity in the school finance project,  
3           early on.

4           I have been in constant communication with -- I  
5           beg your pardon, I have been in communication with  
6           Robert Berne, regarding this methodology, because it  
7           presented some questions that I felt more comfortable  
8           with him providing an interpretation.

9           I am a member of the Board of Directors of the  
10          American Education Finance Association, so I work  
11          with a number of these folks, like James Phelps, who  
12          is in charge of school finance in Michigan and helped  
13          me with the guaranteed tax base system, both  
14          operationalwise and yet in terms of Texas, and  
15          suggesting the inclusion of debt service, which was  
16          one of their proposals to the Michigan Legislature  
17          early on, but wasn't supported by the Legislature.

18          Robert Berne is also on the Board of Directors  
19          for the American Education Finance Association, as  
20          are a number of other individuals in the area of  
21          school finance around the United States.

22          And as a book review editor for the Journal of  
23          Education Finance, I am in contact with some of the  
24          writing and some of the others that work with the  
25          journal. For example, James Ward, the President of

1 the American Education Finance Association, who is  
2 now in Illinois. And just recently, Charles Benson,  
3 who I'm special edition editor of an upcoming  
4 journal. And I'm in the area of economics and he and  
5 I are both contributing to that. And I'm  
6 coordinating that effort, so I've been in contact  
7 with Charles Benson. Not specifically in regard to  
8 different questions, but we have just discussed,  
9 however.

10 I imagine others would come to mind as I think  
11 through this. I received the Outstanding  
12 Dissertation Award in the area of education finance  
13 from the American Education Finance Association, the  
14 American Association of School Administrators, and  
15 the National Education Association, and that was  
16 presented by Arthur Wise. And I've been informally  
17 -- I communicate with some of the others with whom  
18 this was associated.

19 I do try to keep in touch with K. Forbis  
20 Jordan, who has written prolifically in the field,  
21 and who is a senior specialist in the Congressional  
22 Research Service, the Library of Congress in  
23 Washington D.C.. So I'm sure others would come to  
24 mind, but in general, I -- does that answer your  
25 question?

1 Q. Yes, thank you.

2 Dr. Verstegen, in Dr. Berne's and Dr. Stiefel's  
3 book, the statement is made, or the caution is given  
4 against reliance on one method of analysis. And I  
5 want to ask you, why did they issue that caution in  
6 their text?

7 A. I really have no opinion. I don't know what they had  
8 in mind. I know what I have taken from that.

9 Q. And maybe I misstated them, in fact, I think there  
10 may be some reference in your report to that. Maybe  
11 what they were cautioning against was the selection  
12 of, let's say for example, only the range -- or only  
13 the restricted range, and to form conclusions of  
14 equity based on only looking at one of the factors or  
15 the methodologies that could be selected.

16 A. Oh, I understand. I take them to mean that, yes.

17 Q. And why is that important?

18 A. Because the measures provide an overall picture of  
19 the variability, the difference in the top and  
20 bottom, and then the difference in the 5th and 95th,  
21 they include different ways. If you looked only at  
22 the McLoone Index, you would for example, not  
23 consider the whole top of the distribution, you would  
24 only look from the middle, down. So it provides an  
25 overall picture, more or less. Especially with

1           inflation affected measures, numbers look very  
2           different over the years. And the range and the  
3           restricted range, for example, are numbers that are  
4           affected by inflation.

5   Q.    Would it be acknowledged by experts in your field,  
6           generally, that to do a proper equity analysis, that  
7           some reasonable selection of the items that are shown  
8           on the board there, would need to be made to do a  
9           proper and fair equity analysis?

10   A.   I can't answer for the experts in the field, in  
11           general.

12   Q.    In other words, it may be that some experts might  
13           focus in on one or two of these variables, as  
14           considering it more important under certain  
15           circumstances, and then they may, in looking at  
16           another system, determine for some reason that the  
17           Gini Coefficient might be a more important factor  
18           because of the variables that they see, and the  
19           various systems they're analyzing?

20   A.    I guess to answer your question, that in some cases,  
21           this depends on values orientations. And if your  
22           values orientations supports fairness for taxpayers,  
23           that you may be more inclined to look at revenue  
24           support for effort, whereas other values orientations  
25           may speak to fairness for kids, the actual recipients

1 of the education. And they would say that this is  
2 the most important part of the equation, is the kids.

3 I guess, some, like McLoone, who is someone  
4 that I've had some association with, is concerned  
5 about the bottom half of the distribution and feels  
6 that this is something that should be looked at. And  
7 hence, we have the McLoone Index.

8 Q. In terms of other studies of school finance equity  
9 that you may have reviewed that have been prepared on  
10 other state systems, would you say that the measures  
11 that you have selected to look at the Texas system,  
12 are about average in number, or better than average  
13 in number, or less than average in number of the --  
14 in comparison to the other studies that may have been  
15 done around the country?

16 A. In some cases, you're talking about recency. I think  
17 that that may be something that figures into it. I  
18 think that these -- to answer your question, are  
19 fairly commonly respected -- respected array of  
20 measures, in that you see these measures utilized  
21 very much in an equity of a school finance system  
22 with regards to pupil equity. For example, they're  
23 even presented in a general finance text that you  
24 teach to beginning students in school finance. They  
25 will -- graduate students would be beginning students



1           in school finance. The Johns, Morphet & Alexander  
2           Text reviews these as a way to look at equity, if  
3           that's what you are referring to.

4   Q.   And that is a basic text that one would have in the  
5        university who chose this course of study that would  
6        reveal these types of measures of equity?

7   A.   I think around the country -- and this is an opinion,  
8        that school finance is a required course for people  
9        going on to be a superintendent, or a -- to have a  
10       substantial relationship with finance in the future,  
11       so yes.

12   Q.   Dr. Verstegen, I was looking at Page 27, if you would  
13        also refer to that page of your report. Where you  
14        conclude in the middle, or make the statement in the  
15        middle of the page there, the middle of that  
16        paragraph, that "A moderate relationship was found  
17        between wealth and operating cost and wealth and  
18        total revenue. However, the amount of variation  
19        explained for wealth and operating cost was low, as  
20        was the variation explained by wealth and total  
21        revenue." Now, I believe you have spoken to this  
22        previous, but do I understand this correctly to say  
23        that those variations, or those relationships are  
24        below, meaning in terms of showing some relationship  
25        between wealth of districts and the revenue expended

1 or collected?

2 A. The r squared accounts for 35 percent to 41 percent --  
3 excuse me, 42 percent rounding off of the variation  
4 by wealth. So the r squared indicates that less than  
5 half of the variation, or almost 40 percent -- 40  
6 percent or 35 percent, respectively, can be accounted  
7 for by wealth in total revenue or operating costs.

8 Q. Now, have you done any comparisons of the  
9 relationships that exist between tax rates in  
10 districts and total revenue?

11 A. Yes, there are correlations on tax rates in this  
12 paper.

13 Q. Where would we find that?

14 A. Excuse me, I will find that page for you. It's Page  
15 33. The correlation between the maintenance and  
16 operation tax rate and total state and local revenue,  
17 is .402.

18 Q. And what kind of relationship does .402 represent?

19 A. Well, as I said, these are defined differently by  
20 different folks. For example, Bartz, in his textbook  
21 on statistics, would count anything .4 as a low  
22 relationship, but I counted that as a moderate  
23 relationship. I was trying -- so I call that a  
24 moderate relationship. It will be at a low moderate  
25 relationship.

1 Q. And explain to me what that relationship means. Is  
2 that saying that the lower the M & O rate, the lower  
3 the revenue? Is that the positive correlation? Is  
4 that the meaning of that?

5 A. It's the higher the revenue, the higher the tax rate.  
6 As one goes up, the other goes up .4.

7 Q. If our Texas system were to be characterized by some  
8 who have testified here, as a tax high, spend low  
9 circumstance for poor wealth districts, could we  
10 determine that, or the veracity of that conclusion  
11 from any of the data that you have developed?

12 A. Excuse me, it's a what? I beg your pardon, it was --

13 Q. If our system has been characterized by some who have  
14 testified in this courtroom, as being a tax high,  
15 spend low circumstance for property poor districts,  
16 could we either verify or refute that conclusion  
17 based on any data that you have developed?

18 A. Well, I think this table here shows that -- looking  
19 at it as I've first seen it today, it looks like  
20 these poor districts have a lower rate -- tax rate.  
21 Is that what you mean?

22 Q. Yes. Is there anything in your data that would  
23 analyze whether or not that conclusion has any  
24 validity?

25 A. Well, this relationship between state and local

1 revenue per pupil is not a strong relationship as  
2 shown by the correlation.

3 Q. All right. And then could we look at some of your  
4 correlations based on wealth and make any -- draw any  
5 similar conclusions, based on those correlations?

6 A. If you look on Page 32 for Footnote 7, I'll read  
7 Footnote 7. "For wealth and 1) total tax rate, 2) I  
8 & S rate, 3) M & O rate, the r squared" -- the amount  
9 of variation that was accounted for by these various  
10 variables was ".050, .074, and .003, respectively.  
11 Thus, wealth accounted for less than seven percent  
12 (at most) in the variation in district's M & O, or I  
13 & S, or total tax rate."

14 Q. So wealth accounted for seven percent of the I & S  
15 rate, and five percent of the variation in the total  
16 tax rate, and less than one-third of one percent of  
17 the M & O rate, am I reading that correctly?

18 A. Yes.

19 Q. Dr. Verstegen, let me refer you to Page 54 of your  
20 report. On that page, you compared the coefficient  
21 of variation, Federal Range Ratio, the McLoone Index,  
22 the restricted range, 95th to 5th percentile, and the  
23 correlation between wealth and revenue for 1976 in  
24 Texas and 1986. And you earlier advised us that the  
25 1986 numbers for those measures were more favorable

1           than the 1976 numbers. Being acquainted, as you are,  
2           with the significance of each of those measures and  
3           the numbers related and reflecting those measures,  
4           could you tell me how significant the degree of  
5           change is from 1976 to 1986, in terms of equity in  
6           the Texas system, as reflected by your data?

7       A.   Any change is significant, because this uses all --  
8           every single last student in the measure.  
9           Significance is a test of how a random sample relates  
10          to the whole population. So, when you say I have  
11          this category, for example, of students, if you're  
12          saying this is the way it is for the state as a  
13          whole, you need to look at the significance of that  
14          number. You need to see if it is significant,  
15          because you make it a different number. But it might  
16          not be significant, it might not be true of the whole  
17          population. So every change of any degree is  
18          significant in these data.

19               Now, to look at the coefficient variation for  
20               1976, it's 22.5. And it was reduced to 15.9 in 1986,  
21               almost a 30 percent reduction, actually, 29.33  
22               percent change. The Federal Range Ratio was reduced  
23               by 46 percent, from .89 to .48. The McLoone Index  
24               was reduced by .049. It went from .884 to .933. And  
25               the McLoone Index doesn't have a large range, so

1 looking at a percentage, it shows 5.54 percent  
2 change. But when you look at the table of states,  
3 you see that it's changed in ranking. It would have  
4 changed in ranking quite a bit, so I believe the  
5 percentage underestimates the change in the McLoone  
6 Index.

7 The restricted range -- and these numbers are  
8 deflated, because they're compared across town. And  
9 they're deflated to 1967. So in other words, I put  
10 them in equal 1967 dollars. And the restricted range  
11 went then from \$462.73 to \$272.52. And that's at the  
12 95th and 5th percentile, or 41 percent change. The  
13 correlation was .62 in 1976, and .60 in 1986, for a  
14 change of .02. I should mention that the property  
15 value used here, was one that was utilized to  
16 distribute the 1986 local fund assignment and it has  
17 a lag time. The reason that was utilized, is because  
18 it's more comparable to this property value in 1976,  
19 according to my understanding. That showed about a  
20 3.23 percent change. I didn't have the elasticity  
21 data at the time, but I could provide you that  
22 information, perhaps after the break, of how that has  
23 changed as well.

24 Q. Dr. Verstegen, looking at those percentages of change  
25 and those measures over that ten year period, and

1           then looking back at the tables that show for 1976  
2           various rankings of the states of the union, based on  
3           those measures, and being familiar, as you are, with  
4           what's going on across the country in terms of  
5           changes in school finance system, are you able to  
6           form an opinion, based on your experience and  
7           training, as to whether or not Texas, in comparison  
8           to other states in the union, has made great progress  
9           toward equity or a little progress, not much, but a  
10          little, or obviously, they haven't moved backwards.  
11          But what kind of movement forward do those numbers  
12          represent that we see displayed on Page 54?

13       A.   Well sir, I don't think anyone would say that Texas  
14           and Delaware are the same, in looking at comparing  
15           those numbers. Or that anyone would say that Texas  
16           is like New York, or Rhode Island, or Florida, which  
17           has a very different arrangement of districts.

18                I present the 1976 data for comparison at that  
19           point, for cross-national comparisons. But there are  
20           so many different data sources that folks use, I  
21           would think, that -- for example, not in all states  
22           would I imagine that properties are fully assessed to  
23           market value, you see, so the correlation might bear  
24           some difference there. That would be one that comes  
25           to mind.

1           However, in the 1976 study, that was all  
2           revenue, total state and local. So therefore, I  
3           would -- if I may, suggest that comparison of one  
4           state to itself over time is perhaps a stronger  
5           comparison. And in that, I see that Texas has made  
6           substantial progress towards equity. And I believe  
7           that I mentioned that in the document, in the paper  
8           here. That over time, Texas has increased equity.

9   Q.   On Page 79, I notice that you make a statement at the  
10       bottom, in the last paragraph on that page, and on  
11       the -- going on over to the next page with that  
12       paragraph and the paragraph that follows there on top  
13       of Page 80, about this guaranteed tax base comparison  
14       with the Foundation School Program method for  
15       financing education.

16               Does that reflect -- that paragraph and the  
17       paragraph that follows, reflect the information that  
18       you were relating to us a moment ago about this  
19       difference in emphasis under a guaranteed tax base  
20       system and the Foundation School Program system of  
21       financing public education?

22   A.   Yes. As I said there, the goals of liberty and  
23       equity inherent in the two approaches to financing  
24       public education represent perhaps opposing  
25       principles held in perpetual tension in our society.



1           An expansion of one's fear may likely restrict the  
2           spirit of the other. And I go on to say this is so,  
3           because the guaranteed tax base system represents  
4           equity for taxpayers. The Foundation Program, on the  
5           other hand, maintains a fundamental priority of  
6           equity for children.

7                   MR. TURNER: I'll pass the witness, Your  
8           Honor.

9                   MR. R. LUNA: No questions.

10                  MR. GRAY: May I proceed?

11                  THE COURT: Yes.

12                           CROSS EXAMINATION

13 BY MR. GRAY:

14 Q.    Doctor, my name is Rick Gray. And I'm going to try  
15        as best I can to go through my cross examination of  
16        you in the same order in which Plaintiffs' counsel  
17        chose to examine you. But if I don't keep it exactly  
18        on schedule, I apologize.

19                Now, first, as I understand your testimony, all  
20        the numbers and all of the data that you have  
21        analyzed, you excluded transportation cost, you  
22        excluded building cost, you're excluding cost of  
23        desks and blackboards and the furnishing in the  
24        buildings, and you've excluded any debt service, is  
25        that correct?

1 A. I've included transportation costs, as I've  
2 indicated.

3 Q. Okay. You included transportation?

4 A. Excluded transportation cost.

5 Q. Excluded it, okay.

6 A. As indicated in the measurement of equity in school  
7 finance, that relates very little to programs for  
8 students.

9 Q. Okay. I just want to understand what is in the  
10 numbers and what is not. Transportation is not in  
11 the numbers?

12 A. I believe there's a formula, and maybe if we went to  
13 the formula, too, that would answer most directly  
14 what you're looking for.

15 Q. Maybe so, but I'm really not very good on formulas,  
16 I'm better on words. But if you tell me what page,  
17 I'll try to work it through.

18 A. It's Page 13.

19 Q. The formula that's "LOCREV plus STAID, minus TRAN?

20 A. Yes. So if you look at that, it's local revenue plus  
21 state aid, minus transportation, divided by the raw  
22 PDI.

23 Q. Okay.

24 A. It excludes debt service.

25 Q. Okay. Right above -- I see, now. On Page 13, it

1           talks about that you are excluding buildings,  
2           furnishings and debt service, right?

3   A.    These expenditures are considered as investment  
4           spending, or long-term expenditures, which cannot be  
5           readily attributed to the cost of educating a student  
6           in a particular year.

7   Q.    So my initial question to you, that you -- all your  
8           data does not consider transportation costs, building  
9           cost, cost of buying chalk and blackboards, and  
10          desks, and what have you, and it doesn't even  
11          consider the cost of actually paying the debt on  
12          whatever you incur. That's out of your analysis?

13   A.    I need to get back to you on the chalk and the  
14          blackboards. I don't know if the chalk is treated  
15          the same as a chalkboard, in this case.

16   Q.    Well, how about if we just limit it to desks, then  
17          -- furnishings? I'm using, picking up your term,  
18          "furnishings."

19   A.    I believe so, but I'd like to just check that.

20   Q.    Okay. So you're not exactly sure what's in your  
21          numbers and what's not?

22   A.    I want to be sure to provide the greatest accuracy as  
23          I can.

24   Q.    Okay.

25   A.    And now that you bring up this specific example, I

1 believe that furnishings are included, but I just  
2 want to be sure of that.

3 Q. Okay. So if your report said they were excluded, the  
4 report is wrong?

5 A. Oh, I beg your pardon, excluded.

6 Q. Yes, ma'am.

7 A. Didn't the report refer to chalk and chalkboards?

8 Q. It said furnishings. And I was using my example of a  
9 chalkboard and I then said chalk.

10 A. That's where chalkboard came from, is chalk. I think  
11 chalk, instructional supplies, I considered  
12 differently than something that's part of a building,  
13 like a chalkboard.

14 Q. I won't quibble with chalk, I promise you.

15 A. Okay.

16 Q. Okay. Now, just before lunch, you were asked a  
17 series of questions about your data and then went  
18 into an explanation of what others in the field have  
19 said, that I translated into simple terms as money  
20 does not make a difference in the educational  
21 process. Do you hold the opinion that money does not  
22 make a difference in the educational process?

23 A. I believe that what I said --

24 Q. Let me ask you, my question is, do you have the  
25 opinion that money does not make a difference in the

1 educational process?

2 A. I believe that -- my opinion?

3 Q. Yes, ma'am.

4 A. Now, here -- the educational process, you mean in  
5 teaching?

6 Q. In educating kids.

7 A. In actually educating kids --

8 Q. And preparing kids to meet --

9 A. -- and coming out with equal test scores or whatever?

10 Q. I'm not a big believer in -- necessarily, in  
11 measuring how well a kid is educated by just a raw  
12 test score. But in preparing the children to meet  
13 the needs of the future, to be productive citizens of  
14 this state and of this nation, do you believe that  
15 the amount of financial resources a district has  
16 available to further that process makes any  
17 difference in how successful it is or is not in  
18 preparing the children to meet the future?

19 A. I feel there needs to be a basic level, a basic  
20 program support.

21 Q. For example, if I am a school administrator, Rick  
22 Gray is a school administrator. Will I be able to do  
23 the same job if you give me \$1,500.00 per child to  
24 work with, as opposed to giving me \$3,000.00 per  
25 child to work with?

- 1 A. Well, the actual dollars aside, meaning if I have  
2 twice as much, will I do a better job? This analogy  
3 may be a little strained, but perhaps and perhaps  
4 not, according to the data, according to what we see.  
5 It depends on how you use those resources. For  
6 example, look at some very wealthy parents in raising  
7 their children. Will they do a better job in raising  
8 their children because they're very wealthy?  
9 Sometimes they do, sometimes they don't.
- 10 Q. Well, I understand -- I mean I thought I understood --
- 11 A. On the other hand, a very poor family, in using those  
12 resources well, providing they have a basic level of  
13 resources --
- 14 Q. Can do a better job or --
- 15 A. -- perhaps it might appear that they have done a  
16 better job. See, what you are defining as a better  
17 job is not clear to me.
- 18 Q. Okay. Let me help you.
- 19 A. What is it you mean by that?
- 20 Q. I'm trying to isolate the -- what I call the  
21 management differential. And I have understood you  
22 to say that how an educator manages his or her  
23 resources, how effectively they choose to use them,  
24 makes a difference, correct?
- 25 A. How resources are used, I believe I said, rather than

1 a manager.

2 Q. Okay.

3 A. I don't mean to be too specific here, but I think  
4 that it's important that it's not one person that  
5 stands up and manages the resources. It's a complex  
6 relationship and it involves a lot of different  
7 factors.

8 Q. Well, what I'm trying to do is isolate the --  
9 assuming I'm the same school superintendent, and I  
10 have my strengths and my weaknesses, but they're  
11 going to be the same. And I, Rick Gray, this person,  
12 will I be able to do a better job, as far as  
13 educating kids, if I have greater financial  
14 resources?

15 A. I don't think it's that cut and dry, to be perfectly  
16 frank.

17 Q. Okay. Does money make a difference? And I guess the  
18 reason I'm struggling with you is, I take it, maybe  
19 this is the way to approach it. I take it that if  
20 money does not make a difference in the educational  
21 outcome of a child's future, by wealthy districts not  
22 receiving as much state aid as they currently  
23 receive, that those children would not be hurt, is  
24 that correct?

25 A. I see what you're getting at. You're saying, will it

1           make a difference if we take a wealthy district and  
2           change the amount of revenue available to those  
3           individual children.

4       Q.   Well, what I have been struggling with throughout  
5           this trial is certain districts in the state have  
6           offered witnesses that I've had the chance to depose  
7           some of, and they've offered, and you've been  
8           offered. And part of your testimony has been, as I  
9           characterize it, that money doesn't make a  
10          difference. And if you read into that, the poor  
11          districts don't -- if you give them more money, they  
12          won't do any better on test scores. And I'm  
13          basically putting the other shoe on the foot and  
14          saying if that's true, then likewise, having not as  
15          much money as you now have, also won't hurt test  
16          scores, will it?

17       A.   I see what you are saying, and it is trying to  
18           simplify perhaps a complex relationship. But I don't  
19           think that I'm saying that money doesn't make a  
20           difference. That's a gross overgeneralization. I  
21           said a basic amount was, as I saw it, necessary. In  
22           other words, if you had no money to educate children,  
23           you would indeed have a problem, wouldn't you?

24       Q.   Do you think the -- that there is a difference  
25           between having \$1,900.00 and \$2,900.00?



1 A. In terms of how many children, how many special  
2 education children, what kind of program --

3 Q. Same --

4 A. In the State of Texas, supposedly, everyone receives  
5 the same program. There appears to be no  
6 relationship between experienced or non-experienced  
7 teachers and test scores. There doesn't seem to be a  
8 relationship between wealth and test scores.

9 Q. I'm asking you your personal opinion. And I take it  
10 you're saying that you isolate a district that have  
11 whatever number of special needs children it has,  
12 whatever number of bilingual children and whatever,  
13 that the difference between \$1,900.00 per child in  
14 revenue and \$2,900.00 per child in revenue, does that  
15 make a difference or not?

16 A. It depends on what is that basic level. And if it's  
17 been reached by \$1,900.00, or if it has not, I would  
18 suppose. And so --

19 Q. So the answer is you don't --

20 A. Now, given that that's the basic level, \$1,900.00,  
21 would \$2,900.00 make a difference? The data say that  
22 it's not the difference between \$1,900.00 or  
23 \$2,900.00, but how you use those dollars. So, given  
24 that you, Rick Gray, are superintendent and you have  
25 \$1,900.00 or \$2,900.00, and given further, an

1           assumption that you can control all the variables  
2           that relate, perhaps, to the wise use of this money  
3           and that it isn't a team effort or anything of that  
4           nature, then --

5   Q.    I would be more effective with \$2,900.00 than I would  
6           be with \$1,900.00, wouldn't I?

7   A.    It might depend on personal variables of you, how  
8           smart you are, how much you know about education, how  
9           you can deal with people.

10   Q.   Assume that I'm either the smartest person in the  
11           world or the dumbest person in the world. But if I'm  
12           the same person, I will be able to do a better job if  
13           I have more resources and more tools, do I not? Or  
14           do you say no? That's all I'm trying to ask.

15   A.   Oh, I'm saying, given that there's basic level, that  
16           I don't -- and if you're defining your better job as  
17           test scores, that there isn't support for that.

18   Q.    I'm not defining my job as test scores, I'm defining  
19           my job as preparing the children of this state to  
20           deal with and live in the future.

21   A.    And how will you measure that?

22   Q.    Abilities to stay in school, ability to get a job,  
23           ability to become productive members of society, stay  
24           out of prison, and stay off welfare.

25   A.    I'm not sure if I have an opinion on how money

1 relates to people staying off welfare or getting a  
2 better job, at this point.

3 Q. Do you think that putting aside whatever level you  
4 want to draw the baseline on, in putting aside what  
5 the state's stated goal is, we're going to teach  
6 everybody the alphabet and no physics, or everybody  
7 gets all physics, does the amount of resources that  
8 an educator has available to him or her, does it make  
9 a difference in how much they can teach and educate  
10 their children?

11 A. Well, I can give you a personal example, I can't give  
12 you something that's statistically significant. I've  
13 taught every grade from pre-school through junior  
14 college, and now I teach graduate school. One of the  
15 schools that I had the least resources in was an  
16 extremely nice private school. And I thought I did a  
17 great job. I was really committed. But I did have a  
18 basic level of support. It may put you -- I think  
19 you're getting at the idea that it may put you in the  
20 driver's seat, but it sure isn't going to replace you  
21 as the driver. And I'm questioning whether it puts  
22 you in the driver seat.

23 Q. What you're saying is, you take the basic position  
24 then that money does not make a difference?

25 A. Beyond a certain point. I think you're grossly

1           overgeneralizing with that statement. I made that  
2           point earlier.

3       Q.    Tell me what that point is, then. Maybe that's a  
4           better question.

5       A.    Tell you the point?

6       Q.    Yes, ma'am.

7       A.    I'm not prepared to answer that question. I haven't  
8           looked into that in the State of Texas.

9       Q.    Well, putting aside the State of Texas, the United  
10           States, at what point in time does an extra series of  
11           dollars not make any difference on a child's  
12           education, as far as the quality of education that  
13           that child receives?

14      A.    I do not have an opinion on that.

15      Q.    Now, you made the -- you talked a little bit in your  
16           direct examination about the conflicts in Texas as we  
17           currently see it, the system that's set up between  
18           taxpayer equity and what I call kids' equity or  
19           childrens' equity. And by that, were you saying,  
20           that with the array of districts that we have out  
21           there and the varying property values that you see in  
22           each of those districts, that that leads to the  
23           situation where taxpayers can, in some districts, tax  
24           at low rates, and yet, because they have high tax  
25           bases, generate a lot of revenue, while other tax --

1       if a taxpayer taxes at the same low rate in another  
2       district with a low tax base, it obviously will  
3       generate much less revenue. Is that an example of  
4       this system that does not allow for taxpayer equity  
5       and kids' equity at the same time?

6       A. Taxpayer equity would guarantee a certain amount, as  
7       we've defined it, for each -- I was going to say each  
8       mil rate. In Texas, you use cents per hundred  
9       dollars.

10      Q. Right.

11      A. Okay. For each cent in your M & O tax rate, under a  
12      Foundation Program, the wealthy districts' and the  
13      poor districts' tax rates are essentially the same.  
14      Although the poor district, because it has a low  
15      property base, doesn't get much from that -- from  
16      that tax, does it, as you just suggested? So what  
17      happens is the state pays them the rest, up to this  
18      foundation or floor, the basic amount. So  
19      essentially, the idea is that it generates the same  
20      amount of dollars, but not just off the local part,  
21      you see, there's a state part in there. Now, the  
22      wealthy district might have -- generate more off of  
23      its property tax base and it yields more dollars and  
24      the state makes up the difference then to that basic  
25      foundation or floor --

1 Q. Let me start with one of your statements.

2 A. -- so the state is less.

3 Q. You said that in a Foundation School Program state,  
4 you basically have equal tax rates in all districts,  
5 right?

6 A. No, I didn't, sir.

7 Q. Okay. Well, you know that's not the case in Texas?

8 A. I said the foundation amount is positive on an equal  
9 tax rate.

10 Q. It's whatever happens --

11 A. It's the foundation amount.

12 Q. -- whatever happens to be the foundation amount. And  
13 let me put into perspective for you some of the prior  
14 testimony, so we'll --

15 THE COURT: Let's stop for afternoon break.  
16 You can be writing your example up there. We'll  
17 start again at 4:00.

18 (Afternoon Recess)

19 MR. GRAY: May I proceed, Your Honor?

20 THE COURT: Yes.

21 CROSS EXAMINATION (RESUMED)

22 BY MR. GRAY:

23 Q. Dr. Versteegen, at the break, you were just telling me  
24 about the concept of a Foundation School Program to  
25 basically equalize, up to a point, a level of

1           dollars. Do you remember where we were?

2       A.    I believe so, yes.

3       Q.    Okay. And I had gone to the board and was not going  
4           to do an elaborate example, but there's been a lot of  
5           testimony that came before you about a big box and a  
6           small box. And the small box I've drawn is the  
7           Foundation School Program and the cost associated  
8           with it, do you follow me so far?

9       A.    Yes.

10      Q.    And then there has been testimony about a bigger box  
11           being the actual cost of educating kids in this  
12           state, today, that are not covered by the Foundation  
13           School Program. Do you follow me still?

14      A.    Yes.

15      Q.    And does this kind of situation surprise you, that  
16           the Foundation School Program in Texas does not cover  
17           the real cost of educating kids?

18      A.    I don't have an opinion on the real cost of educating  
19           kids --

20      Q.    Okay.

21      A.    -- as I said.

22      Q.    So, I take it that the fact that this exists in Texas  
23           does not come as a surprise to you. Or does it come  
24           as a surprise?

25      A.    I hadn't really considered it, to be perfectly frank.

1 Q. Okay. Now, as you deal with costs that are incurred  
2 outside of the Foundation School Program, these costs  
3 that are all outside of the small box, the ability of  
4 a district to raise and spend those costs are  
5 directly associated with the tax base of that  
6 district, are they not?

7 A. What are those costs, did you say? What would be an  
8 example or two?

9 Q. Well, I'll tell you, I don't want to go into five  
10 weeks of prior testimony, but the bottom line is that  
11 the dollars covered in the Foundation School Program  
12 are uniformly considered to be real low compared to  
13 what the real cost is out there. Do you follow what  
14 I'm saying?

15 A. What they're paying, or what the cost is?

16 Q. What the cost is.

17 MR. O'HANLON: That I think is -- that's a  
18 subject to debate here.

19 MR. GRAY: I don't mean to get us out on a  
20 long tirade.

21 BY MR. GRAY:

22 Q. Just assume with me, Dr. Verstegen, that there are  
23 costs out there that districts are incurring and  
24 districts are paying today, that deal directly with  
25 educating the children in those districts that are



1 outside the Foundation School Program. And what I'm  
2 asking you is the ability of a district to raise and  
3 spend that money, the money outside the Foundation  
4 School Program cost, is directly related to its tax  
5 base, is it not?

6 A. Well, seems to me there's something called  
7 equalization enrichment. That is, for poorer  
8 districts --

9 Q. We've already given that the benefit, the State has  
10 already taken the position that that is part of the  
11 Foundation School Program. You're talking about the  
12 30 percent enrichment factor, right?

13 A. I beg your pardon, I wasn't speaking for the state, I  
14 was simply speaking --

15 Q. Okay.

16 A. -- for myself.

17 Q. Assuming my example that all of that is already in  
18 the Foundation Program, okay. Assume that  
19 equalization enrichment, the whole nine yards, is in  
20 the small box. And we still have this bigger box to  
21 pay for. And my question to you is, under the  
22 current system in Texas, the ability of a local  
23 district to raise and pay for that additional money  
24 is directly related to its tax base, correct?

25 MR. O'HANLON: That's actually not true on

1           the evidence, either, Your Honor. Some of that  
2           includes federal funds, some of that includes  
3           cafeteria revenues and co-curricular and  
4           extracurricular activities, things of that nature. I  
5           mean, it's not all. And I think he's misleading the  
6           witness to the extent that he's --

7 BY MR. GRAY:

8 Q.    You used the big box without federal funds.

9 A.    So without those people contain federal aid --

10 Q.   Now --

11 A.    -- local revenue, be outside of the tax base and  
12       state revenue, including add-ons like equalization  
13       enrichment for the poorer districts?

14 Q.   Let me start over. I assume you profess to have a  
15       detailed knowledge about how the Texas school finance  
16       system works, right or wrong?

17 A.    I have a working knowledge of the system, yes.

18 Q.    Okay. And I assume that you know that capital  
19       expenses, buildings, debt service, are outside the  
20       Foundation School Program cost?

21 A.    Oh, that's what you're referring to.

22 Q.    No, I'm referring to substantially more than that,  
23       but I'm limiting it, so we won't have any quibbling  
24       on words.

25 A.    That helps, because I'm really trying to understand

1           what you're saying, is what I'm trying to do, so I  
2           can answer properly.

3       Q.    You understand that those costs are clearly outside  
4           of the Foundation School Program?

5       A.    Yes.

6       Q.    Assume with me that other witnesses have testified  
7           that there are other costs besides buildings and debt  
8           service that districts have to incur and are  
9           incurring, if they want to provide quality education  
10          for their kids, that are outside the Foundation  
11          School Program. And those, plus buildings, are what  
12          I have drawn as this bigger box. Now are we  
13          communicating?

14      A.    I have problems with the way you're presenting that,  
15           in that it distorts what you're actually trying to  
16           get at, I think. But I see what you're saying. And  
17           if you make a number of assumptions, even if you  
18           don't believe that, or if you don't have evidence to  
19           support it, I'll try to follow along.

20      Q.    Okay.

21      A.    So you're saying, let's assume, in a hypothetical  
22           state, that there's a Foundation Program. And let's  
23           say, in this hypothetical state, there are additional  
24           costs outside the program.

25      Q.    Right. And let's name that hypothetical state Texas,

1           okay?

2       A.    As a hypothetical.

3       Q.    And those costs outside the Foundation Program, the  
4           ability of a district to raise and spend those costs  
5           are directly tied to its tax base, correct?

6       A.    Under a Foundation School Program, I believe -- if  
7           we're including federal funds and other locally  
8           raised revenue, and all other such dollars as state  
9           dollars, except tax base dollars, then by definition,  
10          you've excluded everything but tax base dollars. So  
11          that's the base upon which you would raise additional  
12          revenues outside the small box, whatever you call  
13          that small box.

14      Q.    Okay. And the bigger one's tax base, if you want to  
15           -- if you're trying to raise, for example, \$5,000.00,  
16           the bigger your tax base, the lower the tax rate that  
17           will be necessary to raise that \$5,000.00?

18      A.    Yes.

19      Q.    And assume that this hypothetical state has 1,063  
20           districts.

21      A.    Okay.

22      Q.    And assume that they have property values that range  
23           from \$21,000.00, approximately per student, to over  
24           \$14 million per student, okay?

25      A.    Okay.

1 Q. Are you with me so far?

2 A. Yes.

3 Q. You would assume, would you not, or that kind of  
4 disparity means that the tax rate necessary to raise  
5 whatever sum of money is outside the small box,  
6 you're going to have huge disparities in tax rates as  
7 well, correct?

8 A. I'm not sure. If you say there's a fixed dollar  
9 amount, and will the districts with a big property  
10 tax base versus a small or a smaller property tax  
11 base, be able to raise those revenues at a different  
12 rate, yes, they would.

13 Q. And it's going to be an immense difference when you  
14 look at \$21,000.00 at one hand, and \$14 million plus  
15 on the other hand, correct?

16 A. The difference in raising those additional revenues?

17 Q. Right, will be immense?

18 A. Depending on the variation --

19 Q. Okay.

20 A. -- in the property tax base.

21 Q. Now, let me show you some --

22 A. Now, what is the area of that larger square? Is it  
23 equal to or smaller than the little square? You make  
24 it look like it's, you know, it's just the margin,  
25 isn't it, that they're funding? How much area is in

1           that margin?

2   Q.    I don't even have a ruler.

3   A.    The --

4   Q.    It's extra dollars.

5   A.    The margin?

6   Q.    Yes, it's all these extra dollars.

7   A.    It's not a bigger square up against a smaller square,  
8           but it's the margin. Yes, okay.

9   Q.    Yes. I'm drawing this big box to be the real cost of  
10           education. Okay? And I'm saying that the Foundation  
11           School Program covers just part of the cost. If you  
12           were to shove this box up in the corner up here and  
13           leave all of this other uncovered, it's the same  
14           effect.

15   A.    I see. I see what you're saying.

16   Q.    Okay.

17   A.    In actuality, that could be bigger. The small box  
18           could be much bigger or much smaller. It's not  
19           proportionate, but it's just an example you've chosen  
20           and such a margin --

21   Q.    I'm just --

22   A.    Yes.

23   Q.    I'm just drawing -- I'm trying to give you a concept --

24   A.    Yes.

25   Q.    -- that we've had five weeks of testimony on. And I

1           just want to make sure you have the same  
2           understanding as everybody else.

3       A.    The size of that margin would be interesting, but --

4       Q.    Okay. I'm sorry, I can't help you with that right  
5           now.

6                   In this hypothetical state we're talking about,  
7           let me show you a map of Dawson County, Texas, that  
8           is, by the way -- and this is not hypothetical  
9           because this is coming out of evidence that has  
10          already been introduced. Okay?

11       A.    Okay.

12       Q.    And let me show you that Dawson has four districts,  
13           Sands Independent School District that has a 258 ADA,  
14           that has right at \$472,000.00 per student. Lamesa  
15           Independent School District, with 2,883 ADA, that has  
16           a \$125,000.00 per student. These two --

17       A.    Lamesa --

18       Q.    -- these districts are side by side.

19       A.    Okay.

20       Q.    Adjacent to both of them is Klondike ISD, with 287  
21           students and \$1,155,000.00 per student.

22       A.    Uh-huh.

23       Q.    And right adjacent to them again is Dawson ISD with  
24           185 students and \$1,778,730.00 per ADA, all within  
25           the same county of this state.

1 A. (Witness nodded head to the affirmative.)

2 Q. These kind of disparities within the same county,  
3 side by side, would lead you to the conclusion, would  
4 it not, that the taxpayers in Klondike and in Dawson  
5 can raise the revenue to fund their schools at a  
6 whole lot less taxes than Lamesa and Sands, their  
7 neighbors?

8 A. Well, this does provide an example of what I just  
9 said. Yes, that a higher tax base will raise more  
10 money with the same tax rate.

11 Q. Can you think of a rational reason why, within the  
12 same county, side by side, you would have a district  
13 that where all of the kids in the district, all but  
14 maybe 600, had \$125,000.00 per ADA, and yet there's  
15 districts over there with well over \$1 million per  
16 ADA with 185 students and 287 students. What does  
17 that tell you as -- what would be your assumption as  
18 to why those districts exist?

19 MR. O'HANLON: Does that assume that those  
20 districts were just created, or there's some  
21 historical antecedent to this creation of those  
22 districts? And what was the population of those  
23 districts relative to each other at the time that  
24 they were created?

25 A. I'm thinking of Texas and Oklahoma, and I'm not sure



1           why those borders are there either, and the  
2           difference in wealth between those two states. But I  
3           don't know. Why are they?

4       Q.    Okay.

5       A.    What would you assume?

6       Q.    I don't know. And I don't want to belabor the point,  
7           but would it -- this is the second round of these  
8           kinds of maps that we've been able to put together,  
9           just very briefly, out of evidence that's in  
10          existence. You've got Jasper County, the identical  
11          situation exists. You've got Buna ISD, with 1,000 --

12      A.    Where is this in the state?

13      Q.    Jasper?

14      A.    Is there a picture of the state somewhere to show  
15          where they are?

16      Q.    East Texas.

17      A.    In East Texas?

18      Q.    Uh-huh. Outside of Beaumont.

19      A.    Uh-huh.

20      Q.    You've got Buna ISD that has \$96,800.00 per ADA that  
21          has 1,524 kids. Immediately next door, you've got  
22          Evadale ISD with 394 kids, at \$762,000.00 per ADA.  
23          And if you go through it, example after example, find  
24          it in Limestone County --

25      A.    Might even find it within the district, such a

1           disparity.

2       Q.    In Coleman County, you find it in Knox County, Titus  
3           County, Chambers County, Refugio County, Hutchinson  
4           County --

5       A.    Excuse me, can I take off my coat? Is that okay?

6       Q.    Sure.

7                   And there's one that I've been particularly  
8           curious to ask you about, is Val Verde County, which  
9           is way down south.

10      A.    That's green land, isn't it?

11      Q.    And you've got Juno School District that has nine  
12           students and has \$2,939,726.00 per student.

13      A.    What is the area of that?

14      Q.    Right next door to -- I can't --

15      A.    CISD, it's not an ISD. Is that one of your 1,068 --  
16           no, that's a different type of district, isn't it?

17      Q.    No, it's one out of 1,063 districts.

18      A.    The CISD is?

19      Q.    Uh-huh. And you have San Felipe-Del Rio right next  
20           door, that's got \$8,669.00 ADA, with \$69,412.00.

21      A.    What is the area of these districts?

22      Q.    Here is the scale right there. They're all within  
23           the same county, I'll tell you that.

24      A.    But the counties in Texas are the largest and the  
25           smallest in the United States.

1 Q. Let me just ask you this. I take it by your -- the  
2 questions you've posed to me, that you don't find  
3 anything of the least bit troublesome about those  
4 kinds of examples sitting side by side in the same  
5 county, is that true?

6 A. You mean troublesome? What do you mean troublesome?

7 Q. As an educator who is concerned about seeing that the  
8 best for children in this state, that they have all  
9 of the resources fairly distributed to educate them.  
10 Is that alarming or not to you?

11 A. But these resources feed into a larger system. And  
12 that system is what I looked at, the fairness of that  
13 distribution for each one of those children. Not  
14 just one or two counties next to each other, but  
15 every single child in the State of Texas, lest we  
16 forget one or two. And looked at a number of  
17 measures of how that actually inputs into the system.

18 Q. I don't mean to be --

19 A. And what does that mean in terms of dollars that they  
20 actually have to spend and outcomes.

21 Q. I don't mean to be argumentative with you, but what,  
22 the 8,669 children that are going to San Felipe-Del  
23 Rio need to be considered in the count, do they not?

24 A. And they were.

25 Q. Okay.

1 A. They sure were.

2 Q. Now, if these wealthy districts in the state -- and  
3 assume with me that there are many wealthy districts  
4 that have \$1 million or more per ADA, property value.

5 A. What percent did you say?

6 Q. I don't have it offhand, but assume with me there's  
7 many. If they were to raise taxes, for example, if  
8 the district -- let me go to the wealthiest district  
9 in the state. And this is also in evidence, that has  
10 \$14 million plus dollars per ADA and they're taxing  
11 at eight cents. If that tax rate -- if that wealthy  
12 district was to raise its tax rate to 60 cents, that  
13 would throw off a lot more money into all of the  
14 numbers you've analyzed, correct?

15 A. That district was included in this analysis. No one  
16 was excluded, whereas you are pulling one district  
17 out.

18 Q. No.

19 A. And I don't know how it relates to all of Texas, or  
20 even to Texas children.

21 Q. You didn't hear my question.

22 A. So some districts can be very small, but they have  
23 very small proportions of children.

24 Q. You didn't hear my question. Let me repeat it.

25 A. I beg your pardon.

1 Q. What I am attempting to make sure I understood, the  
2 data that you analyzed was based on existing tax  
3 rates, right?

4 A. Yes, it was.

5 Q. And you've come to the conclusion that the -- from a  
6 kid's point of view, you say the system is basically  
7 equitable, that's the sum and substance of your  
8 conclusion, right?

9 A. Yes.

10 Q. And what I'm asking you is, if the wealthy districts  
11 out there, if they weren't taxing at eight cents and  
12 ten cents and 30 cents, but were taxing at 70 cents,  
13 80 cents, 90 cents, those wealthy districts would  
14 have a whole lot more money being spent in those  
15 counties on those kids than your numbers would show  
16 up, right?

17 A. Yes, if they were taxing higher, any district would  
18 have larger revenues, including the poor districts.

19 Q. And if the wealthy districts were taxing at or above  
20 the state average, all of your analysis, whether you  
21 look at the Gini Coefficient or the Federal Range  
22 Ratio, or all of that, they literally would go off  
23 the page, right?

24 A. I beg your pardon.

25 Q. If the wealthy districts were taxing at high rates,

1           all the revenue coming in, that you then analyzed,  
2           would show you huge disparities?

3       A.    You could, I suppose, simulate a situation which  
4           showed huge disparities, but I believe the concern is  
5           what actually exists and what has existed.

6       Q.    Okay.

7       A.    Actual practice, not can you make it look one way or  
8           another. In the same sense, there may be exactly the  
9           same revenue if those poorer districts were taxing a  
10          little bit higher, as well. And there are isolated  
11          examples of poor districts with a very low effort, as  
12          you know.

13      Q.    Oh, we've heard a lot of testimony about varying tax  
14           efforts in varying kinds of wealthy or poor  
15           districts.

16      A.    Exactly my point, that an isolated example isn't  
17           really representative. And that's what I was trying  
18           to get away from in this analysis, is get at  
19           something that would present the whole picture and  
20           not one isolated example or another.

21      Q.    Now, you came to the conclusion, as I understand your  
22           report, that under this current system in Texas, your  
23           wealthy districts tend to have more money to spend on  
24           their kids than your poor districts, is that right?

25      A.    That the districts in the top five percent, from the

1           95th to the 100th, and then if you break that down,  
2           there might be some, I'm just being conservative,  
3           perhaps. It's one-half of one percent, where there's  
4           quite a bit of difference in spending power.

5       Q.   Well, I'm talking about in general. Don't we see  
6           across the board that the wealthier you are, the more  
7           money you tend to have?

8       A.   I'm not sure where you are referring to that, because  
9           the correlations -- or the equity measures, that's  
10          what they measure. So, the magnitude of the  
11          relationship was very, very small?

12      Q.   No, I'm just talking about in raw dollars.

13      A.   In raw dollars? You mean -- what exactly do you  
14          mean? That's what those measures measure.

15      Q.   Well, let me put it this way. You made the statement  
16          on Page 30, "In sum, wealthy districts tend to have  
17          more revenue."

18      A.   On Page 30, in the first paragraph, the statement  
19          reads, "In sum, wealthy districts tended to have more  
20          revenue (inputs) but were unable to realize an  
21          experienced teaching force or higher test scores  
22          (outputs) as a result of this perceived revenue  
23          advantage."

24                   And I believe that the correlation between  
25          operating revenue and wealth, we discussed prior to

1           this. And then we looked at wealth and test scores.

2   Q.   All right. And I believe that you had said, and my  
3       note is somewhat unclear on this, but wealth resulted  
4       in approximately, what -- 40 percent of the  
5       expenditures, am I right on that?

6   A.   Well, let me check it here to be sure. On Page 27, I  
7       stated "Wealthy districts receive proportionately  
8       less state aid per pupil, less or no equalization  
9       enrichment, and it had higher local fund assignments.  
10      A moderate relation was found between wealth and  
11      operating cost and wealth and total revenue.  
12      However, the amount of variation explained for wealth  
13      and operating cost was low," the r squared equaled  
14      .354, or about 35 percent of the variation in revenue  
15      in Texas, including those districts that you pointed  
16      out, as well as all of the others.

17   Q.   Well, my question to you was about the 40 percent.

18   A.   That was 35 percent. And then I was just getting to  
19       that. And then, "the variation explained by wealth  
20       and total revenue." And I included in there, the  
21       state aid and the local aid. Total state and local  
22       revenue was -- the r squared was .419. Or that  
23       wealth explained about 40 percent of the difference  
24       in the revenues, so, four out of every ten, perhaps.

25   Q.   Okay. So if you were to score it, the Texas system



1           on a wealth neutral, it would be 60 percent wealth  
2           neutral and 40 percent wealth driven?

3       A.   Well, believe me, I would like to be able to say yes  
4           or no, but the question can't be answered yes or no,  
5           that all of these measures I looked at are wealth  
6           neutral measures. They measure the neutrality of the  
7           wealth, or the relation -- whenever you measure  
8           revenue and wealth --

9       Q.   Without getting into a long -- a long discussion --

10      A.   So all of those are --

11                   MR. O'HANLON: She gets to answer the  
12           question.

13                   THE COURT: Okay.

14                   MR. GRAY: I don't mind her -- I just don't  
15           understand a lot of the stuff.

16      Q.   But feel free to give me some more numbers if you  
17           want to. I didn't mean to cut you off, that's what  
18           I'm saying.

19      A.   Well, so overall, what I said in the statement you  
20           quoted me as saying, that in general, the system is  
21           equitable, is based on data that represents every  
22           child in the state, as I presented to you in many  
23           measures.

24      Q.   And do you restate or retract your statement, that on  
25           four out of ten expenditures are because of wealth or

1           wealth related? Isn't that what you had just said  
2           when I went into the 40 percent and the 60 percent?

3   A.    I guess you would say, if you're trying to predict  
4           it, that 40 percent of the variation could be  
5           predicted. So you would do better by flipping a coin  
6           than using wealth as a predictor of what makes a  
7           difference in revenue, because you would at least get  
8           a .5 then.

9   Q.    So, am I correct or not in saying that four out of  
10          ten expenditures, or your data would show, are wealth  
11          related?

12   A.    Well, 40 percent, which is basically about four out  
13          of ten.

14   Q.    Okay.

15   A.    I think that would be a fairly basic -- I think you  
16          could use that explanation, yes.

17   Q.    Okay. And that means that --

18   A.    You could say that it's predicted on that, not  
19          necessarily that it's wealth related.

20   Q.    Okay. And by wealth related, you're talking about  
21          the property wealth of a given district?

22   A.    Well see, I don't think you can really -- let me try  
23          to explain this a little differently, may I?

24   Q.    Sure.

25   A.    That when you're trying to predict the difference in

1 something, a prediction is for overall, rather than --  
2 my example of four districts out of ten isn't really  
3 right, because we're talking about kids and we're not  
4 talking about discreet examples. We're talking about  
5 40 percent of the variation can be explained by that,  
6 according to these data, and 60 percent cannot be  
7 explained by that. So you can say, is it a good  
8 predictor? And you would conclude, or perhaps you  
9 wouldn't, but I would conclude that it's not a very  
10 good predictor of what makes a difference in dollars  
11 per student in Texas.

12 Q. Okay. Now, you looked at, did you not, and I'm  
13 focusing you on Page 48, using your numbers. You  
14 found that the range of revenue available to be spent  
15 on children in this state ranged from a low of \$1,694  
16 up to a high of \$11,475.00, correct?

17 A. Yes.

18 Q. And if you then said, "Okay. Let's forget about the  
19 five percent poorest kids, or the kids with the  
20 lowest expenditures, and let's forget about the five  
21 percent with the highest expenditures," you then came  
22 to the Restricted Range Ratio, right?

23 A. The restricted range looks at the 5th to the 95th,  
24 yes, indeed.

25 Q. Okay. Do you know how many kids are in the bottom

1 five percent in Texas?

2 A. Five percent of the total student population, the  
3 last time I saw it was 2.919 million.

4 Q. So we're talking about 150,000 kids per five percent?

5 A. In general, I think, yeah. I didn't -- I don't have  
6 a calculator.

7 Q. And when you looked at the restricted range, you --  
8 by doing that, you cut out of your view about 300,000  
9 school-age children, correct?

10 A. This is a typical measure in education finance. As I  
11 said --

12 Q. I'm merely asking you --

13 A. -- some go 20/80. And that does exclude that top  
14 five percent and bottom five percent of students,  
15 that's right. You're absolutely right.

16 MR. GRAY: Your Honor, I'm merely asking  
17 that the witness be responsive to my questions. She  
18 doesn't have to go in and give a long defensive  
19 narrative. I asked a very simple question that could  
20 be yes or no, and she has yet to answer it.

21 MR. O'HANLON: I think she did answer it,  
22 Your Honor. I think she gave a response to that.

23 THE COURT: I'm not sure she answered it.  
24 Ask it again. The witness does need to listen to the  
25 questions and answer only what is asked, please.

1 THE WITNESS: Does it have to be a yes or  
2 no answer, Your Honor?

3 THE COURT: Well, not necessarily, but it  
4 needs to be responsive to the question.

5 THE WITNESS: Well, I certainly do  
6 apologize, I --

7 THE COURT: I'm not fussing at you.

8 THE WITNESS: Okay.

9 THE COURT: Go ahead and ask your question.

10 BY MR. GRAY:

11 Q. Doctor, what I was saying and asking you to agree or  
12 disagree with me, that when you look at the 95th to  
13 the 5th, that range, what you omit from view by doing  
14 that is approximately 300,000 children?

15 A. Going along with the numbers, that would be right.

16 Q. Okay.

17 A. It's what I, in my response, I was saying it's ten  
18 percent of the kids, five percent on either extreme.

19 Q. Now, you found, when you --

20 A. That's 290,000.

21 Q. -- using your numbers, a disparity in revenue, after  
22 you forget about the 300,000 kids and you're just  
23 looking at the remainder, that there is a \$965.00  
24 difference, or disparity in revenues, using your  
25 numbers, correct?

1 A. Yes.

2 Q. Now, you had available to you, did you not, that same  
3 comparison for 1976?

4 A. Yes.

5 Q. And if you were to turn to Page 51 on your report,  
6 you find that the disparity, as far as dollars  
7 available to be spent on kids from the 5th and the  
8 95th percentile in 1976, was \$776.00, right?

9 A. In 1976 dollars, yes.

10 Q. And in 1976, that's what they spent, 1976 dollars,  
11 right?

12 A. Yes.

13 Q. And in 1986, that range has changed from \$776.00 to  
14 \$965.00, correct?

15 A. Without adjusting for inflation, to make those real  
16 dollars that you're -- that you're comparing, that's  
17 correct. They are compared on Page 54 in terms of  
18 real dollars. There, in 1976, \$462.73 was spent  
19 between the 95th and 5th -- excuse me, was the  
20 result --

21 Q. Okay. I'll get --

22 A. -- of the restricted range, and \$272.00 was the  
23 result in 1986.

24 Q. Now, let me ask you this. In 1986, today, we're  
25 spending today's dollars, correct?

- 1 A. Today, we're spending today's dollars, indeed.
- 2 Q. That's right. We're spending 1986 dollars today --
- 3 or actually 1987 dollars today, correct?
- 4 A. Yes.
- 5 Q. Okay. Now, when you ran your range and came up with
- 6 the numbers \$965.00 for today as the disparity, and
- 7 \$776.00 for ten years ago as the disparity, you then
- 8 went and said, "What will these dollars look like if
- 9 they were spent back in 1967," is that correct?
- 10 A. Yes.
- 11 Q. Of course, the 1976 dollars were not spent in '67,
- 12 were they?
- 13 A. Naturally, they weren't.
- 14 Q. And obviously, the 1986 dollars were also not spent
- 15 in 1967, correct?
- 16 A. Correct.
- 17 Q. Okay. Now, also, the relationship with the
- 18 correlation between wealth and revenue, which we've
- 19 already also talked about, you found to be .60,
- 20 correct?
- 21 A. The correlation, using 1986 LFA values, was .60.
- 22 Q. And that same correlation, ten years ago, was .62,
- 23 correct?
- 24 A. Correct.
- 25 Q. Basically the same?

1 A. Yes.

2 Q. Okay. Now, I have --

3 A. Not exactly basically the same, there was some  
4 decrease.

5 Q. I have put up on the board a chart. And I want to  
6 hand you a copy of what the state has introduced as  
7 Defendants' Exhibit 47, so you will understand what  
8 I'm referring to. It's their exhibit that breaks  
9 down revenue and expenditures by refined ADA. And  
10 I'm focusing you on the wealth category where they  
11 have it broken down, do you follow me?

12 A. Yes.

13 Q. And let me help you, so that we will be comparing  
14 apples to apples.

15 A. Are these the same?

16 Q. Yes, they're identical copies. I have extra notes on  
17 this one that you might want to look at.

18 A. Okay.

19 Q. Within the numbers, I have tried to come up with what  
20 is the current expenditures. If you'll look at this  
21 column over here, total expenditures, you see my  
22 column there?

23 A. Yes.

24 Q. And subtract from that federal revenue, because --

25 A. Okay.



1 Q. Because we -- and the state has included federal  
2 revenue, but if we subtract it out, do you see what  
3 I'm doing?

4 A. Yes. Does that include anything else that you've  
5 subtracted out?

6 Q. It includes all of the federal revenue the state puts  
7 on here.

8 A. In lieu of property taxes, there are some districts  
9 that have federal military installations.

10 Q. Don't ask me anything, I'm just using the state's own  
11 numbers.

12 A. Okay. You subtracted out federal revenue.

13 Q. If you take the first column for districts under  
14 87,000, you see they're expending \$3,673.00, but that  
15 part of that is federal revenue. You see over here?

16 A. Oh, I see what you're saying. Yes, uh-huh.

17 Q. If I subtract the \$455.00 federal revenue, I get that  
18 they're spending \$3,152.00, correct? Here is the  
19 expenditure, minus that.

20 A. Uh-huh, okay.

21 Q. Do you follow me?

22 A. Yes.

23 Q. And the next category down, for districts that are  
24 above 87,000 but are below 105,000, they're spending  
25 \$3,480.00 per student in total revenue, but \$281.00

1 of that is federal revenue, so that gets them to  
2 \$3,199.00. Do you see where I am?

3 A. Uh-huh.

4 Q. Okay. Now, to give the -- those two groups that I  
5 read off to you, one has 346,944 children in it,  
6 correct? The poorest group?

7 A. Is that the dollars or the children?

8 Q. That's the children. 1986 refined ADA.

9 A. Okay.

10 Q. You see it?

11 A. Uh-huh.

12 Q. And the second group that I read off to you has a  
13 139,544 children, correct?

14 A. Yes.

15 Q. For a total, in those two groups, of 486,488  
16 children. Do you follow me so far?

17 A. Yes, exactly.

18 Q. Now, I have put beside here the higher of the two  
19 expenditures, have I not? The \$3,199.00, which  
20 actually is slightly higher than what is being spent  
21 on these kids. I'm giving the benefit of the doubt.

22 A. It's about \$30.00 more.

23 Q. Right. So I'm showing a slightly higher expenditure  
24 than really is getting spent on these kids, right?

25 A. Yes.

1 Q. Okay. Now, follow with me the exact same comparison  
2 for the two wealthiest groups. And to facilitate  
3 matters, I've got my copy and I'll walk you through  
4 it. The second level below the top, which is  
5 property value of \$369,000 plus, up as high as  
6 \$630,000 plus, you see where I am on the state's  
7 exhibit?

8 A. Yes.

9 Q. That group has 364,846 children in it, correct?

10 A. Yes.

11 Q. And if you go through the exact same analysis that we  
12 did before on what's getting -- the revenue that's  
13 being spent on those children, you would take the  
14 total expenditure of \$4,919.00, subtract the federal  
15 aid, and you get an expenditure of \$4,736.00. Do you  
16 follow me?

17 A. For both of them?

18 Q. No, I'm just doing --

19 A. The first one?

20 Q. The first one, first.

21 A. Okay. Uh-huh.

22 Q. Are you with me?

23 A. Yes.

24 Q. And if I did the -- now going to the wealthiest  
25 group, you find an additional 56,214 students, right?

1 A. Yes.

2 Q. And if you do the same calculations on expenditures,  
3 minus federal revenue for them, you come up with  
4 \$6,253.00 being spent on them, according to the  
5 state's own document, correct?

6 A. Yes.

7 Q. And again, giving the benefit to the state, now using  
8 the lowest number that's being spent, as opposed to  
9 before where I used the highest, I'm trying to make  
10 the range as small as I can. Do you see what I'm  
11 doing?

12 A. Uh-huh.

13 Q. These children, which are now 421,060 children in the  
14 two wealthiest categories in the state, giving the  
15 benefit of the state, they have spent on them  
16 \$4,736.00, according to the state's own exhibit. You  
17 follow me?

18 A. Yes.

19 Q. So if you look at now, this picture, you see that  
20 we've got on the board right at 900,000 children,  
21 correct?

22 A. Yes.

23 Q. Right at a third of all of the children that are in  
24 the school systems in Texas? In fact, a little more  
25 than a third, I guess, correct?

1 A. 900,000? A little bit less, maybe.

2 Q. A little less than a third. See, I'm not really good  
3 on math. Anyway, it's a lot of kids, right?

4 A. (Witness nodded head to the affirmative.)

5 Q. And you see that the 486,000 plus, who happen to be  
6 unlucky enough to live in the poor areas, are having  
7 on average, \$1,500.00 less spent on them than the  
8 421,000 plus kids, who were lucky enough to live in  
9 the wealthy areas, correct?

10 A. How much -- I beg your pardon, I didn't hear your  
11 last point.

12 Q. My point is that the -- right at 500,000 kids who  
13 live in the two poorest property regions in the  
14 state, according to the state's exhibit, have about  
15 \$1,500.00 less per child spent on them than the  
16 421,000 plus students who are lucky enough to live in  
17 the two wealthiest property areas in the state.

18 A. Did you -- yes, I see what you did there. And those  
19 numbers -- I do follow your numbers. It looks like  
20 you included debt service and capital outlay, and  
21 that those are quite high in some of these wealthy  
22 districts.

23 Q. I'm pulling this right off the state's own exhibit.

24 A. Yes, I know.

25 Q. And what I'm asking you -- I mean, I'm taking you

1 through the state's exhibit --

2 A. Using those numbers. I was just --

3 Q. -- using those numbers.

4 A. I was just wanting to understand what went into them.  
5 And it appears to include debt service and capital  
6 outlay as well and --

7 Q. And if you now look at these, you see what --  
8 \$1,500.00 difference in what's getting spent. And is  
9 that equitable, in your opinion? Is this fair for  
10 kids?

11 A. I don't know if this is an equity analysis here, the  
12 way you've done this. I stand on what I've said this  
13 morning.

14 Q. Does that, what I've shown you, look -- putting  
15 aside, forgetting about taxpayers, forgetting about  
16 legislators, talking only about kids, is that fair to  
17 kids?

18 A. Well, let me ask you something in return, to -- in  
19 answering your question, because I can't give you a  
20 yes or no answer.

21 What I'm -- I guess my answer would be, to be  
22 as straightforward and direct as I can, would be that  
23 what you've done here is not really an equity  
24 analysis. You've included some things that aren't  
25 included, in looking at equity. And you've come up

1 with, perhaps, a different range between two groups  
2 of students. You may have taken -- so, I guess you  
3 could rephrase your question and say, if that was  
4 \$8,000.00 and \$9,500.00, is that fair to students?

5 Q. No, ma'am. I'm going to ask it at \$3,199.00 and  
6 \$4,736.00, is that fair to students, because those  
7 are the real numbers.

8 A. Well, sir, the numbers, as I see it, are a process of  
9 how you get to those numbers. And using any process,  
10 you might arrive at a variety of numbers. That's why  
11 there's a specific methodology, so that anyone can  
12 look at numbers in any state and would come up with  
13 the same answers. This kind of methodology is not  
14 that methodology. Therefore, the disparity you're  
15 showing, I -- I don't have much faith in. And that's  
16 why I have a difficult time answering that question.

17 Q. And why do you not have faith in my \$1,500.00 plus  
18 disparity? Because of the debt service being  
19 included in there?

20 A. It includes the debt service, yes, it does. And --

21 Q. Is that why you think it's a problem with these  
22 numbers?

23 A. Should we exclude the debt service and see what you  
24 come up with?

25 Q. I'm asking you, do you have a problem with these

1           because of debt service?

2       A.    That's one of the problems, yes.

3       Q.    What other problems, if any, do you have?

4       A.    I would like to know what percentiles you've got  
5           there.

6       Q.    Percentiles of what? I've got --

7       A.    And then finally, it's one measure and I would like  
8           to look at many measures. I'm leary of making such  
9           an important answer, making such an important answer  
10          to that question, based on this one analysis.

11      Q.    Would it surprise you that when you eliminate the  
12          debt service, that you find this magnitude still at  
13          \$1,000.00, give or take?

14      A.    Well, then I would want to know if you've got  
15          vertical numbers in there. Extra dollars for the  
16          same needs, like the PDI and special students.  
17          Because looking at an adequacy question, I think, is  
18          different than looking at an equity question, and  
19          you're asking an equity question. But I don't know  
20          if you've excluded the vertical adjustments, which  
21          provide -- which buy the very same thing, but they  
22          cost more, perhaps, in different parts of the state.

23      Q.    Ma'am, these numbers -- well, I'm not going to get  
24          into it. Let me do it this way. And if you can't  
25          give me an answer, if you don't have an opinion,



1           that's fine.

2           These numbers came off the state's own exhibit  
3           that was introduced into evidence. And you've got  
4           right at 500,000 children on the one end of the  
5           spectrum, 420,000 children on the other end of the  
6           spectrum, that have these kinds of disparities. And  
7           all I'm asking you is, that \$1,500.00 difference,  
8           that the 400,000 plus who were lucky enough to live  
9           in the property rich areas gets spent on them, that  
10          does not get spent on the right at 500,000 who were  
11          unlucky enough to live in the poor areas, does that  
12          present a problem to you?

13       A.    Sir, you're asking me to answer -- I don't have much  
14           faith in your measurement here. I don't think that  
15           what you've done can result in really a true overall  
16           assessment of the equity of the system. No. 1, it  
17           includes capital outlay and debt service. No. 2,  
18           apparently allowable adjustments haven't been made  
19           for the PDI, the special cost differentials, small  
20           and sparse district, and so forth. And finally, it's  
21           one -- it's a one look at a very complex question.  
22           And I would be very reluctant to make any kind of  
23           snap judgment, based on this analysis.

24       Q.    So I take it you don't have an opinion. Or if you  
25           have an opinion, it is that this kind of analysis

1           that I've done, based on the state's own exhibit,  
2           does not bother you from an equity point of view?

3   A.   My -- yes, I don't have an opinion on your question,  
4           because I don't think your methodology is very  
5           rigorous.

6   Q.   Now, the differences that you see in expenditure,  
7           going back to my small box and big box, going back to  
8           the various maps that we showed, you know, we talked  
9           about earlier. I take it that if you had districts  
10          that had approximately the same value of property --  
11          taxable property, that for a 53 cent tax rate in  
12          District A, it would raise approximately the same  
13          amount of money as a 53 cent tax rate in District B,  
14          assuming District A and B have approximately equal  
15          tax bases, correct?

16   A.   Yes.

17   Q.   And obviously, if you've had districts that were --  
18          had equal tax bases, the only variance, as far as  
19          equity for kids, would be if District A happened to  
20          choose to tax itself higher than District B?

21   A.   Yes.

22   Q.   And --

23   A.   If the whole state system was only based on the tax  
24          rate -- Is that what you're envisioning --

25   Q.   No.

1 A. -- how do you envision the system as working? The  
2 only variance, you're saying.

3 Q. Well, I'll get there with you. But if all you have,  
4 if all you have is equal districts, you don't have  
5 any state money going in, you don't have anything  
6 other than equal districts --

7 A. Equal tax bases.

8 Q. Equal tax bases, the -- if a district taxes at 53  
9 cents and one taxes at 63 cents, there will be more  
10 money raised in the 63 cent district?

11 A. Yes.

12 Q. While, if you have vast disparities in districts out  
13 there, it may well be that the district that taxes at  
14 63 cents actually raises less money than the district  
15 that taxes at 53 cents, if the 53 cent district has a  
16 lot more tax base?

17 A. Yes.

18 Q. Now, from a taxpayers' equity point of view, getting  
19 -- paying the same thing for the same service, okay?  
20 If you have equal tax bases, you will have taxpayer  
21 equity, correct?

22 A. Taxpayer equity provides an equivalent amount of  
23 support for each additional unit of effort.

24 Q. And that's what taxpayer equity is all about, right?

25 A. Yes.

1 Q. Now, talking about equity for kids, if you have a  
2 system that includes the reforms that many people  
3 have talked about previously, about the Price  
4 Differential Index, about the small/sparse factor,  
5 about the educational reforms of 1-to-22, all of the  
6 various House Bill 72 and House Bill 246 reforms, do  
7 you know those that I'm talking about?

8 A. (Witness nodded head to the affirmative.)

9 Q. If you have a system that has all of those in place,  
10 if you have a basic foundation program system that is  
11 overlaid on top of equal tax bases, do you follow me  
12 now?

13 A. (Witness nodded head to the affirmative.)

14 Q. That will result in a lot more equity for kids than  
15 we currently have, will it not?

16 A. Now, you're saying put a foundation program on top of  
17 a guaranteed tax base?

18 Q. No, I'm saying put a foundation program on top of  
19 equal -- districts that have equal tax bases.

20 Assume that you leave our current school  
21 system, financing system that we have in Texas right  
22 now, totally intact. And it just so happens that all  
23 1,063 districts have equal amounts of taxable  
24 property in them. That will result in far greater  
25 equity for kids than we currently see, will it not?

1 MR. O'HANLON: That assumes facts not in  
2 evidence. In fact, it assumes the impossible.

3 MR. GRAY: It's a hypothetical question,  
4 Your Honor. I'm merely asking it that way.

5 THE COURT: All right. You may ask.

6 BY MR. GRAY:

7 A. I have to ask you something else about this system.  
8 You have a guaranteed tax base, or you have equal  
9 property values in each district, or else you do it  
10 through a state formula and have a guaranteed tax  
11 base, and then you have a foundation program. What  
12 do you see a foundation program as being?

13 Q. Well, what I see a foundation program -- let me -- do  
14 you understand -- you've already said you didn't.  
15 The Texas system as we currently have it, okay?

16 A. (Witness nodded head to the affirmative.)

17 Q. A witness testified yesterday from Dallas, Mr. Robby  
18 Collins. And he testified that the current system,  
19 if you had equal districts, tax base wise, you could  
20 keep all of the beneficial reforms of House Bill 72.  
21 That they would not, in any form or fashion, be lost.  
22 Do you agree with that?

23 A. Well, no, I'm still working on that last question.  
24 May I write it down and answer you after I work  
25 through this first question?

1 Q. I'm rephrasing the first question for you.

2 A. Okay.

3 Q. If you were to take our current system in Texas, and  
4 instead of having 1,063 districts with vastly  
5 different tax bases, you had 1,063 districts with  
6 equal tax bases. Are you with me so far?

7 A. Yes.

8 Q. Would any of the beneficial reforms and changes that  
9 were made by House Bill 72 fall by the wayside?

10 MR. R. LUNA: Objection. I haven't heard  
11 anyone elicit from this witness what those benefits  
12 were. This is cross examination. If she knows,  
13 maybe she can testify about it, but she hasn't been  
14 shown to be qualified on House Bill 72, the reforms  
15 that have been in it.

16 MR. GRAY: Your Honor, she's been offered  
17 as an expert on Texas school finance and how this  
18 system works today, and it's all about House Bill 72  
19 and 246.

20 MR. R. LUNA: She's been discussing the  
21 statistical formulas and the statistical background  
22 and the mathematical equations for the equalization  
23 distribution. The reform measures and the eight  
24 principles set out in House Bill 72 have never been  
25 discussed with this witness. I don't even know that

1 she knows what those eight principles were, much less  
2 whether or not the elimination of one or more would  
3 have any effect.

4 MR. O'HANLON: In some respects, I might  
5 add, Your Honor, this may be invading the province of  
6 the Court. I might point out that House Bill 72 has  
7 no severability clause in it and the Court is going  
8 to have to determine whether or not all of House Bill  
9 72 would have passed, but for the finance provisions,  
10 is a question of law. And this witness is not  
11 qualified to make that kind of determination.

12 THE COURT: Run that by me again, please.

13 MR. O'HANLON: House Bill 72 has no  
14 severability clause in it, the standard clause at the  
15 end of every statute that says if a certain provision  
16 is held unconstitutional, then the rest of the  
17 statute stands. House Bill 72 was passed without a  
18 severability clause. Now, the determination of  
19 whether or not the reforms stand, should this Court  
20 strike the financial provisions, is a question of  
21 law, not a question of fact, for the Court to decide.

22 THE COURT: Well, he's just asking -- I  
23 think, from her analysis, she probably -- maybe she  
24 did not and she can say. But I think the chance is,  
25 she may have picked up enough about House Bill 72 to

1 know that if you've got districts with equal tax  
2 bases, is that going to make some, or any, or all of  
3 the House Bill 72 provisions inoperable. If she can  
4 answer that, that's fine. If she doesn't know enough  
5 about it, she can say so.

6 MR. GRAY: Judge, she has written a paper  
7 on it that's cited in this report that they've  
8 introduced in evidence. It's not as if I'm catching  
9 this witness by surprise. I may be catching defense  
10 counsel by surprise.

11 MR. TURNER: Well, I think what the problem  
12 is, Mr. Gray admits he's having trouble. He's asking  
13 her a question about House Bill 72 and the minimum  
14 Foundation Program and how that would be affected if  
15 we have equalized tax base. He's having trouble with  
16 it because it's elemental, that the reason you have  
17 minimum foundation programs is because you're trying  
18 to adjust for differences in wealth for districts.  
19 That's why she's struggling through this.

20 THE WITNESS: That's right.

21 MR. TURNER: And if we didn't have  
22 differences in wealth, you wouldn't -- I mean, the  
23 minimum foundation concept never would have surfaced  
24 in the 20's and 30's. That's why we have it. That's  
25 why she's having difficulty answering that question.



1 MR. GRAY: May I proceed, Your Honor?

2 THE COURT: Yes, sir.

3 THE WITNESS: Well --

4 BY MR. GRAY:

5 Q. Do you know where we were?

6 A. That is what I was trying to say, but maybe this is a  
7 new way of looking at it, and let me think it  
8 through.

9 Although inherent in the definition of a  
10 foundation program, is that it makes up for  
11 differences in property tax bases. So if you have  
12 one guaranteed tax base, I was asking myself, do you  
13 have a foundation program? Then you don't. You call  
14 it a different name. You have a guaranteed tax base  
15 system. That's the difference, is the way it's  
16 structured. So --

17 Q. Call it what you may.

18 A. You were saying about the reforms --

19 Q. Let me do this, because we've -- I don't want to get  
20 us too terribly tied up in this.

21 A. Looking at a guaranteed tax base, let me try to  
22 answer your question as best I can.

23 Q. Okay.

24 A. You said, "Would any of the reforms suffer?"

25 Q. What I said was, in and of itself, if you had equal

1 districts that had equal tax bases, is that  
2 inconsistent with the reforms in House Bill 72?

3 A. Well, I have to say, would they have equal tax rates?  
4 You see, the data show, and it tends to be so, that  
5 poor districts don't have very high tax rates. And  
6 it's harder for them to raise the money, as you're  
7 pointing out. Without a state to equalize that  
8 difference, if they were totally on their own in that  
9 tax rate, and on top of it, the state supported the  
10 tax rate, giving them even additional revenue, they  
11 would be liable to fall quite far behind in  
12 children's equity.

13 This is the difficult thing, I think, in  
14 thinking through some of these different systems. It  
15 seems on the surface to be so fair, because everybody  
16 would have the same tax base. But poor folks,  
17 generally that's -- that's why you call it a  
18 regressive tax, a property tax. It's harder, the  
19 same tax rate is harder for poor folk, because they  
20 don't have that margin of additional income. And  
21 generally, we see in the data that these poor  
22 districts have lower tax rates without a state to  
23 step in, like in a foundation program, and make up  
24 the difference in what their poor property tax base  
25 or their effort might not carry. I would fear that

1 the disparity would increase, as the data show, even  
2 for the guaranteed tax base measure that I simulated  
3 for '85-'86.

4 Q. Let me approach it this way with you.

5 A. Then, too, I don't know that you would have this same  
6 mix of students in the state. That is, you may be  
7 encouraging students in some areas to go to  
8 non-public schools. And that certainly would have an  
9 effect on trying to achieve and provide quality  
10 education.

11 And finally, you wouldn't have that nicely  
12 contained high expenditure, in that only five percent  
13 of the students enjoy. With the larger revenues,  
14 yes. But revenues to experiment, to perhaps lead the  
15 way to new innovations to do things that the state  
16 really can't afford to fund, given the realities that  
17 exist, but that they fund because of that property  
18 tax base. And which doesn't run through the whole  
19 system, but is contained there so that they can spend  
20 money and lose it and fail. And should they find  
21 reforms, the idea goes that those innovations  
22 eventually find their way into the Foundation School  
23 Program and then all students benefit from that, more  
24 or less, small range of wealthy districts as it turns  
25 out in Texas.

1 Q. Do you --

2 A. Small group, excuse me.

3 Q. Mr. Robby Collins, from Dallas, testified yesterday,  
4 that in his opinion, the teacher competency  
5 requirements, the student testing requirements, the  
6 1-to-22 class size requirements, all of the general  
7 things that have been perceived to have been -- no  
8 pass/no play, those things that have been perceived  
9 to have been beneficial, if you had equal tax base  
10 districts, would not, in any form or fashion, be  
11 compromised. Do you agree or disagree with that  
12 statement?

13 A. That all the reforms, did you say, was that the last  
14 part of it?

15 Q. No, I mean -- I don't want to list every single  
16 reform with you, but --

17 A. No, I did write a chapter that's in a book on state  
18 reform on House Bill 72. I'm aware of many of those.  
19 I wrote it with Dr. Richard Hooker and we covered  
20 many of those reforms.

21 Q. Do you find that equal tax districts -- and I'm not  
22 necessarily talking about for operational purposes,  
23 I'm talking for revenue raising purposes -- do you  
24 find that any of those reforms are inconsistent with  
25 having an equal opportunity to raise and spend money

1           for educating kids?

2       A.   Well, I thought that a primary concern was to provide  
3           access for everybody. And as I said, I really do  
4           fear -- I do fear what that would do to the poor  
5           kids, the kids from poor wealth districts, in that  
6           their effort would be curtailed by the fact that  
7           they're from a poor district. And that's what the  
8           state does in a foundation program. It's sort of an  
9           affirmative action. Not exactly, that's a bad  
10          phrase, excuse me. But it helps those districts,  
11          because it gives them more than what their effort  
12          might warrant.

13       Q.   I take it that you hold that opinion, because you  
14           think the property tax is a regressive tax?

15       A.   I don't know any authority in the field that does not  
16           consider the property tax a regressive tax.

17       Q.   And by that, we mean that it impacts poor people more  
18           than it impacts wealthy people?

19       A.   Of the taxes, yes, it's considered regressive.

20       Q.   And it impacts poor people more than it impacts  
21           wealthy people, that's why it's considered  
22           regressive, right?

23       A.   Yes.

24       Q.   And obviously, a school system -- finance system that  
25           relies very heavily on a local property tax for

1 funding the entire system, puts a greater burden on  
2 the poor people than it does on the wealthy people,  
3 correct?

4 A. With a guaranteed tax base system, yes. A foundation  
5 system makes up for the difference in the property  
6 tax from state taxes, which includes income taxes and  
7 sales taxes, and are less regressive than the  
8 property tax, on a relative scale.

9 Q. The more a system, a school finance system relies on  
10 local property tax to fund it, the more regressive  
11 that is and the more -- greater burden that places on  
12 the poor in the state to fund education than it does  
13 on the wealthy, correct? That's all I'm asking.

14 A. The more a state finance system -- so the system like  
15 the Foundation School Program or the guaranteed tax  
16 base, in my opinion, relies on property tax. Yes, I  
17 would agree with you.

18 Q. Okay.

19 A. Not total dollars for education, but dollars within  
20 the program. As I said, in a foundation program,  
21 these are equalized for the poor district by the  
22 state. The state uses different revenues, unless it  
23 has a state property tax, or unless it has a required  
24 local fund assignment, the same thing.

25 Q. Well, so we're not playing word games, you can have a

1 foundation program, but have the -- what is funded  
2 within the foundation program to be so small that the  
3 rest is totally left up to the local taxpayers to  
4 bear, correct?

5 A. I think there was an example on the east coast of  
6 that, whereof, something like the 100 percent of  
7 revenues, the Foundation Program was ten percent or  
8 something.

9 Q. And --

10 A. Was very, very low.

11 Q. The point is, whatever system, whether it be a  
12 Foundation School Program system, or a guaranteed tax  
13 base system, or some other type of system --

14 A. I beg your pardon, it was the finance system, I don't  
15 know if it was a foundation program.

16 Q. To whatever extent, the system relies on local  
17 property taxes to fund it. The more it relies on  
18 local property taxes, the more regressive it is.

19 MR. O'HANLON: Your Honor, before we get  
20 any further, A, it's repetitive. B, I want to make  
21 sure I don't try an issue like this in here. I take  
22 this testimony to be an outright challenge on Article  
23 VII, Section 3 of the Texas Constitution, as being  
24 somehow regressive. And I don't want to try that  
25 issue by consent. And some kind of attack on the

1 property tax code, itself, or the property tax,  
2 itself.

3 MR. GRAY: I'm almost finished with my  
4 cross on this. I'm merely trying to get her to  
5 answer a simple question.

6 THE COURT: I believe she answered that.

7 MR. O'HANLON: She answered it.

8 BY MR. GRAY:

9 Q. Now, going back to where we were, which is the  
10 current system. If you had in Texas districts that  
11 had equal property tax base, you would not need an  
12 enrichment equalization factor, would you?

13 MR. O'HANLON: Your Honor, I've got an  
14 objection to this whole line. I thought about it  
15 last night and I've been thinking about it all  
16 afternoon and I want to make sure I lodge an  
17 objection here, so I don't try another issue by  
18 consent. This case took a turn yesterday to be  
19 talking about district lines. The problem that I've  
20 got with that is that that's not raised in the  
21 pleadings here, and I don't want to try that issue by  
22 consent.

23 The pleadings raise the issue of whether or not  
24 the school -- the system of school finance, that  
25 statute, Chapter 16 of the Texas Education Code is



1 constitutional or not. District lines are created by  
2 other chapters of the Texas Education Code and by  
3 special statute. Those are not raised -- that those  
4 statutes are not challenged in this lawsuit; are not  
5 challenged in the pleadings; they have not been  
6 raised; we have not been put on notice with respect  
7 to that and do not wish to be put in a position of  
8 trying that issue by consent.

9 It's our understanding that the issue in this  
10 case, at this time, is the constitutionality or  
11 unconstitutionality of Chapter 16 of the Texas  
12 Education Code and only that issue. So, we don't  
13 want to be put in a position of trying school  
14 district boundaries or something else by consent  
15 because they have not been raised in the pleadings in  
16 this case.

17 MR. GRAY: Your Honor, we have made a  
18 frontal assault on the method of financing public  
19 education in this state. These school districts are  
20 the creatures of the Legislature. And we merely  
21 contend that if the Legislature is going to have  
22 districts out there that have these vast disparities  
23 in property wealth, then they've got to also make  
24 sure that the poor kids living in those districts  
25 don't get -- in the poor districts, don't get

1 shortchanged. And we don't think this system -- the  
2 system does it. And that's -- that's that.

3 MR. O'HANLON: The problem that we've got,  
4 Your Honor, is that the pleadings allege that the  
5 system of finance is unconstitutional, not the  
6 tolerance of districts that are created by other  
7 statutes, which we are not on notice of, and by other  
8 -- and either by operation of other sections of the  
9 Texas Education Code, which have not been raised in  
10 the pleadings, or by special statute from a long time  
11 ago. And this has not been raised. The issue here  
12 is given -- at least as it's pled. And that's what  
13 I'm making the objection to, so we don't try this  
14 issue by consent, is that what is pled is, that given  
15 the school districts in the state, that is the system  
16 of school financing constitutional or not? There is  
17 no challenge to the existence of school districts in  
18 this state, or boundaries. And in fact, I submit to  
19 the Court, that if these parties are here alleging  
20 that some school district ought to be eliminated,  
21 that they've forgotten a very necessary party. That  
22 they're going to have to get them in here. I mean,  
23 it's not real fair to try Kenedy County or Santa  
24 Gertrudis, and be talking about their elimination,  
25 without bringing them into the courtroom and asking

1           them what they think. You're asking to eliminate  
2           entities, political subdivisions, without notice. So  
3           the question can only be in this case, is whether or  
4           not, given what we've got, the school finance system  
5           is constitutional. That's what's pled in this case.  
6           We've gotten off into something else that is not  
7           fairly raised by the pleadings. And we don't want to  
8           try that issue by consent.

9                   MR. GRAY: Your Honor, the concept of  
10           regional tax authorities was raised by Dr. Richard  
11           Hooker, the first or second day of his testimony;  
12           five or six weeks ago. And we have had witness after  
13           witness talk about these kinds of concepts. And here  
14           we are, six weeks into the trial, and Mr. O'Hanlon  
15           jumps up.

16                   All I'm trying to establish through this  
17           witness, is if she's looked at the 20 service centers  
18           and based upon, again, evidence that's in the record,  
19           to see what the property wealth, just on districts or  
20           service centers, that the state has already used.  
21           That's where this line of questioning is going.

22                   MR. O'HANLON: And what I say is we've  
23           turned this case into something that it wasn't when  
24           it started. Completely. And it's not raised by the  
25           pleadings and we're not on notice of it.

1 THE COURT: What do you think it's been  
2 turned into?

3 MR. O'HANLON: I think it's been turned  
4 into a case regarding the propriety of borders of  
5 independent school districts.

6 THE COURT: Okay.

7 MR. O'HANLON: That's what it appears to  
8 be. And to the extent that it is, I don't want to be  
9 put in the position of trying that issue by consent.  
10 I object to it. I don't think it's relevant. I  
11 don't think it's fairly raised by these pleadings in  
12 this case. And I think you're absent necessary  
13 parties.

14 THE COURT: Okay. Do you want some sort of  
15 a ruling?

16 MR. O'HANLON: Yes.

17 THE COURT: Okay. Well, I'll overrule. I  
18 think that the questions about -- the case has been  
19 sprinkled with testimony about potential remedies,  
20 although that hasn't been the main focus of this  
21 case. But yesterday, towards the end of the day, we  
22 -- I think at my instance, got to talking about that.  
23 And I will not consider that as enlarging their  
24 affirmative pleadings. Okay?

25 MR. O'HANLON: Okay. So I'm not trying

1           that issue by consent.

2           THE COURT: No, not so far as I'm  
3           concerned.

4           MR. O'HANLON: Okay.

5           THE COURT: Okay. I don't think that they  
6           mean for whatever evidence -- we started out, they  
7           didn't want to put on any evidence about remedies.  
8           But there has been some evidence about remedies  
9           sprinkled throughout the trial and I don't think that  
10          that necessarily means that we're trying an attack on  
11          these statutes that you're talking about.

12          MR. GRAY: We're just caught between a rock  
13          and a hard place. He objected when we didn't put on  
14          evidence of remedies. Now, we're trying to start  
15          putting into evidence the remedies and he objects  
16          because we're putting on evidence on remedies.

17          THE COURT: Are you going to have redirect?

18          MR. O'HANLON: No.

19          THE COURT: Anybody over here going to have  
20          redirect?

21          MR. KAUFFMAN: I'm going to have cross  
22          examination.

23          THE COURT: About how long?

24          MR. KAUFFMAN: Two to three hours.

25          THE COURT: Two to three hours? Okay.

1           We're going to stop then.

2                   MR. GRAY: Could I beg the Court's  
3           indulgence for just ten minutes? I'm supposed to be  
4           out of town tomorrow and I was going to try to --

5                   THE COURT: Leave your questions with him.  
6           I'll see you all tomorrow morning at 9:00.

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10                               (Proceedings recessed until  
11                               (Febuary 27, 1987.

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3-87-190-EV

CAUSE NO. 362,516

C 8353

EDGEWOOD INDEPENDENT SCHOOL  
DISTRICT, ET AL

VS.

WILLIAM KIRBY, ET AL

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>

IN THE 250TH JUDICIAL

DISTRICT COURT OF

TRAVIS COUNTY, TEXAS

FILED  
IN SUPREME COURT  
OF TEXAS

JUN 21 1989

STATEMENT OF FACTS  
VOLUME XXV OF XLVI

JOHN T. ADAMS, Clerk  
By \_\_\_\_\_ Deputy



TAKEN FEBRUARY 27, 1987

MONICA ROSS WEIDMANN

Official Court Reporter  
250th Judicial District Court

Travis County Courthouse • Austin, Texas 78701

CAUSE NO. 362, 516

EDGEWOOD INDEPENDENT SCHOOL > IN THE 250TH JUDICIAL  
DISTRICT, ET AL >  
>  
>  
VS. > DISTRICT COURT OF  
>  
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>  
WILLIAM KIRBY, ET AL > TRAVIS COUNTY, TEXAS

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## STATEMENT OF FACTS

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BEFORE THE HONORABLE HARLEY CLARK, JUDGE PRESIDING

---

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17 ATTORNEYS FOR THE DEFENDANT-INTERVENORS  
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BE IT REMEMBERED that on this the 27th day of  
February, 1987, the foregoing entitled and numbered cause  
came on for trial before the said Honorable Court,  
Honorable Harley Clark, Judge Presiding, whereupon the  
following proceedings were had, to-wit:

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1 FEBRUARY 27, 1987

2 MR. KAUFFMAN: Your Honor, Mr. Camilo  
3 Perez will complete the cross examination of Mr.  
4 Gray and then I'll do the cross examination for the  
5 Plaintiffs.

6 THE COURT: Okay.

7 MR. R. LUNA: Your Honor, before we get  
8 started, I would like to say on behalf of at least  
9 our Defendant-Intervenors and I assume all of them,  
10 we want to make sure that the Court understands that  
11 we do join in the State's objections yesterday to the  
12 boundaries. And our objections to not wishing to  
13 waive anything and preserve our objections in that  
14 regard.

15 THE COURT: Okay. I understand.

16 MR. TURNER: That is correct, Your Honor.

17 THE COURT: Okay. That's fine.

18 DR. DEBORAH VERSTEGEN  
19 was recalled as a witness, and after having been reminded  
20 that she was still under oath, testified as follows, to-wit:

21 CROSS EXAMINATION

22 BY MR. PEREZ-BUSTILLO:

23 Q. Dr. Verstegen, I believe you testified yesterday that  
24 everything that you did in the document we were  
25 talking about, Exhibit 48, "Hard Times, Hard

1           Choices," was supported by the literature in equity  
2           analysis, do you recall testifying that?

3       A.    I don't recall the specific wording, but, yes, I  
4           would agree with what you're saying.

5       Q.    And I notice that on Page 96, there was a section we  
6           were talking about yesterday. It's under Educational  
7           Performance Standards, a Review of the Literature.  
8           There is some citations between Pages 96 and 101,  
9           roughly, that I wanted to ask you some questions  
10          about.

11      A.    Okay.

12      Q.    Some matters that I think have been injected into the  
13          record that I wanted to clarify.

14      A.    Okay. Counselor, I'm not exactly sure at which point  
15          you're referring to my statement. I was referring to  
16          the methodology with regards to the disparity  
17          statistics which I presented.

18      Q.    Uh-huh.

19      A.    Now, this is another section here. Okay?

20      Q.    We did talk about this section yesterday, didn't we?

21      A.    We did.

22      Q.    And you did write this section?

23      A.    I did, yes.

24      Q.    Looking at Page 96, Footnotes 9 and 10, there's a  
25          particular study reference there, by Purkey and

1 Smith?

2 A. Yes.

3 Q. Have you read that study?

4 A. Yes, I have. And I've used it in the class. It's  
5 actually on my class syllabus.

6 Q. And this is one of those reviews of school  
7 effectiveness literature that you were referring to  
8 yesterday?

9 A. Yes.

10 Q. Is that a relatively recent study?

11 A. I see the date is missing. Oh no, it isn't, 1985.

12 Q. Yes. And you relied on this article in formulating  
13 your conclusions and your recommendations?

14 A. It was part of several articles that I looked at.

15 Q. Do you know whether Purkey and Smith had written  
16 extensively, previously in this area?

17 A. On effective schools, Stewart Purkey was a research  
18 assistant with me at the University of Wisconsin  
19 Research and Development Center, Wisconsin Center for  
20 Education Research. It's about a 13-floor building.  
21 And about seven of those floors were researchers, so  
22 it was relatively a large research effort.

23 Q. I'm not asking you how you --

24 A. Marshall Smith was the director of the center.

25 Purkey's main body of research, and he's the first



1           writer there, was on effective schools. And he still  
2           writes in that area.

3       Q.   Now Marshall Smith, is that the co-author of the  
4           article?

5       A.   Yes, the second article.

6       Q.   Is that the Marshall Smith that's the Dean of the  
7           Stanford School of Education, is that correct?

8       A.   Yes, it is.

9       Q.   So he's a pretty eminent national educator?

10      A.   He left Wisconsin to take the deanship at Stanford.

11      Q.   Uh-huh.

12      A.   He came from Washington D.C.

13      Q.   Now, did you study this paper pretty carefully, the  
14           Purkey and Smith paper? I mean, you must have gone  
15           over it. You must have taken it into account as you  
16           wrote?

17      A.   Yes, was there something there that --

18      Q.   When you put this paper together, you used that  
19           study. And you cited it, generally, at Footnote 9,  
20           as kind of your opening citation to this section, for  
21           a broad series of statements about previous research,  
22           isn't that correct?

23      A.   Well, no, stylistically. I guess I would say that  
24           yes, I did open with Purkey and Smith.

25      Q.   Do you recall reading the first page in the article?

1 A. I don't recall that first page to mind right now. It  
2 was a rather lengthy article, was it not?

3 Q. Would you be surprised to find on that first page,  
4 Doctors Purkey and Smith say something to the effect  
5 of the following, that "there are not now, as there  
6 have never been, simple answers to the questions of  
7 what is wrong with our schools and how they can be  
8 changed." And that the quote, "Window of opportunity  
9 opened by the education reports and the school  
10 effectiveness literature will lead to higher-quality  
11 education only to the extent that the hard issues  
12 facing schools are not ignored or turned into  
13 simplistic policy recipes." Does that sound familiar  
14 to you?

15 A. It does.

16 Q. And you made some reference yesterday, I believe, to  
17 the importance of not oversimplifying in this area?

18 A. Yes.

19 Q. Now, would you agree that it's important, as an  
20 education researcher, not to ignore hard issues and  
21 not to get too much into simplistic policy recipes?

22 A. I suppose so.

23 Q. And that it's important not to make flat statements  
24 like "dollars don't make a difference."

25 A. Did I cite Purkey and Smith as making that statement?

1 Q. Why don't you look at your citation.

2 A. The Purkey and Smith citation reads, "Previous  
3 research was unsuccessful in finding variables easily  
4 manipulable by policy directives that had a  
5 demonstrable effect on student achievement." And we  
6 were talking, I believe, at that time, about student  
7 achievement. "Input-output analyses of quantitative  
8 measures such as class size, cost of school buildings  
9 or equipment, or the presence of compensatory  
10 education programs failed to find school level  
11 characteristics that were significantly related to  
12 academic achievement."

13 Q. Now, do you recall in that article that Purkey and  
14 Smith summarized what they described as nine kinds of  
15 factors, or characteristics of effective schools'  
16 practice that can be administratively mandated?

17 A. I believe so.

18 Q. Now, do you recall in the list of those factors, that  
19 the very first factor that was listed was a factor  
20 that they labeled "school site management" and  
21 "democratic decision making." Does that ring a bell?

22 A. I guess so. If you had an extra --

23 Q. At that at the end of that factor, when they  
24 described it, they said, "This includes giving staffs  
25 more authority over curricular and instructional

1           decisions and allocation of building resources." Do  
2           you recall that?

3       A.    May I ask you for a copy of the article, so I could  
4           follow what you're looking at?

5       Q.    I'm not really asking you, at this point, to reread  
6           the article. I'm asking you if you recall --

7       A.    I do not have a photographic memory.

8       Q.    I understand.

9       A.    And have naturally looked at a lot -- a lot of  
10          writing.

11      Q.    Would you be surprised if when they talked about --

12      A.    When you're asking about specific statements, to be  
13           perfectly frank and say, "Yes, I recall that exact  
14           statement," I feel that's a bit dishonest, if I can't  
15           take a look at it and refresh my memory. So I will  
16           follow along with what you're saying, but I want you  
17           to understand that.

18      Q.    Sure, I have no problem.

19      A.    And pulling them out of context like that, it's  
20           sometimes hard not to be able to look down at the  
21           rest of what they were saying, that may have figured  
22           very importantly into some of these statements. It  
23           all worked together as a total piece that they wrote.

24      Q.    And I think exactly what we're going to be trying to  
25           do is put in context some of the statements that

1           you've referenced in that article. And that's  
2           exactly what we're going to try to do.

3       A.    In the context of the rest of the article?

4       Q.    Do you recall the section where they talk about the  
5           nine factors?

6       A.    I recall the factors, yes.

7       Q.    Do you recall the second factor, where there's  
8           mention of the importance of leadership at the school  
9           building level?

10      A.    In the context of what I just told you, I will say  
11           yes, but I -- I am having difficulty with the  
12           specific recall of particular sentences and words.

13      Q.    Do you recall, perhaps, their mentioning in that  
14           factor and elsewhere in the article, the importance  
15           of providing outside change facilitators where  
16           indigenous leadership was missing?

17      A.    Perhaps.

18      Q.    That's not a new concept?

19      A.    No.

20      Q.    Do you recall them mentioning as a third factor, the  
21           importance of staff's stability?

22      A.    I can't recall the specific factors without looking  
23           at it. But if you would just read them, if you would  
24           like to review them, that would be just fine.

25      Q.    The third factor, staff stability: "Frequent

1 transfers are likely to retard, if not prevent, the  
2 growth of a coherent and ongoing school personality,  
3 especially in early phases of the change process."

4 That's not new to you is it, as a concept?

5 A. I can't cite where that may have originated, if  
6 that's what you're asking.

7 Q. Is that a new idea?

8 A. With Purkey and Smith, you mean?

9 Q. In the literature?

10 A. I would have -- did they cite it there, or did they --

11 Q. That's the third factor they listed among their  
12 summary of the nine factors.

13 A. And are those their original factors? That's what I  
14 would look at if I had the paper, to see if they're  
15 citing someone else, or if those are their ideas.

16 Q. That's the body of the article.

17 A. Perhaps that's their idea that these things together  
18 is what makes for effective schools.

19 Q. Do you recall them listing the ninth factor and  
20 calling it "district support?"

21 A. Okay. Did we just go from the third to the ninth?

22 Q. Yes.

23 A. Okay.

24 Q. Do you recall the ninth factor?

25 A. In the sense that we've been discussing.

1 Q. Okay.

2 A. This --

3 Q. And when they talked about a ninth factor, they  
4 talked about district support, they talked about  
5 fundamental change, building level management, staff  
6 stability and so on, depend on support from the  
7 district office. "District recognition of school  
8 staffs' efforts and the provision of necessary  
9 resources are necessary to the improvement process."  
10 Does that ring a bell?

11 A. Fostering a supportive climate of the efforts of the  
12 building principle.

13 Q. And providing necessary resources at the district  
14 level?

15 A. And the basic or necessary resources, perhaps. I  
16 don't have the article, but I will go along with what  
17 you're saying.

18 Q. Would you agree that it would be rather difficult to  
19 implement these nine factors, if, in fact, there were  
20 not necessary resources at the district level?

21 A. I think you need to have a basic program resources,  
22 yes.

23 Q. That it might be a rather empty power to have school  
24 level authority and not have too many resources to  
25 allocate?

1 A. That might be a bit complicated.

2 Q. That it might be a little hard to foster staff  
3 stability, if you've got low pay, bad working  
4 conditions and high turnover?

5 A. Anything is possible. That might be, yes.

6 Q. Do you recall the section in your report -- in the  
7 same section, I believe it's Page 101, where you  
8 recommended the adoption in Texas of what you  
9 describe as a school improvement program?

10 A. Yes, I do.

11 Q. And you describe a program of that name in  
12 California?

13 A. Yes, I do.

14 Q. And that you summarize that program as, among other  
15 things, in California or in Texas as proposed,  
16 providing monetary incentives for school level  
17 reforms?

18 A. Yes, I do.

19 Q. Do you recall Purkey and Smith, in their article,  
20 going back to that for a minute, themselves,  
21 recommending a similar kind of program?

22 A. School improvement programs in effective schools  
23 studies are two areas of the research that have been  
24 converging. As I said earlier, a program, naturally,  
25 needs some fiscal support.



1 Q. Do you recall Purkey and Smith --

2 A. Didn't we discuss that?

3 MR. O'HANLON: Wait a minute. The witness  
4 gets to answer a question.

5 MR. PEREZ-BUSTILLO: Sorry, Your Honor.

6 THE COURT: Both of you cannot be talking  
7 at the same time, you'll drive my court reporter  
8 crazy.

9 MR. PEREZ-BUSTILLO: I apologize, Your  
10 Honor.

11 A. Yesterday, I never intended to say you can run a  
12 school program with no money, or any program with no  
13 money. You wouldn't even have a place to meet  
14 without a building. I was talking about the fairness  
15 of the distribution of the money, the equity of that  
16 money.

17 Q. Uh-huh. Do you recall Purkey and Smith talking about  
18 a similar kind of monetary incentive grant program  
19 for school effectiveness?

20 A. Did they talk about a categorical grant program in  
21 that article?

22 Q. If I told you that what they said is that, "Any  
23 school would be eligible for a minimum grant  
24 (substantial enough to be attractive) but schools  
25 with high proportions of poor or low-achieving

1 students might receive money on a prorated basis."

2 Would that surprise you?

3 A. A prorated basis?

4 Q. Uh-huh.

5 A. No, it doesn't surprise me that they might be  
6 describing how the grant would look, or the  
7 discretionary article would grant --

8 Q. And that's also in the article that you cited --

9 THE COURT: Excuse me, just a minute. Do  
10 not interrupt her.

11 MR. PEREZ-BUSTILLO: I'm sorry, Your Honor.

12 THE COURT: Just take your time.

13 A. It doesn't surprise me in that they're suggesting a  
14 program that they don't expect that that program can  
15 just happen with no support. There is a basic,  
16 perhaps, level that they're discussing. And they  
17 went further to discuss how you might distribute  
18 that. It doesn't surprise me, no, it doesn't.

19 Q. And that that same discussion by them is in the same  
20 article that you cited at the beginning of the  
21 section?

22 A. And at the end of the section I utilized that,  
23 perhaps as you suggested, in the recommendation. Is  
24 that so? That that led to the recommendation it  
25 provided support for what you are showing to be a

1            recommendation that's very similar. To me, that's  
2            -- that follows.

3        Q.    Now, do you recall that there's another section in  
4            the Purkey and Smith article that talks about the  
5            importance of staff development activities in  
6            particular?

7        A.    Now, that, I'm having trouble recalling.

8        Q.    You recall that staff development was one of the  
9            issues that were included in the nine factors?

10      A.    I believe you just read that factor. So --

11      Q.    Uh-huh. And that in the article, Purkey and Smith  
12            said that, "District policies can be oriented to  
13            facilitate schoolwide staff development into at least  
14            two ways." That, "First, resources can be made  
15            available to schools on a demand or need basis." And  
16            that "This includes providing information (e.g., data  
17            on student achievement, material on new teaching  
18            methods) and training (e.g., curriculum specialists  
19            from the central office, outside consultants and  
20            experts)?"

21      A.    I beg your pardon, what was the question?

22      Q.    Do you recall that they discussed that issue in their  
23            article?

24      A.    Well, as we discussed earlier, I -- specific  
25            individual phrase recall, I'm having difficulty with.

1 But it seems to make sense that it would be. And I  
2 certainly, if you're reading from the article, will  
3 take your word for it, Counselor, that that's what  
4 they said.

5 Q. And it's certainly common knowledge that outside  
6 experts and consultants cost money, isn't that  
7 correct?

8 A. Exactly.

9 Q. And that a school district would have to have the  
10 money available in order to draw on outside  
11 consultants, facilitators, experts, in-service  
12 trainers, staff developers?

13 A. Exactly.

14 Q. Do you recall any of the general conclusions in the  
15 Purkey and Smith article? Not specific language,  
16 but --

17 A. Not offhand. I couldn't tell you what they were  
18 right this minute, I don't think, without quickly  
19 reviewing that article in a couple of minutes.

20 Q. In the article --

21 A. I believe they suggested implementing those points  
22 that they presented in providing a stronger policy  
23 towards effective schools.

24 Q. Do you recall whether they addressed the question of  
25 what they described as "institutional obstacles" to

1 implementing effective schools?

2 A. Perhaps if you refresh my memory, or if I could just  
3 see once, that article.

4 Q. At the end of the article -- I mean, certainly this  
5 will be made available to you, there's no contention --

6 A. But I could answer the questions.

7 Q. I understand. At this point, it's just a question of  
8 your recall. And given that this is a review of  
9 literature that I'm sure you're very familiar with,  
10 we're just trying to refresh your recollection as we  
11 go along.

12 At the end, they lay out -- I'm sorry, it's not  
13 nine this time, six factors that they describe as  
14 "institutional obstacles," the school improvement  
15 implementations. Factor five, as they define it, is  
16 "lack of resources."

17 A. Uh-huh.

18 Q. That doesn't surprise you?

19 A. No, I don't think anyone is suggesting that you can  
20 have a program with no resources or that you can have  
21 school without any money.

22 Q. And that Purkey and Smith, in their conclusion, under  
23 that point, "Lack of resources," say, "Most schools  
24 will need additional time, money and information, if  
25 their staffs are to break old habits of instruction

1           and management and to acquire new attitudes and  
2           expectations." And then they cite a study by Berman  
3           and McLaughlin, 1977. Are you familiar with that  
4           study?

5   A.   What was the name of the study, please?

6   Q.   Berman and McLaughlin --

7   A.   Berman and McLaughlin haven't written very much.

8   Q.   -- 1977.

9   A.   But what is the name of the study, though? Berman,  
10       is this Steve Berman, or is this Berman from  
11       California? And McLaughlin --

12   Q.   It's P. Berman and M. W. McLaughlin. It's a Rand  
13       Corporation study.

14   A.   Right.

15   Q.   "Federal Progress Supporting Educational Change.  
16       Factors Effecting Implementation and Continuation.  
17       Volume 7."

18   A.   I'm not sure that I've seen Volume 7 of that.

19   Q.   But you're familiar with --

20   A.   I have reviewed some of Berman's writing in the  
21       field. And I've read several of McLaughlin's  
22       articles, but that particular Volume 7, I'm not sure  
23       if I reviewed that.

24   Q.   Now, Purkey and Smith cite --

25   A.   Paul Berman writes in that area. McLaughlin writes

1 in many different areas.

2 Q. Uh-huh. Now, Purkey and Smith cite that Berman and  
3 McLaughlin study as part of this conclusion about  
4 institutional obstacles to school effectiveness  
5 implementation. And they say that Berman and  
6 McLaughlin found, "that when outside funding was  
7 exhausted, innovations were often discontinued." Does  
8 that surprise you?

9 A. I don't see how that differs from what we've been  
10 saying.

11 Q. So, would you agree with that as a general statement?

12 A. I beg your pardon?

13 Q. Would you agree with that as a general statement?

14 A. Would I agree that you cannot have a program with no  
15 money at all? Yes, I would agree with that. I think  
16 that would be very difficult. Where would you meet?

17 Q. Or that when a program that's in process is found  
18 short of money to fulfill its objectives, that that  
19 can have an impact?

20 A. Well, if a program that is in progress is found to be  
21 short of money, that that could have some impact of  
22 some sort, I imagine it could have some impact of  
23 some sort.

24 Q. And is it fair to say that the bottom line of Purkey  
25 and Smith, at least in this summary, seems to be that

1           when you're talking about implementing an effective  
2           school's agenda in a school system that needs it,  
3           that that costs money?

4   A.    I don't think that's the bottom line. The point of  
5           the article is that there's -- I believe you said  
6           nine interconnecting ideas there, and that's one of  
7           the ideas. Effective school site leadership,  
8           promoting a good climate, providing teachers an  
9           opportunity to take part in decision making, I'm not  
10          sure if they said it in this article or in another.  
11          These things are very important in terms of effective  
12          school's literature and in terms of what they're  
13          saying.

14   Q.    Now --

15   A.    So I would differ with your idea that you can take  
16           these nine things and then take one of those things  
17           as a bottom line. If that is one of the specific  
18           nine things, or if it's just part of one of the other  
19           nine things, I'm not sure. I don't have the article,  
20           but --

21   Q.    But if, when we're talking about --

22   A.    It is complex, like you started off. It's not one  
23           bottom line.

24   Q.    But when we're talking about their specifically  
25           stating that one of the six identified obstacles to



1       implementing an effective school's program in a  
2       particular district is lack of resources, that seems  
3       like it's being given a certain amount of importance,  
4       isn't that correct?

5     A.   I see what you're saying. But you see, if there's  
6       six obstacles, it doesn't reduce down to one of those  
7       six, it reduces down to six.

8     Q.   Would you agree that it's one of five?

9     A.   I would agree that they have cited that no resources  
10       is an obstacle. And I agree, I'm not -- I would  
11       never, I think, say that you could provide a  
12       statewide education program without any money.

13    Q.   I don't know if you recall the specific bibliography  
14       or the range of citations in the Purkey and Smith  
15       report, you've testified that it was a lengthy  
16       report. I presume that you have some respect for it  
17       as a comprehensive piece, isn't that correct?

18    A.   It's part of a body of effective schools' literature.

19    Q.   Would it surprise you if I mentioned, for example, it  
20       drew on 109 different studies in formulating its  
21       conclusion?

22    A.   I believe that I used it, because I thought it was  
23       somewhat representative, or at least that it was a  
24       solid piece. I wouldn't be surprised, no.

25    Q.   Now --

1 A. But I would, perhaps, take issue that it drew on a  
2 109 studies. It might have drawn on a 109 other  
3 articles, but when you say studies, you're talking  
4 about actual research studies.

5 Q. Uh-huh.

6 A. That's different. That's somebody going out there  
7 and monitoring what's the difference between an  
8 effective school and a non-effective school and  
9 writing up additional research. Someone else could  
10 say, "Well, I've been a principal for awhile and this  
11 is what I think," but never really test that in a  
12 broader field, or never take any actual observations  
13 to try to look at that in a scientific manner.

14 Q. Uh-huh.

15 A. So I would take issue there. And if you've counted  
16 them and there's a 109, I would say some of them  
17 might be secondary sources of the studies and some  
18 might be opinion pieces. And therefore, I don't  
19 think you could correctly call them 109 studies.

20 Q. And yet, for example in Footnote 10, you reference  
21 several studies, yourself, and note that they were,  
22 themselves, cited in Purkey and Smith, isn't that  
23 correct?

24 A. I do.

25 Q. Now, looking at your citations of Purkey and Smith in

1           Pages 96 to 101, if I'm not mistaken, you cite them  
2           in Footnotes 9 --

3   A.   Excuse me, may I answer the other question? I'm  
4       sorry to interrupt you.

5           I don't think I recall those other studies,  
6       though. I've referenced that -- that idea that I was  
7       quoting from them, I couldn't attribute to them,  
8       because they attributed it to someone else. So I was  
9       showing that I quoted Purkey and Smith, but they were  
10      quoting these other folks, these other names. But  
11      the word "studies," which is what we were discussing,  
12      isn't included in that footnote.

13   Q.   But you did, in fact, cite Purkey and Smith twice, I  
14       believe only twice, in Pages 96 to 101. And you  
15       cited them once for Purkey and Smith, and once for  
16       studies incorporated in Purkey and Smith. Is that a  
17       fair summary?

18   A.   May I take some time and look through --

19   Q.   Please do.

20   A.   -- and see if I've cited them anywhere else?

21   Q.   Please do.

22   A.   If that's important to you.

23   Q.   Sure.

24   A.   Excuse me, between Page 96 and 102, between those  
25       approximately five to six pages, I believe I've cited

1           them twice.

2       Q.   And once in Footnote 9, you cite the study, itself,  
3           Purkey and Smith, or the review, itself, is that  
4           correct?

5       A.   Yes, I say according to Purkey and Smith. And then I  
6           wanted to cite according to which articles, if anyone  
7           wanted to take a look at that.

8       Q.   And then in Footnote 10, you cited the underlying  
9           studies or papers that Purkey and Smith relied on, is  
10          that correct?

11      A.   The actual quotation that I utilized, which was  
12          because they did not come up with that conclusion  
13          alone. They're talking -- I had to cite what they  
14          cited.

15      Q.   Now, as we have just reviewed, there were several  
16          other conclusions that Purkey and Smith came up with  
17          regarding, for example, the last issue we discussed  
18          about obstacles, the implementation of effective  
19          schools, where they talked about lack of resources.  
20          They also talked about resources at several other  
21          points in the article. You did not cite those pages  
22          and those conclusions, isn't that correct?

23      A.   I did not go over the entire article; it's quite  
24          lengthy.

25      Q.   Did you read the entire article?

1 A. My entire class reads that entire article. And I  
2 teach that as part of my policy class. I certainly  
3 did read it. And I did -- tried my best to represent  
4 what was important to that question --

5 Q. Now --

6 A. -- within these few pages.

7 Q. Moving on from Purkey and Smith, in Exhibit 48, you  
8 also cite, and I think within these same pages, I  
9 believe it's beginning on Page 100 and on to 101, I  
10 believe. You cited another major review, as far as I  
11 understand, by a Dr. Hanushek. I'm not sure if I'm  
12 pronouncing the name right. Hanushek, who I believe  
13 you also mentioned yesterday in testimony?

14 A. Yes, I did cite a review by Hanushek and there's  
15 another major review by Clark there, that you may  
16 have missed in the middle.

17 Q. Actually we'll be talking about Clark as well, I  
18 think.

19 Beginning with Hanushek, the study is  
20 referenced as Hanushek, "Throwing Money at Schools,  
21 Journal of Policy Analysis and Management."

22 A. Now, what citation was that?

23 Q. It's citation 16 and 17, I believe.

24 A. Okay.

25 Q. Now, that's the "Journal of Policy Analysis and

1 Management." The Purkey and Smith article, just to  
2 get back to that for a second, is in the "Elementary  
3 School Journal," is that correct?

4 A. I believe that's what the cite says.

5 Q. And Smith, at least you testified, is a prominent  
6 educator. He's the Dean of the Stanford School of  
7 Education; I believe you said he was the director of  
8 the center in Wisconsin, is that correct?

9 A. I believe you testified that he was a prominent  
10 educator; I would concur with that. He is the Dean,  
11 as you pointed out. And he was the former director  
12 of the Wisconsin Center for the Education Research  
13 Center. Wisconsin Center for Education Research, I  
14 beg your pardon.

15 Q. And Dr. Hanushek is a professor of economics and  
16 political science, is that correct, at the University  
17 of Rochester?

18 A. I'm not sure, without that article. I believe it  
19 would be cited on the bottom of the article.

20 Q. "Eric Hanushek is Professor of Economics and  
21 Political Science and Director of the Public Policy  
22 Analysis Program at the University of Rochester."

23 A. I don't know if that's recent, but --

24 Q. To your knowledge, is he a political scientist and  
25 economist, in effect?

1 A. To my knowledge, he writes in the economics area,  
2 uh-huh.

3 Q. He's not the Dean of the School of Education, for  
4 example?

5 A. As I -- I'm trying to point out, I can't say that. I  
6 don't exactly know where he's located right now.

7 Q. But you're familiar with his expertise, isn't that  
8 correct?

9 A. He was recommended to me to look at. And I noticed  
10 in Charles Benson's deposition, that he also pointed  
11 out that Hanushek was a strong person in this area.  
12 That he respected, I believe, whose writings he  
13 respected, Charles Benson.

14 Q. Uh-huh. And the Purkey and Smith article is a 1985  
15 article, is that correct?

16 A. Should we read the full citation into the record  
17 there?

18 Q. It will be in the exhibit. I mean, the exhibit is  
19 going into evidence.

20 A. It's Purkey and Smith, "School Reform: The District  
21 Policy Implications of the Effective Schools  
22 Literature" in the "Elementary School Journal." It's  
23 in the 85th Volume, No. 3, Pages 353 to 390,  
24 published in 1985.

25 Q. And the Hanushek study that you cited Footnotes 16

1           and 17, is a 1981 study, is that correct?

2    A.    It was published in 1981.

3    Q.    So in fact, it reflects research before 1981?

4    A.    I can't be certain, he may have done it that very  
5           year. Perhaps not.

6    Q.    Now, you cite Dr. Hanushek more than once, isn't that  
7           correct, in your Exhibit 48?

8    A.    Again, may I go through and --

9    Q.    Please do.

10   A.    -- validate that? Between Page 100 and 102, I see  
11           that I cited Hanushek in Footnotes 16 and 17, which  
12           would be twice.

13   Q.    And you cite Dr. Hanushek for the proposition,  
14           essentially, that research does not indicate a direct  
15           relationship between expenditures on education and  
16           outcomes in education, isn't that correct?

17   A.    I believe the title was "Throwing Money at Schools."  
18           And I believe the title reflects the overall -- the  
19           overall ideas that he was presenting.

20   Q.    Now, would it surprise you if I also told you, that  
21           in that same article that you cited, Dr. Hanushek  
22           also said, "The evidence does not indicate that  
23           money, or the specific inputs, could not have a  
24           beneficial effect?"

25   A.    That sometime in the future this may change, this



1 relationship that he's been talking about may change?  
2 I really would feel more comfortable if I could have  
3 that article and look at the entire sentence and  
4 things. But no, I'm not surprised. If you're  
5 quoting, I believe you. But this is difficult  
6 without these articles.

7 Q. It wouldn't surprise you if he made a statement to  
8 that effect, that the evidence doesn't indicate that  
9 money or specific inputs could not have a beneficial  
10 effect?

11 A. And then in the sentence that follows, it says, "The  
12 evidence does indicate" -- the evidence does indicate  
13 -- now, in other words, not perhaps sometime in the  
14 future, things may change, "that given the current  
15 operations of schools, there should be no presumption  
16 that simply providing more money or improving schools  
17 in conventionally accepted ways, will have any  
18 perceptible impact on student achievement." That is  
19 what follows the sentence you read me, and what I was  
20 talking about, putting things in context.

21 Q. Now, there are two points then, in those two  
22 sentences. In effect, one point is that the research  
23 doesn't prove that dollars don't make a difference,  
24 it proves that they may not always make a difference  
25 in effect, isn't that correct?

1 A. I don't believe that you've -- you're correctly  
2 summarizing what is said here. I believe he's saying  
3 that the research shows that -- well, why don't we  
4 just look at what he said and use his language here,  
5 instead of paraphrasing?

6 Q. I guess at this point, Dr. Verstegen, really what I'm  
7 asking -- I don't think neither of us needs to read  
8 the articles into the record. But more, I'd like  
9 your sense, your opinion, since you are the witness  
10 in court today, and you drew on Dr. Hanushek, among  
11 others. I would just like your understanding of  
12 whether you think it's a fair statement to say that  
13 there's two different kinds of conclusions that can  
14 be drawn from all this research. From the research  
15 that Purkey and Smith looked at, from the research  
16 that Dr. Hanushek looked at, from the research that  
17 you're familiar with for years and years in the  
18 field. As an expert in the field that is here today,  
19 to give the Court their best sense of that  
20 literature. And that you can break it down into two  
21 parts. That one part is there may be evidence --  
22 there may be, that expenditures may not make the  
23 difference, but that there isn't evidence that  
24 expenditures don't make a difference at all?

25 A. But that -- what was -- the first one that you're

1           suggesting is that there may be evidence that  
2           expenditures don't make a difference.

3       Q.    I would like you to put it in your own words.

4       A.    What did you say the second one was?

5       Q.    That there's a difference between A, showing the  
6           dollars don't make a difference, cannot have a  
7           beneficial effect, as Dr. Hanushek stated, that's A.  
8           And B, that they do not make a difference at all.

9       A.    I still didn't get what you're saying in the first  
10          one.   The first one.

11      Q.    What I would really like you to do, Dr. Verstegen, is  
12          in your words --

13      A.    I would agree that the literature shows that there  
14          isn't a relationship between expenditures and  
15          achievement, overall.   That's that what the research  
16          showed in this study.   And I was trying to make an  
17          effort to go beyond the State of Texas to the nation  
18          to see if this was a singular finding and found in  
19          the literature, that -- and the literature that I  
20          cited -- and naturally, I didn't read every single  
21          thing that has ever been written in the history of  
22          education.   Time doesn't allow that.   But I attempted  
23          to utilize well-respected sources, good sources that  
24          did do a lot of reading.

25                   MR. PEREZ-BUSTILLO:   If I could approach

1           the witness, Your Honor?

2                       THE COURT: Yes, sir.

3   Q.   If I could just take the article from you for a  
4       second?

5   A.   Okay.

6   Q.   There's just one other reference that I wanted to  
7       call your attention to in the article. In the  
8       conclusion of the article, Dr. Hanushek makes some  
9       broad judgments. He couches them as the  
10      recapitulations. And he says that, "Despite  
11      extensive research, we are currently quite far from  
12      an adequate understanding of either the underlying  
13      determinants of scholastic performance or the  
14      characteristics of school decision-making. Indeed,  
15      the research on these issues has the character of the  
16      search for the Holy Grail -- noble but futile (at  
17      least in the short run)." Do you recall that  
18      statement?

19   A.   I think it makes the point that we can't reduce it  
20      down to one simple idea that more money is going to  
21      buy extra higher student scores. That -- this is the  
22      point I think he was summarizing there.

23   Q.   Or the converse, that dollars cannot have a  
24      beneficial effect, isn't that correct?

25   A.   That perhaps in the future we'll find that they do,

1 but we haven't been able to show that yet. Anything  
2 can really happen in the future.

3 Q. Do you recall Dr. Hanushek talking, at one point,  
4 about looking at this range of studies that have been  
5 undertaken and describing them as a "sea of  
6 insignificant and inconsistent results?"

7 A. The studies that we're trying to refute, Coleman, you  
8 mean?

9 Q. Those in the --

10 A. The 130 studies?

11 Q. -- the teacher experience studies in particular?

12 A. That they could find no significance between  
13 experience and student achievement?

14 Q. And the teacher experience studies as well?

15 A. That they were trying to see if experienced teachers  
16 made a difference and they couldn't, it was all  
17 insignificant?

18 Q. That it's very hard to reach judgments in these  
19 series.

20 A. That's an insignificant result. It's like -- in  
21 looking at this, you do a T-test to see if that's  
22 significant for the whole population, or if this is  
23 just some unusual occurrence. So, whenever they  
24 thought they found something, then they'd do a  
25 statistic to see if that was true for the broader

1           population. And it was insignificant. It wasn't  
2           true. That's a "sea of insignificant studies."

3       Q.   Insignificant and inconsistent?

4       A.   That it has a statistical meaning, it isn't just a  
5           word.

6       Q.   Now, you also mentioned yesterday, your familiarity  
7           with the work of Dr. Rossmiller who you also cite in  
8           these same pages that we've been talking about, Pages  
9           96 to 101. Again, you cite him at least twice. I  
10          believe it's Footnotes 18 and 19, Page 100?

11      A.   Yes, I see. I have cited him in Footnotes 18 and 19.

12      Q.   And I believe you've testified that Dr. Rossmiller is  
13          a colleague with whose work you're familiar with?

14      A.   He's a very eminent scholar in the field. I am  
15          flattered to think that -- yes, we're both  
16          professors, same as Hanushek. And I believe Smith is  
17          teaching.

18      Q.   Okay. Would you say that you're generally familiar  
19          with Dr. Rossmiller's work, with his publications and  
20          so forth?

21      A.   Yes.

22      Q.   And would you consider yourself relatively current on  
23          his writings?

24      A.   I don't -- relatively current, I suppose. Yes.

25      Q.   Have you attended presentations or addresses by him,

1           for example, in public settings, in academic  
2           settings?

3       A.    I did last year at the American Education Research  
4           Association.

5       Q.    Do you recall where that meeting was?

6       A.    Where was AERA last year? Was it in San Francisco, I  
7           believe.

8                   MR. RICHARDS: Good place as any. If not,  
9           it should have been.

10   BY MR. PEREZ-BUSTILLO:

11   Q.    Have you ever reviewed articles or publications by  
12           him prior to their publications? I know you  
13           mentioned you were a book review editor.

14   A.    Not as a book review editor, but I have reviewed  
15           articles by him prior to their publication.

16   Q.    Now, in Exhibit 48, you cite a published article,  
17           Rossmiller's 1983 Resource Allocation and  
18           Achievement, in a book called "School Finance and  
19           School Improvement," Ballinger Press, Cambridge.  
20           It's Page 175.

21   A.    Yes.

22   Q.    Do you recall that, it's Footnote 18?

23   A.    I do.

24   Q.    And Footnote 19, you cite Dr. Rossmiller again,  
25           Pages 175 to 176. And I presume --

1 A. I beg your pardon, pages 170 -- oh, the pages I've  
2 cited. I beg your pardon, I misunderstood.

3 Q. Pages 175 to 176 in Dr. Rossmiller's article.

4 A. Yes, uh-huh.

5 Q. You've read that study, that article?

6 A. Yes, yes.

7 Q. Do you recall that in that article, Dr. Rossmiller  
8 stated that, "When measures of central tendency are  
9 used as measures of input or output, the true impact  
10 of specific school resources is nearly always  
11 disguised."

12 THE COURT: Say that again, please.

13 Q. "When measures of central tendency" --

14 THE COURT: Of what? At the central  
15 tendency?

16 Q. I was going to ask Dr. Verstegen what that meant.  
17 "When measures of central tendency are used as  
18 measures of input or output, the true impact of  
19 specific school resources is nearly always  
20 disguised."

21 A. I don't recall that specific statement, but if you're  
22 reading it, fine. Dr. Rossmiller's research, if I  
23 can characterize it in a nutshell, and a good number  
24 of other researchers in school finance are looking at  
25 not the disparity or the equality of resources



1           between districts in a state, but the equalities  
2           between schools within a district. And so, trying to  
3           find the answer of the differences in resources in  
4           the schools within the one district, if you're  
5           looking at a statewide measure, you won't be able to  
6           find that measures of central tendency, a mean, for  
7           example. If we took the mean of what everybody spent  
8           for breakfast, we would get one number. It would be  
9           hard to tell what the actual differences were between  
10          individuals in this room in that expenditure.

11       Q.    Is that what he means by "central tendency?"

12       A.    Aggregate -- I don't think I can tell you what Dr.  
13           Rossmiller means by "measures of central tendency." I  
14           could give it some further thought. I do know that I  
15           worked as a research assistant to him on this school  
16           level research for many years and that's where I'm  
17           getting this notion from.

18       Q.    Just to see if I understand --

19       A.    We even went further and looked at the delivery of  
20           resources in a school, once they get to the school,  
21           and the disparity in the classroom --

22       Q.    Uh-huh.

23       A.    -- in actually allocating those resources to the  
24           students in that room.

25       Q.    Would it be fair to say -- and this is my lay

understanding, I just want to know whether it's on the right track. That there are many different levels of potential disparity, or potential inequity that one could then look at, isn't that correct?

A. There are potentially a whole range of limitless possibilities of what one might look at, depending on what the question is. Now, given -- once the question is phrased --

Q. Uh-huh.

A. -- then many times there's a body of knowledge that's grown up in how to approach that specific question. His question and in Murnane and some others that have followed that line of questioning, look at actual resource allocation right in the schools and between schools within a district. So -- hence, one would have difficulty looking at that using statewide -- a statewide measure. You can't get to the classroom. It looks -- does divide things up by classrooms.

Q. Is it your understanding that that's what Dr. Rossmiller was driving at when he said, "the true impact of specific school resources is nearly always disguised."

A. Now, what is that? May I see that article?

Q. Yes.

MR. PEREZ-BUSTILLO: May I approach the

1 witness?

2 THE COURT: Yes, sir.

3 A. Now, where is it?

4 Q. What I'm trying to get at, Dr. Verstegen, is your  
5 understanding --

6 A. Here is what he -- he explains it right in the next  
7 sentence. "If, for example, some types of teachers  
8 are effective with the same types of pupils," I think  
9 that's a typo, "with some types of pupils, but  
10 ineffective with others, an analysis based on school  
11 or system mean scores is likely to disclose no  
12 effect." You see, if you look at the average, that  
13 was what I was using --

14 Q. Uh-huh.

15 A. -- the average test score for the school, you're not  
16 going to find differences for each of those  
17 classrooms.

18 Q. Uh-huh.

19 A. So you won't be able to tell the effectiveness or  
20 ineffectiveness of a particular teacher. Or, if you  
21 want to even go further, teachers, sometimes within  
22 classrooms, you break it down and they're better with  
23 the groups of students that are right on grade level.

24 Q. Uh-huh.

25 A. Or maybe some are better with some below grade level,

1 or above grade level, or some are better in reading  
2 with one of those three or so forth. So depending on  
3 what your question is, depends on what measures you  
4 use. That's why there's a body of research that  
5 builds up around how to address certain questions.  
6 And just pulling a certain methodology out of one's  
7 pocket is not well-respected, because these have been  
8 given much, much thought, over time. And that's what  
9 he's talking about right here, I believe, as he  
10 explains it.

11 Q. Again, just to see if I understand, because you're  
12 going to be dealing and we were dealing yesterday  
13 with lay persons in this area, you're the expert.  
14 But there's a difference, then, between looking at  
15 disparities or the extent to which resources make a  
16 difference or don't make a difference. If you're  
17 looking at a particular high school in a particular  
18 district, or even within that high school, perhaps,  
19 then if you're looking at larger levels -- macro  
20 levels --

21 A. Well, I think he's calling resources here, for  
22 example, he's talking about many other things here, I  
23 think, than what you might be referring to as  
24 resources. So before you draw a conclusion, I think  
25 you have to back up and define your terms.

1 Q. I was about to do that, actually.

2 A. Okay.

3 Q. And Dr. Rossmiller was about to do that. That's just  
4 the beginning of his article.

5 A. That's the line of thinking.

6 Q. The next question, in fact, was about a --

7 A. Is that the article that I've cited, by the way?

8 Q. Yes, it is.

9 A. Okay.

10 Q. He goes on into the body of the article and he talks  
11 about what he defines as "A Schema for Studying  
12 Classroom Resource Use."

13 A. For studying classroom resource use?

14 Q. Yes.

15 A. Uh-huh.

16 Q. And he says the following: "A school system draws  
17 its resources from the community in which it is  
18 embedded and deploys these resources to individual  
19 schools and thence to classrooms within each school.  
20 There is considerable evidence substantiating the  
21 view that a community's socioeconomic  
22 characteristics, values, attitudes and expectations  
23 bear a significant relationship to the outcomes of  
24 schooling." Do you agree with that, Dr. Verstegen?

25 A. Do I agree with attitudes, and so forth, of the

1 community bearing a relationship to the outcomes of  
2 schooling?

3 Q. And that a school system draws its resources from the  
4 community in which it is embedded and that  
5 considerable evidence substantiates the view that a  
6 community's socioeconomic characteristics bear a  
7 significant relationship to the outcomes of  
8 schooling?

9 A. I think in independent school districts, that's true.  
10 I don't know about fiscally dependent school  
11 districts, if that's so true.

12 Q. Now, Dr. -- I'm sorry.

13 A. But Texas, in a Texas context, I -- yes, I see  
14 nothing wrong with that statement.

15 Q. And you were citing Dr. Rossmiller in a Texas  
16 context, isn't that correct, that's in the body of  
17 Exhibit 48?

18 A. Well, a broader taxing authority, a fiscally  
19 dependent school district --

20 Q. Uh-huh.

21 A. -- is quite unusual in the United States. So, I was  
22 more or less referring to the United States in  
23 calling that an exception.

24 Q. But this is the study that you cited in Exhibit 48,  
25 isn't that correct? Resource Allocation and

1           Achievement?

2   A.    Yes.

3   Q.    Dr. Rossmiller then goes on to talk about a second  
4           major component. He laid out first, the community  
5           component, the one we were just discussing. Then, he  
6           lays out a second major component of his schema, or  
7           scheme. And he says that it "consists of the  
8           individual school and the classroom." And then he  
9           goes on to say, "This component is further subdivided  
10          into two elements -- resource inputs and resource  
11          applications." Then he goes on to define each of  
12          those elements. "Resource inputs may, in turn, be  
13          grouped into two major categories -- human resources  
14          and material resources. Human resources include  
15          students, teachers, administrators and other  
16          supporting personnel. Material resources include the  
17          school building and equipment, instructional media  
18          and learning aids and all of the paraphernalia  
19          employed in the instructional process. All these  
20          have potential for affecting schooling outputs." Then  
21          he cites Murnane, 1975 --

22   A.    That's what we were talking about.

23   Q.    -- Summers and Wolf, 1975; and Thomas, 1962.

24   A.    Yes, he does. And he does say they have a potential.  
25          But among his conclusions, as cited in my study, on

1       Page 175 he says, and I quote, "Among the variables  
2       that do not appear to be related closely to student  
3       learning outcomes are level of spending per pupil,  
4       quality of buildings, average school or class size,  
5       and the organizational structure of the school." So  
6       the potential may be there, but they don't relate.  
7       They don't relate, according to Rossmiller in that  
8       article.

9   Q.   But you didn't cite Dr. Rossmiller for the potential  
10       relationship between human resources, material  
11       resources, and educational outcome, did you?

12  A.   I thought that that was included by the fact that he  
13       treated them here. I gave his conclusion.

14  Q.   Uh-huh. And there's several different aspects to his  
15       conclusions, isn't that correct?

16  A.   I'm sure there must be. But his conclusion, with  
17       regards to the point you just raised, Counselor, is  
18       the one that I read.

19  Q.   Turning your attention to the footnotes that you  
20       used, Footnotes 18 and 19, in Footnote 19, you  
21       referenced Pages 175 to 176, is that correct?

22  A.   Yes.

23  Q.   And if I told you that the statement I just read to  
24       you was from Page 174, would that surprise you?

25  A.   No, I would assume a conclusion would follow the



1        rationale for looking at those different variables or  
2        factors. I wish I could have made this longer. I  
3        could have included virtually the whole paper as an  
4        appendix. But I thought that if I cited it in full,  
5        anyone would be able to go and read it all. And I  
6        cited the conclusion, which seemed relevant. So  
7        there -- a vast world of potentialities, but what do  
8        we know from those potentials and their relationship  
9        to student achievement right now? And what have we  
10       learned over time? And someone especially that's  
11       considering so many variables at so many levels, I  
12       thought it would be important to include that  
13       conclusion. But I was limited for space, in terms of  
14       not being able to actually reproduce the entire  
15       document of everything I cited. And I guess that's  
16       the purpose of a citation, that therefore, anyone can  
17       find it.

18    Q.    Uh-huh. And if I further told you, that on Page 176,  
19       following that which you cited in Exhibit 48, Dr.  
20       Rossmiller further concludes that his "finding does  
21       not imply that the amount of money available per  
22       student is unimportant. Rather, it indicates that  
23       money is a necessary, but not a sufficient, requisite  
24       for student academic achievement?"

25    A.    I'm not surprised. And I don't see how that differs

1 with my own conclusions on that subject.

2 Q. So you would agree with that sentence?

3 A. I would agree that a basic level of support is  
4 important.

5 Q. And if I then called your attention to the very end  
6 of the article, to Page 189, the last page of the  
7 article is Page 190. And it just has two sentences  
8 on it. At Page 189, Dr. Rossmiller again reaches  
9 that stage of recapitulations and/or conclusion, and  
10 he says, "To summarize, in response to the question  
11 'do resources make a difference in student academic  
12 achievement?' The answer is, 'it all depends.'  
13 Certainly resources are necessary. Money is  
14 important because without money, it is impossible to  
15 acquire either human or material resources." Do you  
16 recall that conclusion?

17 A. Do you see how that supports what we just discussed?

18 Q. Do you recall that conclusion?

19 A. Perhaps. He says it's not the level, it's how  
20 they're used.

21 Q. Did you cite --

22 A. That's his basic conclusion, overall conclusion.  
23 It's not the level of resources, but it's how you use  
24 the resources.

25 Q. You didn't cite Page 189, did you?

1 A. I didn't cite every page. I didn't cover every  
2 single sentence.

3 Q. And you didn't cite his concluding paragraph in which  
4 those words were found, did you?

5 A. May I see that entire conclusion now?

6 MR. PEREZ-BUSTILLO: May I approach the  
7 witness?

8 THE COURT: Yes, sir.

9 A. Well, the very next sentence after that says,  
10 "Whether those resources are used effectively and  
11 efficiently will depend primarily on the teachers and  
12 the principals who are at the cutting edge of the  
13 educational process." That it's not the level, it's  
14 how they are used. I believe I did represent that  
15 overall idea.

16 Q. But you didn't cite any portion of that passage, did  
17 you?

18 A. I felt it was covered in what I did cite here.

19 Q. Now, if I'm not mistaken, you also cited the Clark,  
20 Lotto and Astuto paper in Footnote 20 and I believe,  
21 even earlier.

22 A. I see it in Footnote 11.

23 Q. Once in Footnote 11 on Page 99. That's Clark, D.L.,  
24 Lotto, L.S., and Astuto, T.A., 1984. Effective  
25 Schools and School Improvement, a comparative

1       analysis of two lines of inquiry in the Educational  
2       Administration Quarterly. Do you recall that study?

3     A.    Yes, I do.

4     Q.    And that you then cite it again on Page 101 at  
5       Footnote 20?

6     A.    Yes.

7     Q.    Did you read that study?

8     A.    Yes, I did.

9     Q.    Do you recall a section in their article regarding  
10       the role of resources?

11    A.    I do.

12    Q.    Do you recall their statement as follows: "People  
13       and dollars affect the success of school improvement  
14       efforts. More recent studies have found difficulty  
15       in establishing any relationship between dollars and  
16       effective change efforts. That seems an almost  
17       equally naive conclusion. The research is clear that  
18       external facilitators, internal facilitators,  
19       materials, time for teacher planning and interaction,  
20       and time for teachers to implement the innovations,  
21       are all important components of a successful school  
22       improvement program," and that "these conditions all  
23       require the expenditure of funds," that "additional  
24       resources for education reform provide the margin for  
25       implementation support in many school districts." Do

1           you recall that?

2       A.    I believe in the context of the article, that I've --  
3           that that is not at odds with what Purkey and Smith  
4           said, which I've -- which we've discussed, nor what I  
5           have said, that a new project, a new school  
6           improvement project, can't spring like the Phoenix  
7           from nowhere without an additional penny. That --

8       Q.    You didn't cite the language I just read in your  
9           article, did you?

10      A.    I did not quote the entire article, in that I tried  
11           to limit the size of the paper. I don't see that I  
12           cited that exact language out of context, like it is.

13      Q.    In fact, you cited them twice in other ways. But you  
14           did not cite the language I just read to you, isn't  
15           that correct?

16      A.    I don't believe I did cite that specific language.

17                   MR. PEREZ-BUSTILLO: I have nothing further  
18           right now.

19                                   CROSS EXAMINATION

20   BY MR. KAUFFMAN:

21      Q.    Dr. Verstegen --

22      A.    Excuse me, may I just take a look at that article at  
23           the break?

24                   MR. PEREZ-BUSTILLO: Yes.

25                   THE WITNESS: Thank you.

1 BY MR. KAUFFMAN:

2 Q. Dr. Verstegen, you have spoken with us at some length  
3 about correlations, is that right?

4 A. We have discussed correlations.

5 Q. And will you agree with me that correlations range  
6 from minus one to plus one?

7 A. Yes.

8 Q. So that on a scale here -- scale of minus one to plus  
9 one for correlation, is that correct?

10 A. Yes.

11 Q. Zero is in the middle, which shows no relationship,  
12 is that correct?

13 A. Yes.

14 Q. Minus one shows a perfect negative relationship  
15 between two things, is that right?

16 A. Yes.

17 Q. Plus one shows a positive relationship between two  
18 things, is that right?

19 A. Yes.

20 Q. So, any correlation that we look at should be viewed  
21 on a scale from a minus one to a plus one, shouldn't  
22 it?

23 A. I'm not sure what you mean by a scale, but if you  
24 would like to look at it on a scale.

25 Q. Okay. If we put a .5, for instance, a plus .5, this

1 fits here between minus one and plus one, is that  
2 correct?

3 A. It does.

4 Q. Okay. And similarly, plus .75 is over here, is that  
5 correct?

6 A. It is.

7 Q. Okay.

8 A. I see --

9 Q. Excuse me, is that correct?

10 A. It is.

11 Q. Okay. Thank you.

12 When you were talking about correlations, you  
13 mentioned not only a correlation number like .5 or  
14 .6, but the square of the correlation also, is that  
15 correct?

16 A. Yes.

17 Q. Okay. And I think you mentioned that, for instance,  
18 if you had a correlation of .7, it's also important  
19 to square that number, to multiply .7 by .7, and I  
20 guess, get .49, is that correct?

21 A. I'm not sure if I said it's important to square it.  
22 I think it gives additional information.

23 Q. Okay. And the additional information it gives, is in  
24 your testimony, a prediction of the amount of  
25 variation predicted. One thing to the other, is that

1 right?

2 A. Yes.

3 Q. Okay.

4 A. The amount of variation that can be predicted --

5 Q. So, if we have a correlation of .7 --

6 A. -- by a factor.

7 Q. Excuse me. If we have a correlation of .7 and we  
8 square it, we get .49, is that correct?

9 A. It is.

10 Q. .49, of course, is less than .50, is that right?

11 A. It is.

12 Q. Okay. And was it your testimony that if you have an  
13 r squared, if we can call this an r squared, is that  
14 a correct terminology?

15 A. Yes.

16 Q. Okay. If we have an r squared of minus .50, is your  
17 testimony that this relationship, correlation,  
18 predicts less than half of the variance between the  
19 two, is that right?

20 A. Yes.

21 Q. And that that would be less useful than flipping a  
22 coin to determine the relationship between the two,  
23 is that right?

24 A. Well, if it was 50 percent, you could flip a coin.

25 Q. Okay.



1 A. To say, should we -- yes.

2 Q. Okay. If it's .49 then, and you're trying to --  
3 well, let's say you have -- I don't know, size versus  
4 weight. You're relating size and weight of young  
5 children, okay? That was one of the examples you  
6 used for correlation, I think, is that correct?

7 A. Yes, sir.

8 Q. Is that correct? Okay.

9 A. Or else it might have been age, but that's fine, size  
10 and weight.

11 Q. If the relation between size versus weight, the  
12 correlation is .7, then the correlation squared is  
13 .49, is that correct?

14 A. Yes.

15 Q. Okay. So are you saying then, that the -- if there's  
16 a correlation of .7 between size and weight, that the  
17 size of a person does not predict the weight of a  
18 person any better than flipping a coin, is that  
19 right?

20 A. Well, no, I don't know if I said that, because  
21 causality under a correlation is very hard to  
22 determine. So it doesn't determine a direction.  
23 That's why you do a regression. That's why you  
24 actually do go through the trouble of regressions and  
25 most of the bivariate regressions, it also gives you

1           an r square. So you can't determine causality, you  
2           just have these two variables in a correlation. Do  
3           they move together? Do they not move together? Does  
4           one go up when the other goes down? You can't say  
5           one causes the other one. You can just say they're  
6           moving in tandem or they're not.

7       Q.    Okay. Well, what does this r squared mean to you?  
8           The correlation of the square, because you talked  
9           about those at length, yesterday, as I recall.

10     A.    An r squared?

11     Q.    Uh-huh.

12     A.    The variance that can be predicted --

13     Q.    So then, if I understand you correctly, you get --

14     A.    -- by one or the other.

15     Q.    By one or the other?

16     A.    You can't determine a direction unless you actually  
17           do a regression.

18     Q.    Okay. I understand. So then size, either size  
19           predicts 49 percent of the variance with weight, or  
20           weight predicts 49 percent of the variance with size  
21           then, is that correct?

22     A.    Not much can be predicted in that relationship by  
23           those variables.

24     Q.    Okay. And that predictive relationship, either way,  
25           is no better than flipping a coin, is that right?

1 A. Exactly.

2 Q. Okay. Now, if we had a correlation of .52, if you'll  
3 go with my math --

4 A. That might be a lay explanation.

5 Q. Okay.

6 A. Is that okay?

7 Q. Is it correct, in your interpretation?

8 A. I think it gets at the general idea.

9 Q. Okay. If we can do a -- if we have a correlation of  
10 .53 and we square that, we get .28. Will you go  
11 along with my math here for a second?

12 A. I'll go along with it, sure.

13 Q. Okay. So then, the predictive power, if two things  
14 related with each other with a correlation of .53,  
15 the predictive power is .28, the r squared, is that  
16 right?

17 A. We'll say the r squared is .28.

18 Q. And that's significantly below the .50 we talked  
19 about, is that right?

20 A. Well, now here, you're talking significance.

21 Q. Excuse me, I apologize. That is a lot below .50,  
22 isn't it?

23 A. It's -- at one point, it looks like it's close to  
24 being half below .50. It would be .25 then.

25 Q. Okay. So you would interpret this to mean that if

1 two things related with a .53 correlation, that one  
2 -- knowing one, you can't really predict the other  
3 one at all, is that right?

4 A. That the r squared is really quite low. That is, the  
5 causality can't be implied, unless the actual  
6 regression is done.

7 Q. Okay. But in terms of -- without mentioning  
8 causality for a second, just the relationship between  
9 the two, then. One of the variables is only related  
10 to -- only predicts 28 percent of the variation of  
11 the other, or vice versa then, is that right?

12 A. I guess you'd say that r square shows that it has low  
13 predictive power, uh-huh, sure.

14 Q. Again, that would be, I guess in this case, a lot  
15 worse than flipping a coin, as far as predicting one  
16 to the other, is that right?

17 A. It's -- the idea flipping a coin, is that a number of  
18 random samples, half the times you'll get heads and  
19 half the time you'll get tails.

20 Q. Uh-huh.

21 A. So predictively, it's half the time, or 50 percent of  
22 the time you get one and 50 percent of the time you  
23 get another.

24 Q. But in this case --

25 A. That's the idea there. So that is less than a 50

1           percent...

2   Q.    Chance?

3   A.    I -- I don't -- if I knew the specific example you  
4           were embedding this in, I could perhaps provide a --

5   Q.    Well, let's talk about size and weight for a second.

6   A.    Okay.

7   Q.    Let's say the relationship between size and weight  
8           was .53. I didn't spell weight right, did I? Size  
9           and weight correlation is .53. That, squared, is  
10          .28. What does this .28 tell us about the  
11          relationship between size and weight?

12   A.    That very little of the variance can be predicted.

13   Q.    Very little of what variance?

14   A.    Well, an  $r$  square that you're multiplying like that,  
15          you haven't run the bivariate regression, even though  
16          they should be a very similar answer, I would expect.  
17          But that it predicts -- that it has low  
18          predictability. That if you're looking at one in  
19          relation to the other --

20   Q.    Uh-huh.

21   A.    -- that relationship between the two variables, the  
22          difference -- let me see how I could best explain  
23          that. That it predicts very little of the variance.

24   Q.    Okay. Well, yesterday, as I recall, you were asked  
25          at length about  $r$  squares in terms of correlations

1           between operating expenditures and test scores. And  
2           there were some very low  $r$  squares and you said that  
3           shows basically no relationship between the two?

4   A.   No relationship? I think the correlation would show  
5           no relationship --

6   Q.   Okay.

7   A.   -- but the  $r$  squared shows how much variance can be  
8           predicted.

9   Q.   Okay. Can you give us, then, a lay definition in  
10          terms of size and weight, if the correlation is .53,  
11          that the correlation squared is .28, what does that  
12          mean in lay language?

13   A.   The .53? If you call that a strong or a medium  
14          moderate correlation.

15   Q.   Uh-huh.

16   A.   That there's -- the relationship is a strong moderate  
17          relationship.

18   Q.   Okay.

19   A.   They move together. That the  $r$  squared shows that 28  
20          percent of the variance can be predicted by the  
21          variable.

22   Q.   And again, that 28 percent of the variance is what  
23          you said is less than flipping a coin, is that right?

24   A.   Well, 28 percent, the predictability.

25   Q.   Uh-huh.

1 A. Whereas if you flipped a coin, you could predict that  
2 half you would get heads, and half you get tails,  
3 would be the .50.

4 Q. Uh-huh.

5 A. So, .20 is lower.

6 Q. Lower than that, okay.

7 Now, one of the correlations we talked about  
8 yesterday, was correlation between wealth and  
9 revenues. And it was .60, is that correct?

10 A. I can check that if you would like.

11 Q. Okay.

12 A. Yes.

13 Q. Okay. What was your interpretation of that .60  
14 correlation between wealth and revenue?

15 A. That it was moderate, or a strong moderate  
16 correlation. That it was further explained in terms  
17 of the magnitude of the relationship, so we knew the  
18 two values moved together. But in terms of the  
19 magnitude of the relationship, it was found it was a  
20 very small movement. That's where I used the  
21 relationship of age and weight. Whereas the  
22 relationship between age and weight, as you go up in  
23 age, you may gain more weight. As a child, might be  
24 moderate to strong.

25 Q. Uh-huh.

1 A. Let's say folks over 50. I don't know if this is  
2 true, and I certainly don't mean to offend anyone.  
3 But as you go up in age over 50, you also gain  
4 weight. Let's say your metabolism slows down, or  
5 whatever. Now, as a child, each year you gain a lot  
6 more weight. You're increasing in size and weight.  
7 You may be gaining 20, 30 pounds a year. As an older  
8 adult, you may be gaining half a pound a year. So,  
9 these variables are moving together and you could  
10 very likely get the same correlation. You don't know  
11 what the magnitude is unless you look at the slope  
12 and the elasticity, which tell you that.

13 Q. Okay.

14 A. The slope tells you the size of that angle at which  
15 the correlation moves, and if it's flat, or if it  
16 goes up, or whatever.

17 Q. Okay. Let's go back to, I guess, the districts here.  
18 There are 1,063 districts. You found the  
19 relationship between the wealth of the district and  
20 the revenue of the district as .60. That's a  
21 moderate, or strong moderate relationship, is that  
22 correct?

23 A. Yes.

24 Q. If you square that .60, you get .36. What does that  
25 .36 mean? The  $r$  squared is .36. You talked about



1           that yesterday; what does that mean?

2       A.    Okay.  The independent variable property value --

3       Q.    Uh-huh.

4       A.    -- is being regressed on the dependent variable, or  
5           the y.  In the actual formula, y equals a plus bxl,  
6           or bxl is the property value and y is what you're  
7           trying to predict, it's the revenue.  So you're  
8           saying how much variance -- you're saying, "Look at  
9           the difference in revenues between students in the  
10          State of Texas.  What causes that difference?  Can we  
11          predict what is making a difference in this revenue?"  
12          So we say, "Oh, perhaps it is the wealth of the  
13          district that makes a difference in the dollars that  
14          are available to be spent."  So we check this out for  
15          the entire state to see if a single example might be  
16          true in the broader case.

17      Q.    And you found that it was true in this case.  You  
18          found a .60, is that right?

19      A.    No, no, I am describing a regression --

20      Q.    Okay.

21      A.    -- not a correlation.

22      Q.    All right.

23      A.    A correlation can be insignificant of the slope.  And  
24          the -- it can be -- have very little meaning if the  
25          slope and the elasticity are small.

1                   And Bob Berman gives the case of Florida, where  
2                   they had a correlation of .778 and a slope of .19.

3       Q.     Uh-huh.

4       A.     Here, we have a correlation of .60 lower and a slope  
5               much lower, .0010. So that in that case, there could  
6               really not be a relationship there, because it was of  
7               such low magnitude. This is where just using several  
8               measures is useful. So in the case of getting back  
9               to the regression, not the correlation, he found that  
10              .36 or .38, depending on which tax year value, the  
11              difference there is very slight.

12      Q.     Yeah.

13      A.     Your use could be predicted. So less than 40 percent  
14              of the differences could be predicted. So if you  
15              were going to try to predict it, if you flipped a  
16              coin, you would at least get heads 50 percent of the  
17              time. This was less than 40 percent of the time,  
18              there in my analogy with the coin.

19      Q.     Okay. Dr. Verstegen, I think one of the analyses you  
20              looked at was something called -- did you do  
21              enrichment equalization aid? Did you consider that  
22              variable when you did your list of the variables?

23      A.     With the correlation?

24      Q.     Yes.

25      A.     I did look at it alone, although I cautioned that it

1           was only part of the total picture of state and local  
2           revenue in the State of Texas.

3       Q.   Is it your understanding that enrichment equalization  
4           aid is supposed to go to poor districts to help them  
5           have enough money to spend on their programs?

6       A.   Well, at least districts under 110 percent of state  
7           average property wealth. I don't know if someone at  
8           110 percent of the average is poor. But at any rate,  
9           the lower end of the distribution. From a little  
10          above the middle, to the lower.

11      Q.   Okay. But the pattern is, as I recall from other  
12          testimony, that the poorer the district, the more  
13          equalization aid they get, is that your  
14          understanding?

15      A.   That is my understanding.

16      Q.   Okay. Will you look on Page 28 of your report,  
17          please? And you have Table 3.1, Defendants' Exhibit  
18          48, Page 28. Did you find a correlation between  
19          wealth and equal enrichment per pupil?

20      A.   Excuse me, please, I'm looking that up. Okay.

21      Q.   Sure. Page 28.

22      A.   On Page 28?

23      Q.   28, yes, ma'am, far left-hand column, wealth, bottom  
24          figure.

25      A.   Yes, I did.

1 Q. Okay. Did you there find a correlation of  
2 approximately minus .53?

3 A. Yes.

4 Q. So, in your figures, the relationship between wealth  
5 and equal enrichment, or enrichment equalization is --

6 A. That should have a period there, equalization  
7 enrichment per pupil and the inverse relationship.

8 Q. Okay. I'm sorry, I'm not trying -- are you through?

9 A. Yes.

10 Q. Okay. Then according to your exhibit here, Table 3.1  
11 on Page 28, the relationship between wealth and  
12 enrichment equalization aid is minus .53, is that  
13 right?

14 A. Yes, it is.

15 Q. Okay. And if you square that minus .53, you get  
16 about .28 as the r squared for the relationship  
17 between wealth and enrichment equalization aid, is  
18 that right?

19 A. What did you get for your square?

20 Q. Okay. Square of minus .53 squared, whatever it is.

21 A. Okay.

22 Q. All right.

23 A. It's about .28.

24 Q. Okay. So, the r squared relationship between wealth  
25 and enrichment equalization aid is .28, is that

1 correct?

2 A. Yes.

3 Q. Okay. If you'll look back at your paper, Dr.  
4 Verstegen, I think we used -- if you look at Page 10  
5 for a second, please. Okay. Excuse me, on Page 9,  
6 first, excuse me. On Page 9, the teachers' salary  
7 information that you used is for the '84-'85 school  
8 year, is that correct?

9 A. Yes, it was the most recent available at the time,  
10 uh-huh.

11 Q. On Page 10, you talk about adjusted weighted pupils.  
12 It's my understanding what you're doing there, is  
13 that you have found the total revenue for a district,  
14 let's say \$4,000.00 per student, is that right? As a  
15 total revenue, let's say.

16 A. Are we going to walk through the methodology, is that  
17 it?

18 Q. No, I'm just trying to summarize it if I could.

19 A. Rephrase it.

20 Q. Here is my point.

21 A. Okay.

22 Q. I mean, \$4,000.00 would be the total revenue, state  
23 and local revenue figure of some sort, is that right?

24 A. You could have \$4,000.00 be a total state and local  
25 revenue, yes, Counselor.

1 Q. Fine. And you went through some formulas with  
2 adjustments for weights, and dividing by PDI. You  
3 did several things which I'm not going to describe  
4 here. But you came up with something called an  
5 adjusted revenue figure of less than \$4,000.00.  
6 Let's say \$3,000.00, is that right?

7 A. Given that we subtracted off transportation and the  
8 district had transportation, it would be less.

9 Q. Okay.

10 A. Or one of the other, Price Differential Index  
11 adjustment and so forth.

12 Q. I understand.

13 A. Uh-huh.

14 Q. Generally, do you feel that adjusting for the cost of  
15 educating different types of kids, and for the PDI,  
16 and small and sparse, on your figures, is a valid way  
17 of analyzing the information for school finance in  
18 Texas?

19 A. I think anywhere in the United States, that's a valid  
20 way. And it shows the results of what research says  
21 needs to be done --

22 Q. Okay.

23 A. -- in terms of adjusting for students.

24 Q. Okay. Now, in your figure, though, I just -- as  
25 we're going through this, I want to be able to have

1           this in mind when we talk, so that the record is  
2           clear. If you have a revenue, let's say the real  
3           dollars going to the district in revenue might be  
4           \$4,000.00. But after you adjust them, according to  
5           your formulas, you might end up with a figure for  
6           that district of \$2,500.00, is that right?

7   A.    I don't know if the change would be that dramatic,  
8           but you would end up with a different number.

9   Q.    Okay. Would that number be lower?

10   A.   It would most likely be lower, because if you're  
11          paying additional money for the very same thing, some  
12          kids cost more to educate, for example. And you  
13          wouldn't want to -- take a district with a lot of  
14          special ed. kids and everything else virtually the  
15          same, and say the distribution of revenue is unfair  
16          to that district, because they're getting more money.  
17          Because that's a vertical equity idea that they  
18          should be getting more money. So you want to be sure  
19          that you're not measuring these vertical equity needs  
20          when you measure the differences in dollars.

21   Q.    Okay. But using your analysis, if you had the actual  
22          dollars of revenue going to the district of  
23          \$4,000.00, you're going to end up -- per ADA, you're  
24          going to end up with an adjusted figure of less than  
25          \$4,000.00, aren't you?

1 A. I would think so, yes.

2 Q. One of your figures was to divide by the Price  
3 Differential Index, is that right? Is that part of  
4 your formulas?

5 A. Yes, it is.

6 Q. Okay. Now, as I understood your paper, you divided  
7 by something called the "Proposed Price Differential  
8 Index." That was before the State Board of Education,  
9 is that correct?

10 A. Yes.

11 Q. Okay. Now that Proposed Price Differential Index is  
12 not the one that was actually in place in 1985-'86,  
13 though, is that right?

14 A. No, it wasn't.

15 Q. Okay. And in fact, that Proposed Price Differential  
16 Index was not approved by the State Board of  
17 Education, is that right?

18 A. It wasn't selected.

19 Q. It wasn't selected, excuse me. So the numbers you  
20 used in your formula for Price Differential Index are  
21 not the correct ones that are actually used in the  
22 formulas of the State of Texas in '85-'86, is that  
23 correct?

24 A. I was trying to get at the true differences in the  
25 cost of education across the state, rather than a



1 formula which is adjusted. I used the raw data, not  
2 the adjustments the state board then makes to the  
3 formula. It caps it and it provides a floor, so that  
4 no one can get below one. But at least more recent  
5 data, '85-'86 data, these are '85-'86 that I'm  
6 looking at here.

7 Q. But the data --

8 A. So I was trying to get at the true real costs between  
9 districts by using a more recent measure and not  
10 using any of the adjustments the State Board of  
11 Education utilizes.

12 Q. In terms of the PDI, though, you have '85-'86 revenue  
13 figures and you divided by a PDI that was not  
14 actually in use in 1985-'86, is that correct?

15 A. It was based on 1985-'86 data. The one that was  
16 adjusting for differences in purchasing -- in the  
17 purchasing power of the dollar was '83-'84 data. So,  
18 what I did, was I made it relevant to the time that I  
19 was looking at by utilizing a more comprehensive and  
20 valid index.

21 Q. Okay. Dr. Verstegen, do you know whether the PDI  
22 that you used in your analysis for '85-'86 was  
23 actually the one in use in Texas for '85-'86?

24 A. I don't believe that it was in use.

25 Q. So the numbers that you use in your analysis for



1        bonds that might have been bought last year, or the  
2        year before, or the sum of its bonds, of the debt  
3        service goes to pay off those bonds, that is correct?

4        A.    For capital construction projects, yes.

5        Q.    Dr. Verstegen, if we go to the next section of your  
6        study, the baseline data on Page 26 --

7        A.    Yes.

8        Q.    -- under correlations. When you did these  
9        correlations, you compared the unadjusted revenues of  
10       school districts to the actual student counts, is  
11       that correct?

12       A.    Yes.

13       Q.    So, by the unadjusted revenue, I guess that's what I  
14       was talking about earlier. That's just the total  
15       revenue, I guess, of the district. State and local  
16       revenue of the district before you adjust for the  
17       weights and the PDI and all of that, is that correct?

18       A.    Yes, so the revenue variables weren't adjusted for,  
19       and therefore, may tend to overestimate relationships  
20       with regards to equity, as we discussed previously.

21       Q.    Okay. I'm sorry, I didn't understand. Which might  
22       tend to overestimate? Can you repeat that for me?

23       A.    The unadjusted.

24       Q.    The unadjusted might overestimate?

25       A.    Yes.

1 Q. And the unadjusted revenue might overstate what?

2 A. Perhaps we should say the unadjusted revenue  
3 variables utilized in the correlation are not  
4 relevant for equity purposes.

5 Q. But before, you said overestimate. Is that -- is  
6 that incorrect language, or irrelevant language? I  
7 mean, what you're trying to say is variables are not  
8 -- the unadjusted revenue variables are not relevant  
9 for equity purposes. You just said that, correct?

10 A. Yes, there's a set of correlations. I indicated that  
11 the Foundation School Program elements, including --  
12 oh, excuse me, that's the wrong one. There's a set  
13 of variables wherein I break down the revenue into  
14 local and state and so forth. And those were not  
15 adjusted. So therefore, they would -- should not be  
16 utilized in equity analysis.

17 Q. Okay. But you're not saying that using the  
18 unadjusted revenue figures would either underestimate  
19 or overestimate certain relationships, are you?

20 A. I think we can leave it at that final statement,  
21 because I haven't looked at every single instance of  
22 correlation, both with and without adjustments. So,  
23 I haven't made a detailed study to say that it always  
24 will overestimate the relationships. So I'd just as  
25 soon say that it may -- it should not be used for

1 equity purposes.

2 Q. Okay. But you're not saying that the unadjusted  
3 revenue figures will overestimate the relationships  
4 for equity purposes, are you?

5 A. No, I would stand by the last statement. I can't be  
6 sure of every instance.

7 Q. Okay. You also use actual student counts. So the  
8 actual, I guess that's refined ADA counts, rather  
9 than weighted students, or any of that?

10 A. Yes.

11 Q. Okay. If you look on Page 27 of your study, about  
12 wealth in the first paragraph, was your finding on  
13 the relationship between wealth and certain other  
14 variables, that it was found that wealthy districts  
15 are moderately related to higher operating revenue  
16 per pupil, teachers' salaries, local enrichment per  
17 pupil, local, local and state per pupil revenue.  
18 Those things are related to wealth at a moderately  
19 -- at a moderate level, is that correct?

20 A. Yes.

21 Q. And you, in the next paragraph, you found that a  
22 moderate relationship was found between wealth and  
23 operating costs, is that correct?

24 A. Yes.

25 Q. And wealth and total revenue, is that correct?

1 A. Yes.

2 Q. Okay. Is it correct that the relationship between  
3 wealth and total revenue is stronger than the  
4 relationship between wealth and operating costs?

5 A. Yes.

6 Q. If we can now look at Page 28. On Page 28, you have  
7 shown us a relationship for every district in the  
8 state, between some variables on the top and other  
9 variables on the side, is that correct?

10 A. Exactly.

11 Q. Okay. Now, when we're talking about positive and  
12 negative correlations, is it generally true that if  
13 you have a negative correlation that shows,  
14 generally, as one factor goes up, the other factor  
15 goes down, is that right?

16 A. Yes.

17 Q. If you have a positive correlation, generally, as one  
18 factor goes up, the other one goes up, is that right?

19 A. That's right.

20 Q. If we can look at the first column on Page 28 of your  
21 exhibit, you showed the relationship between wealth  
22 and total tax rate, is that correct? Page 28.

23 A. Excuse me, in the first column, the relationship  
24 between wealth and total tax rate --

25 Q. That's correct.

1 A. -- was minus 0.223.

2 Q. Dr. Verstegen, if we could, as we're going through  
3 some of these correlations, if we can just use two  
4 numbers, I think it might make it a little simpler.

5 A. Okay.

6 Q. The relationship between wealth and total tax rate is  
7 minus .22, is that correct?

8 A. Minus .22. Very, very low.

9 Q. Okay. But generally, does that mean that as the  
10 districts get wealthier, their total tax rates go  
11 down?

12 A. I guess you could say that, generally, the  
13 correlation would tend to move in that direction.  
14 But it's so low that it's hard to tell what that  
15 would look like if we plotted it.

16 Q. Okay. Now you said the correlation would go in that  
17 direction. I want to make sure we're interpreting it  
18 correctly, though. Generally, the relationship --

19 A. A negative relationship is inverse, I beg your  
20 pardon.

21 MR. RICHARDS: Okay.

22 Q. You go ahead.

23 A. I finished.

24 Q. Okay.

25 A. I'm sorry.

1 Q. If I understand that correctly, then it means that as  
2 the districts get wealthier, their total tax rates  
3 get lower, is that correct?

4 A. That, in general, that's what it means.

5 Q. Okay. Under that same column, there is a  
6 relationship between wealth and Hispanic as a percent  
7 of total, is that correct? It's the fourth line.

8 A. That is correct.

9 Q. Okay. And Hispanic, as a percentage of total, I  
10 guess, is the percent of all of the students in the  
11 district and you find the Hispanic percentage in that  
12 district, is that correct?

13 A. That's correct.

14 Q. And you have a correlation there of minus .20, is  
15 that right?

16 A. Yes.

17 Q. Okay. Does that mean that, generally, as the  
18 districts get wealthier, the percentage of Hispanic  
19 students in the district goes down?

20 A. It does mean that, although these are so low, that to  
21 me, it's quite remarkable that it really shows very  
22 little of anything. Although the minus does indicate  
23 an inverse relationship.

24 Q. Okay. If we can go on down that column, wealth and  
25 ninth -- percent ninth-grade passing TABS test,



1           that's a .16 relationship, is that right?

2   A.   That is right.

3   Q.   Okay. Does that mean that, generally, as the  
4       districts get wealthier, their percent of ninth-grade  
5       passing TABS tests goes up?

6   A.   It does. But I would like to say that it's so low,  
7       that if we drew it, I don't want to be leading you  
8       astray, you would have a hard time telling which way  
9       it went. It would look much like a shotgun, just  
10      scattered.

11   Q.   Thank you. If we go on down that line, does it show  
12      that on the relationship between wealth and lunch,  
13      and let me -- you have a figure for lunch, is that  
14      right?

15   A.   Yes.

16   Q.   Okay. By lunch, here, what you're talking about is  
17      the compensatory education percentage as a total of  
18      the total students in the district?

19   A.   Yes.

20   Q.   Okay. Is that generally meant to mean that the  
21      percentages of the kids in the district that are poor  
22      kids are from below poverty level families?

23   A.   It's the national standards for free and reduced  
24      price lunch and I believe it's distributed on AFDC  
25      count.

1 Q. So, but generally, does my understanding -- and tell  
2 me if I'm correct, that the percentage of  
3 compensatory ed. students in the district reflects  
4 the percentage of kids from poor families in the  
5 districts, is that right?

6 A. Yes, as that variable is intended to reflect.

7 Q. Okay. And the relationship there, is that as the  
8 districts get wealthier, the percentage of students  
9 that are, I guess, from below poverty families, goes  
10 down, is that correct?

11 A. Well, I'm not sure if below poverty families is the  
12 actual definition of how free and reduced price  
13 numbers are calculated. But that as one goes up,  
14 yes, the other does go down.

15 Q. Okay.

16 A. And in general, that is a low income factor.

17 Q. All right. If we can continue going down the wealth  
18 line to teachers' salaries, do your figures show that  
19 as the districts get wealthier, the average teachers'  
20 salaries in '84-'85 go up?

21 A. The statistic is .39. That those two variables move  
22 together.

23 Q. Okay.

24 A. Now, the magnitude of that movement, we don't know.

25 Q. Okay. When they move together, here, I think what

1           we're meaning, is as the wealth goes up, the average  
2           teacher's salary goes up, is that right?

3   A.    Yes.

4   Q.    Okay.

5   A.    Again, it's not a very meaningful statistic as a .39,  
6           quite low.

7   Q.    Do we find the same sort of positive relationship  
8           between wealth and the mean beginning teacher's  
9           salary and the total salary adjusted by the PDI?

10  A.    Yes.

11  Q.    Okay.  So generally, as the wealth of the district  
12           goes up, the mean beginning teacher's salary and the  
13           total salary adjusted by the raw PDI goes up, is that  
14           right?

15  A.    Yes, it was quite interesting, because the -- with  
16           the no relationship to experience, you aren't sure if  
17           that's a result of wealth, or if it's just a district  
18           practice of paying their beginning teachers up front,  
19           loading their salary schedule.  I don't know the  
20           extent to which they go up, the numbers are not that  
21           high.  But to the extent they move together, you  
22           don't know if it's the way they're allocating the  
23           resources, or if it is the resources.

24  Q.    All right.  Would you generally feel that with regard  
25           to most of your figures, these correlations, that you

1 cannot look at just the correlation, that you have to  
2 look at the variety of other factors from which they  
3 come in order to interpret them correctly?

4 A. Well, I think that they are useful in some sense,  
5 because they do give you an indication of the  
6 relationship to each other --

7 Q. Okay.

8 A. -- within the table. And they do give you an  
9 indication of their -- I guess, their relationship to  
10 each other, I would like to say. As far as a  
11 correlation like revenue and wealth, I would like to  
12 do -- I feel that further analysis than just a  
13 correlation would be necessary for such an important  
14 consideration that's given to those two variables.  
15 And that slope and elasticity are ways to determine  
16 the magnitude of those variables.

17 Q. Thank you. If we can go on down the wealth line,  
18 here, for a second. On the second page, I guess  
19 that's Page 29. Again, the relationship between  
20 wealth and total state and local revenue is .65, is  
21 that correct?

22 A. Yes, it is.

23 Q. Okay. And that shows, according to your definition,  
24 a stronger relationship. At least a moderate, or  
25 moderate strong relationship between wealth and total

1 state and local revenue in a district, is that right?

2 A. Yes. Now there's that relationship we're talking  
3 about between revenue and wealth, that I said we  
4 would need to go further. And we did. We looked at  
5 the slope and we looked at the elasticity and said  
6 they might move together, but it's a very low  
7 magnitude of change that is caused when one moves  
8 versus the other. So therefore, it might not be  
9 altogether that moderately strong in the whole  
10 analysis.

11 Q. Okay.

12 A. That's when one should be, I think, very cautious in  
13 looking at a low.

14 Q. Okay. It also shows, as I understand it, on Page 29,  
15 a relationship that as the districts get wealthier,  
16 their beginning fund balances per pupil go up, is  
17 that correct?

18 A. A .37, another -- they do move -- it is a positive  
19 relationship. I guess you're asking are these  
20 positive relationships, because we aren't really  
21 talking about the size of the relationship. And yes,  
22 that is a positive relationship.

23 Q. Okay. We go on down the line on Page 29 with wealth,  
24 does it show that there is, I guess in this case, a  
25 strong relationship between wealth and state and

1 local enrichment per pupil of .68, is that right?

2 It's third to the last line.

3 A. .68, yes.

4 Q. What is state and local enrichment per pupil?

5 A. That is a good question.

6 Q. Probably my first one.

7 A. The local enrichment per pupil, as you know, is  
8 funding outside of the FSP, that's totally generated  
9 by state property tax levies. State enrichment is  
10 the equalization enrichment that is generated through  
11 a variety of factors. One, through an effort factor  
12 in the district, and one through the state support,  
13 which derives its support from various sources.  
14 Income taxes, gasoline, I think perhaps taxes and so  
15 forth. Not income taxes, I beg your pardon.

16 Q. You're in the wrong state.

17 A. Texas, through a variety of sources, revenue sources.

18 Q. Okay.

19 A. So it -- perhaps, is an odd mixture, that variable.

20 Q. Is your interpretation, though, that state and local  
21 enrichment per pupil is monies above the Foundation  
22 School Program that a district has to spend on its  
23 pupils?

24 A. I believe so, yes. It's much like this total state  
25 and local revenue per pupil variable up here. It

1 includes -- and wealth. It's a large -- it's part of  
2 that revenue variable. So I think you should look at  
3 the total picture of revenue, rather than taking a  
4 piece separately.

5 Q. Okay.

6 A. Uh-huh.

7 Q. And the relationship between wealth and that amount  
8 of revenue that a local district has to spend above  
9 the Foundation School Program is .68, is that  
10 correct?

11 A. Yes, it is.

12 Q. Okay. So, as the districts get wealthier, the amount  
13 that they can spend above the Foundation School  
14 Program on their kids goes up, too, is that correct?

15 A. It is. But again, I would like to just caution you,  
16 the magnitude of that movement then becomes the  
17 question. Like the example with the children, how  
18 much weight are they gaining compared to the older  
19 adults? It makes a difference.

20 Q. Dr. Verstegen, I would like to show you what's been  
21 marked as Plaintiffs' Exhibit 107. And Plaintiffs'  
22 Exhibit 107 shows the expenditures per student unit  
23 above the Foundation School Program by wealth group,  
24 with over at the left, the poor districts spending  
25 -- oh, \$300.00, \$400.00 above the Foundation School

1           Program, and the rich districts spending up to  
2           \$1,750.00 per student unit above the Foundation  
3           School program. Do you understand the basic  
4           structure of this exhibit now?

5       A.    The yellow is the M & O tax revenue.

6       Q.    Uh-huh.

7       A.    And the blue is the I & S tax revenue.

8       Q.    Okay.

9       A.    Now, the ten different factors --

10      Q.    Uh-huh.

11      A.    -- are those what?

12      Q.    Okay. These are tenths of student units when the  
13           districts are ranked by wealth per pupil, with this  
14           being the ten percent of the kids in the poorest  
15           districts in No. 1 --

16      A.    It is ten percent of the pupils.

17      Q.    Student units, actually, excuse me.

18      A.    Uh-huh.

19      Q.    Given that analysis, would this show you what your  
20           correlation showed you, that as districts get richer,  
21           they spend more above the Foundation School Program  
22           on their kids?

23      A.    What is the line in the yellow?

24      Q.    Okay. The line is the -- it's the state portion.

25                   MR. RICHARDS: The state equalization.



1 Q. State equalization aid, excuse me. The amount below  
2 the yellow bar is the state equalization aid.

3 A. Uh-huh.

4 Q. Below the yellow bar. And the bottom of this is the  
5 Foundation School Program cost.

6 Do you understand the graph, now?

7 A. I understand the question.

8 Q. Okay.

9 A. And I believe that I would say, yes, it does show  
10 what the correlation is saying. Although I feel that  
11 you should be cautioned that this is only one part of  
12 the picture.

13 Q. I understand.

14 A. Now the state steps in there and you could put in a  
15 red bar --

16 Q. Uh-huh.

17 A. -- to show how much those poor districts get from the  
18 state. And then you could look at this total  
19 variable. You see, it could change things. That's  
20 the purpose of this Foundation School Program, is to  
21 make up for what you're showing here.

22 Q. Excuse me, this is the amount --

23 A. And I think that effort is also -- could be a factor.  
24 I'm not sure if the wealthy districts have a stronger  
25 effort, or if the poorer districts have a weaker

1 effort. But if you want to take it out of the  
2 context of the whole picture, that -- yes, that is  
3 the part, the local part of it. And that is why  
4 foundation programs were developed, to aid those  
5 poorer districts in making a total -- of providing  
6 total dollars to students.

7 Q. Okay.

8 A. It's a very nice table, by the way.

9 Q. Thank you. Thank you.

10 Dr. Verstegen, maybe I wasn't making myself  
11 clear, though. These amounts are amounts above the  
12 Foundation School Program. In other words, the state  
13 aid that goes to the school districts under the  
14 Foundation School Program is below this. These are  
15 the amounts above the Foundation School Program.

16 A. But you see, it looks like if they all start off with  
17 an even, like it's a flat grant underneath there,  
18 like it's an even band underneath there.

19 Q. Uh-huh.

20 A. But it's not an even band underneath there. There's  
21 a big band for those poor districts and there's  
22 nothing for very wealthy districts.

23 Q. State aid you're talking about?

24 A. This isn't going on top of something that's flat,  
25 it's going on something that's very variable and has

1 the reverse effect of what this is showing.

2 Q. Okay. Let me make myself clear. Maybe I'm not  
3 making myself clear. Each district has something  
4 called Foundation School Program costs, is that  
5 correct?

6 A. Exactly.

7 Q. And those costs are met by a combination of state and  
8 local revenues, is that correct?

9 A. Yes.

10 Q. And when you add those state and local revenues up,  
11 you come up with a total Foundation School Program  
12 cost for the district, is that right?

13 A. Yes.

14 Q. Okay. Now, that total could be composed of different  
15 components of state and local aid. But the  
16 Foundation School Program costs for the districts is  
17 pretty steady across from rich to poor, isn't it?

18 A. The FSP cost?

19 Q. Yes.

20 A. I'm not sure exactly how that ranges. I would  
21 imagine that it supports the basic program fully.

22 Q. Okay. So if it supports the basic program fully and  
23 the basic program is the same in rich and poor  
24 districts, then the Foundation School Program cost  
25 for the districts is about the same for rich and

1 poor, is that right?

2 A. I see you're saying that it's sort of flat, but it  
3 isn't. I don't think it is.

4 Q. It's not the sort of thing you are describing, where  
5 the poor districts would have a very great Foundation  
6 School Program and the rich districts have a very  
7 small Foundation School Program, that's not correct,  
8 is it?

9 A. Let me ask you something further, then, about this.  
10 These M & O taxes, these are taxes outside of the  
11 FSP?

12 Q. These are expenditures, maintenance operation  
13 expenditures, which are in addition to the  
14 expenditures for the Foundation School Program.

15 A. For what year is that?

16 Q. '85-'86.

17 A. Okay. So those are expenditures outside the FSP?

18 Q. That's correct. We're changing roles, here, again.  
19 But you're asking good questions.

20 A. Oh, I'm sorry.

21 Q. No, please --

22 A. I'm trying to understand.

23 Q. I'm trying to help you. Go ahead.

24 A. What are you defining as the FSP?

25 Q. What the state defines as the Foundation School

1           Program.

2       A.    Could you just refresh my memory, so I can --

3       Q.    Excuse me. Now, I have to ask you one. You've  
4           written papers on the Texas school finance system,  
5           haven't you?

6       A.    I have, indeed.

7       Q.    You're certainly aware of the Foundation School  
8           Program in Texas, aren't you?

9       A.    I certainly am.

10      Q.    And would you agree, that in general, the Foundation  
11           School Program costs for districts in the state, from  
12           rich to poor, is roughly the same across all of the  
13           districts, isn't that right?

14      A.    Well, this equalization enrichment, you know, it  
15           gives poor districts an extra boost. And it gives  
16           them quite a hefty extra boost. It gives them up to,  
17           I believe, almost a third more of their total cost.  
18           So it really, you see, it does define what I was  
19           saying. They get -- their bar, underneath there, is  
20           a bit different.

21      Q.    Okay. But the equalization aid is shown on this  
22           graph. It's in the bar.

23      A.    The equalization enrichment money?

24      Q.    Enrichment, that's correct.

25      A.    Okay.

1 Q. So this -- the poorer districts, you get the state  
2 equalization aid goes up to the black line, and the  
3 amount above it is additional local revenue. So,  
4 we've accounted for the fact of your mentioning it, I  
5 think, is that right?

6 A. That's what I was asking the question for.

7 Q. Okay, sure.

8 A. So the line is equalization enrichment, and you're  
9 not defining that as part of the FSP.

10 Q. That's correct, we're not.

11 A. Okay. So the FSP is up to the state local split, in  
12 your estimation.

13 Q. That's correct.

14 A. You have indicated -- you have added in pre-K and  
15 bilingual and so forth.

16 Q. Yes.

17 A. Okay.

18 Q. Now, given all of these understandings, now --

19 A. Yes.

20 Q. -- does this exhibit, Plaintiffs' Exhibit 107, show  
21 you, as does your correlation, that as districts get  
22 richer, they spend more and more and more  
23 expenditures above the Foundation School Program?

24 A. As districts get wealthier, as I think my analysis  
25 showed and particularly lodged with the top five

1           percent, there were, generally, additional revenues.  
2           But the bars looked very different and that's why,  
3           perhaps, I need to give this some thought. It may  
4           have something to do with tax rates. That is, I'm  
5           -- I don't know what the tax rates are. And then  
6           finally, and last of all, the scale that's used.  
7           See, we go from \$500.00 to \$1,000.00, to \$1,500.00,  
8           not to \$2,000.00 to \$1,750.00. And put on an entire  
9           scale, I mean, are these differences being stretched,  
10          or are they being made to look smaller? You see what  
11          I mean? So the actual scale of values is something  
12          of interest. But I agree that the correlation shows  
13          and my data show that the top five percent of  
14          districts in Texas have additional revenues beyond  
15          what appears to be a more flat distribution.

16       Q.    Okay. But your correlation is for every district in  
17              the State of Texas, is that correct?

18       A.    It is.

19       Q.    And your correlation shows a positive relationship, a  
20              strong positive relationship between the wealth of  
21              the district and the local and state enrichment above  
22              the Foundation School Program, is that right?

23       A.    It shows that there is a relationship that you --  
24              that the values cluster around something that can be  
25              drawn as a line.

1 Q. Uh-huh.

2 A. But the slope of the line, the angle of the line, how  
3 much of the relationship? What is the magnitude?  
4 Let's measure it. That magnitude is small. So you  
5 could have one or two out here pulling that  
6 relationship. You could have a cluster of districts  
7 here and a few wealthy districts out here, pulling  
8 that line. That's why you look at the magnitude.

9 Q. When you talk about one or two districts pulling the  
10 line, or having an extreme effect, I assume that that  
11 would apply to all of the correlations in your table,  
12 is that right?

13 A. That very likely could, yes.

14 Q. Okay. But these are correlations that you have  
15 written in a report and submitted to the State Board  
16 of Education and indirectly, to the State Legislature  
17 for their consideration on whether to grant monies to  
18 school districts, isn't that right?

19 A. Yes. I think the data are really quite solid. I was  
20 referring to the wealth and revenue that we were  
21 talking about to explain the additional need for the  
22 slopes, and the elasticities, or the magnitude of the  
23 angle of that line.

24 Q. Thank you.

25 A. Perhaps what could be explained for the difference --



1 Q. Excuse me, Dr. Verstegen, there's no question.

2 A. Oh, I was still thinking of the last one.

3 Q. Excuse me. I'm slowing, I apologize.

4 If we can look on Page 37 of your report,  
5 please.

6 A. Uh-huh.

7 Q. Did you state there that, "Local enrichment and state  
8 and local enrichment both exhibited a strong moderate  
9 relationship to total teacher salaries, as did total  
10 state and local revenue per pupil?"

11 A. The state and local enrichment per pupil to beginning  
12 teachers' salaries was .36. To average, it was .44.  
13 I was unable to come up with the top of this scale  
14 amount, but based on this minimum salary ratio, it  
15 seems to me it would fall off there. As I said,  
16 there may be some indication of different practices  
17 in using the revenue.

18 Q. Okay.

19 A. In front loading the scale, perhaps.

20 Q. But on Page 37, in the first full paragraph of your  
21 study, you stated, Page 37, first full paragraph, you  
22 stated, "Local enrichment and state and local  
23 enrichment both exhibited a strong moderate  
24 relationship to total teacher salaries, as did state  
25 and local revenue per pupil," is that correct?

1 A. I did state that, yes.

2 Q. Okay. Now, on Page 38, you were talking about test  
3 scores. And I think you found a strong moderate  
4 relationship between minority students and between  
5 free and reduced price lunch students and the test  
6 scores, is that right?

7 A. I'm sorry, on which page, now?

8 Q. Page 38, first paragraph.

9 A. Yes.

10 Q. Okay. And you found a strong moderate negative  
11 relationship between test score variables and  
12 minority students as a percentage of total students,  
13 and free and reduced price lunch students as a  
14 percentage of total students, is that right?

15 A. Yes.

16 Q. Okay. Now, on Page 39, you have this relationship  
17 between test scores and various variables, is that  
18 correct, on Page 39?

19 A. Yes.

20 Q. Okay. And that's where you found the relationship  
21 between the TEAMS scores and the wealth, in terms of  
22 property value per ADA, of .232, is that right?

23 A. The TEAMS scores and the property values --

24 Q. Yes.

25 A. -- per ADA was .232.

1 Q. Okay. So generally, as the property value goes up,  
2 the TEAMS scores go up, is that right?

3 A. It's -- it's really so low, it's almost negligible,  
4 meaning that probably these other two groups,  
5 minority students, really it doesn't relate to  
6 wealth, or else it would show there. Because that's  
7 why one would be high and the other would just would  
8 be a wash. But I think it does show there, for free  
9 and reduced price lunch kids, that we're targeting  
10 those programs properly. That the kids with the low  
11 test scores are getting into the program, even though  
12 you can't isolate where they might be, they're kind  
13 of scattered around.

14 Q. Dr. Verstegen, let me ask just one simple question  
15 here. The relationship between wealth and TABS was,  
16 that as the districts get wealthier, the TABS scores  
17 went up, is that right?

18 A. It's either such a slight, or almost no relationship,  
19 and it's .161.

20 Q. Okay.

21 A. When you square that, you're just -- there's nothing.

22 Q. Okay. Well, let's talk about that for a second, that  
23 relationship, because I guess it's sort of important  
24 to us here.

25 But I can't find --

1 Dr. Verstegen, on Page 39 of your report, then,  
2 you relate test scores to several variables in Texas,  
3 is that correct?

4 A. Yes.

5 Q. Okay. Now, you, by doing this analysis, you do not  
6 mean to imply that test scores are the only way to  
7 measure the educational quality of school districts,  
8 do you?

9 A. As I indicated at the beginning, in outputs and  
10 outcomes, there may be other ways, satisfaction with  
11 life, being a contributing member of society, and so  
12 forth. Cognitive achievement is one of the most  
13 utilized variables, in terms of output. And  
14 therefore, it was utilized in this case. And I  
15 believe that there is an attempt to raise student  
16 scores in the State of Texas. And that was one of  
17 the driving factors of House Bill 72, when the  
18 Secretary of Education indicated that -- provided  
19 comparisons across the states and Texas' test scores  
20 were not what they might have been.

21 Q. Okay. Dr. Verstegen, you do not mean to say that  
22 TABS and TEAMS scores are the only way to measure the  
23 quality of the educational offerings in the State of  
24 Texas, do you?

25 A. No, I don't mean to say that.

1 Q. Thank you. Let's talk about some others. You've  
2 mentioned several other indicators of educational  
3 quality, yourself. You talk about satisfaction, you  
4 talk about, I guess, job opportunities in the future,  
5 contributions to society, those sorts of things are  
6 certainly involved as measures of educational  
7 quality, are they not?

8 A. I'm not sure what you mean by educational quality. I  
9 was talking about outputs of the educational process.

10 Q. Okay.

11 A. And in some cases, there's jointedness of returns, so  
12 it's hard to isolate one from the other.

13 Q. Let's talk about a kid as an output.

14 A. A child as an output?

15 Q. A child. When a child graduates from a school system  
16 in Texas, they hopefully learn something. They have  
17 an education, is that right?

18 A. Uh-huh.

19 Q. Okay.

20 A. Okay. So the learning would be the output in this  
21 example, perhaps.

22 Q. Learning certainly would be related, I hope. That  
23 child has learned a lot in school, and it's had  
24 something to do with his values, something to do with  
25 his future, all of those things are important to the

1 child, are they not?

2 A. They are, but I don't think that we, as educators,  
3 can take full responsibility with everything to do  
4 with that child. They have a family, they have a  
5 home life and so forth. So we can't really, although  
6 we might like to, say that we're responsible for  
7 every single thing to do with that child. I think  
8 it's almost something that you're treading on very  
9 thin ice. That we shouldn't really do that.

10 Q. Okay.

11 A. We can't affect all of those things.

12 Q. Let's talk about some other indicators that might be  
13 looked at, Dr. Verstegen. The TABS and TEAMS test  
14 scores are measures of minimum skills, is that right?

15 A. Yes.

16 Q. Okay. Aren't there also other tests, such as the  
17 Scholastic Aptitude test and SAT test that measure  
18 aptitude to go on and do college work?

19 A. There's Wide Range Achievement test, Metropolitan  
20 Achievement test, and so forth.

21 Q. You have not, in your analysis, shown us the  
22 relationship between wealth or expenditures and the  
23 SAT or the ACT or any of these other tests, is that  
24 right?

25 A. I did not have those data available.

1 Q. So you did not do it, obviously?

2 A. I did not, in the analysis, show it, no.

3 Q. Well, did you --

4 A. It wasn't available. I couldn't show that.

5 Q. Okay. Did you look at the percentages of students at  
6 the schools who graduate from high school?

7 A. No, I didn't do that.

8 Q. Okay. Did you look at the percent of the graduates  
9 of the schools who go on to college?

10 A. No, I didn't do that.

11 Q. Okay.

12 A. I had a limited report here to write in limited time,  
13 in which to do that. I'm not sure if those data are  
14 available statewide, actually.

15 Q. Did you look at the --

16 A. I didn't mean -- I beg your pardon, go ahead.

17 Q. Did you look at the percentage of students that drop  
18 out?

19 A. No, I didn't. I don't know that those data are  
20 available. I believe I mentioned that in the  
21 beginning. I introduced to the readers that some  
22 things were not available to look at on statewide  
23 basis. I'm not sure if that was one or not.

24 Q. Did you look at the future jobs that the graduates of  
25 the schools got when they graduated from Highland

1 Park, or San Elizario, where they went to work?

2 A. I don't know of any studies, recently, that have done  
3 that.

4 Q. My question is, did you do that?

5 A. No, I didn't. I didn't have those data. There are a  
6 number of things one could do, given limitless time,  
7 resources and staff, in terms of being able to expend  
8 all of your time and energy on a report.

9 Q. Sure, I understand. Now, let's look at what you did  
10 do.

11 A. Okay.

12 Q. Okay. You have -- let me see how to draw this.  
13 District A and District B, okay?

14 A. Yes.

15 Q. All right. And let's say that District A spent  
16 \$3,000.00 a child and had a TEAMS, let's say TABS  
17 scores of 70 percent, okay?

18 A. Yes.

19 Q. And District B had revenues of \$3,000.00 and had TABS  
20 scores of 30 percent, okay?

21 A. Yes.

22 Q. Okay. And this is --

23 A. 30 percent, meaning --

24 Q. 30 percent passed the test.

25 A. 30 percent passed the test, okay.



1 Q. Okay. And this is '85 -- use '85-'86 data, is that  
2 right?

3 A. Well, the TABS used '84-'85 data.

4 Q. Okay.

5 A. But the TEAMS used actual scores. It didn't use  
6 percent passing, it used actual scores. And it used  
7 '85-'86 data for eleventh-graders.

8 Q. Okay. Well, let's look on TABS for just a second, if  
9 we could.

10 A. Okay.

11 Q. Okay.

12 A. And we'll say it was '84-'85 data, though.

13 Q. Okay. '84-'85 data, fine.

14 So what you did, as you looked at one -- you  
15 looked at a snapshot of what happened, looking at  
16 '85-'86 revenue against '84-'85 scores, is that  
17 right?

18 A. In that case, I did. In the TEAMS case, I looked at  
19 '85-'85 -- '85-'86 against '85-'86.

20 Q. Okay. You did not look at the revenues that were  
21 spent in that school for the last four or five, six,  
22 ten years, did you?

23 A. No, I didn't.

24 Q. Okay. So if this were to occur, I want to look at  
25 this. First of all, according to this analysis, it

1 looks as though, as far as these districts are  
2 concerned, money did not make any difference here.  
3 This district had \$3,000.00, it had 70 percent  
4 passing. This one had \$3,000.00, it had 30 percent  
5 passing. So for these two districts, District A and  
6 District B, money didn't really matter, did it?

7 A. It doesn't appear to, in this single example here.

8 Q. Let's look at what happened in these districts the  
9 years before, okay?

10 A. I beg your pardon, are these actual districts?

11 Q. No, these are hypotheticals.

12 A. Okay.

13 Q. Absolutely.

14 All right. Let's say that in -- let's go back  
15 before House Bill 72, if we can, for a second. Let's  
16 say in '83-'84, District A spent \$4,000.00 and  
17 District B spent \$2,000.00. And in '82-'83, District  
18 A spent \$4,000.00, and District B spent \$2,000.00.  
19 And let's say you can go back like this for about  
20 five or ten years. Basically, the whole education of  
21 the kid. All right, from a hypothetical, do you  
22 understand?

23 A. Hypothetically, yes.

24 Q. Okay. Fine.

25 According to your analysis, District A and

1 District B are spending the same amount of money on  
2 children, is that right?

3 A. Yes.

4 Q. Okay. And you have not considered what they were  
5 spending for the last five or ten years while these  
6 children were going through school, have you?

7 A. No, I haven't. And that same analysis, you see,  
8 could be reversed. And the research, the larger  
9 research says that's more probable. That under  
10 District A, in those previous years, maybe that was  
11 the \$2,000.00 side, and under District B, in the  
12 previous years, that was the \$4,000.00 side. So,  
13 although it's a snapshot, I wanted to look at some of  
14 these variables, in that these kids have been around  
15 all of these years, these comp. ed. kids and so  
16 forth. And it's used as a baseline for alternatives  
17 to current law.

18 Q. Uh-huh.

19 A. And I thought that was necessary for a baseline.

20 Q. Okay. But if they were --

21 A. It is a cross-sectional analysis.

22 Q. If there were inferences drawn from your data, in  
23 your baseline data, though, that in Texas, the amount  
24 you spend has no effect on test scores, then you  
25 would not agree on that inference, is that right?

1 A. I'm not sure I understand what you said. I believe  
2 that in Texas, according to these data, there's no  
3 relationship between spending and achievement.

4 Q. Okay. So again, your analysis, though, says that  
5 there's no relationship. But you have not looked at  
6 the last ten years for each one of these districts,  
7 is that correct?

8 A. That is correct.

9 Q. Okay. Dr. Verstegen, did you look at what was  
10 actually spent on the kids in the school districts,  
11 as far as in their classrooms?

12 A. I didn't do classroom level analysis. I was looking  
13 at the state's system.

14 Q. Okay.

15 A. So the state level -- although some of these measures  
16 do actually -- they are per pupil measures, remember.

17 Q. Uh-huh.

18 A. And they look at percentages of children and they  
19 look at -- they break these things down. So --

20 Q. In your analysis that you've done for your baseline  
21 data, without getting too complicated, you did what  
22 is called a weighted correlation, the bigger  
23 districts count more in the correlation than the  
24 smaller districts, is that right?

25 A. What I did was I counted each individual child as a

1 person.

2 Q. Uh-huh.

3 A. And instead of taking a district like Pecos, which  
4 could be very small, and counting it even with a  
5 district like Dallas, which is very large and has  
6 many more children --

7 Q. Uh-huh.

8 A. -- I counted each child. That a pupil level of  
9 analysis has much support in the research. And we're  
10 talking about pupil equity.

11 Q. Okay. When you say you counted each child, though,  
12 let's explore that for a second. You looked at  
13 Houston and you found a per pupil figure for Houston.  
14 And you assumed that all 180,000 kids in Houston were  
15 the same, right?

16 A. Exactly. It's a state level analysis. The  
17 assumption did come down to a dollar figure, but it  
18 was based on the differences. The differences of  
19 cost for bilingual education by individual students  
20 and the actual differences in cost for vocational  
21 education for individual students. The same for  
22 compensatory education, gifted and talented  
23 education, and so forth.

24 Q. Okay. When you talked about Houston, you didn't look  
25 at John Smith and figure out the cost associated for

1 John Smith, and then look at Mary Smith and find out  
2 the expenditures on her, and then look at Juan  
3 Hinojosa (Phon.) and figure out the expenditures on  
4 him, right? You added all of them up for all of the  
5 kids in the district, found an average for all of the  
6 kids in the district, right?

7 A. I may have found each person's individual cost and  
8 then got an average and weighted the average.

9 Q. Okay.

10 A. This is the way it's done in finance. I'm not aware  
11 of it ever being done that way.

12 Q. I understand. But when you said you looked at each  
13 pupil, per pupil, you didn't mean you looked at the  
14 expenditures on each pupil individually, is that  
15 correct?

16 A. Well, but I did, if that person was in gifted and  
17 talented, voc. ed., and so forth, that was figured  
18 into the analysis.

19 Q. Okay.

20 A. There was an average taken for the entire district  
21 and it weighted the number of children in the  
22 district.

23 Q. But in your equations, when you looked at Houston,  
24 you came up with an average revenue of \$3,000.00 per  
25 child and said "every child has a revenue of

1           \$3,000.00," is that correct?

2       A.    Yes, that's the way the analysis is undertaken.

3       Q.    I understand. Again, back to my earlier point,  
4           Houston then would mean a lot more to the analysis  
5           than Pecos, you say, because Houston's a lot larger?  
6           Weighted, so to speak?

7       A.    Yes.

8       Q.    Now, we've heard earlier testimony, I think it's  
9           correct, Houston and Dallas, together, have around, I  
10          think it's 10 percent of the kids in the state. Does  
11          that sound about right to you?

12      A.    I would need to check that figure, actually.

13      Q.    If Houston has about 180,000, Dallas has about  
14          130,000, add up to a little over 300,000, is that  
15          about right?

16      A.    Sounds like a little over 10 percent.

17      Q.    We've also heard testimony that Houston and Dallas  
18          are very wealthy districts that tend to have low test  
19          scores, is that right?

20      A.    I would like to see those data and see where they do  
21          rank in terms of wealth and test scores, and so  
22          forth.

23      Q.    Assume with me, for a second, that Houston and Dallas  
24          are wealthy districts that have lower test scores,  
25          okay? If that is correct, did you decide, in your

1           analysis, to look at all of the districts and not  
2           look at Houston and Dallas, just look at the rest of  
3           the districts?

4   A.   Excuse me?

5   Q.   Did you decide to go back and do a correlation of  
6           wealth and test scores and exclude Houston and  
7           Dallas, just look at all of the rest of the  
8           districts?

9   A.   I didn't exclude any districts.

10   Q.   Okay. When you were doing your equity analysis, and  
11           your range ratios and whatever, you did go through a  
12           process of first looking at all of the districts and  
13           then looking at all of the districts and excluding  
14           the highest revenues, that sort of thing, didn't you?

15   A.   Five percent of the pupils, I did.

16   Q.   Okay. So you did it both ways. When you're looking  
17           at the relationship between wealth and revenue, you  
18           looked at all of the pupils. And then you decided to  
19           understand the process, further, you need to look at  
20           all of the pupils and take one percent of the  
21           students out, or take five percent of the students  
22           out, didn't you?

23   A.   In the case of finance, this idea of the 5th and 95th  
24           percentile is embedded within the measures.

25   Q.   Uh-huh.



1 A. And it's very -- in the thinking, it's very "Hey, who  
2 started the Foundation School Program? Who  
3 conceptualized it?" Actually, that district should be  
4 rewarded for going beyond the Foundation School  
5 Program, because they're raising extra money for the  
6 kids and the state can't afford to do it, which  
7 should give them some kind of incentive. So, in  
8 looking at the fairness of the measure, embedded  
9 within that is letting the very ends do what they  
10 will, if you may, and looking at the rest.

11 Now, in the case of the test scores, Mr.  
12 Kauffman, and no offense intended here, but what  
13 you're suggesting that is something, to me, along the  
14 lines of if the sky is falling, is Texas a safe place  
15 to live? And then you end it by saying therefore  
16 Texas isn't a safe place to live. But that argument,  
17 I find to be very flawed. And that is, that if A,  
18 then B doesn't work if A is wrong, no A, then no B,  
19 that's simple propositional calculus, as far as I'm  
20 concerned, the Demorgan's theories for logic. And so  
21 therefore, I can't go along with the implication  
22 which I think is very strong in what you're saying  
23 with regards to the test scores. And I think it's  
24 very misleading.

25 Q. Dr. Verstegen, I would like, for a moment, to look at

1           Page 46.

2                   THE COURT: Before you start on that, mark  
3           your place and we'll get started up again at 2:00.

4  
5  
6                                   (Lunch Recess)

## CROSS EXAMINATION (RESUMED)

BY MR. KAUFFMAN:

Q. Dr. Verstegen?

A. Yes?

Q. Before lunch, I think we were on Page 46 of your study which is "Changes in Correlation Coefficient Over Time," is that right?

A. Would you like to turn to 46? That's fine.

Q. Yes, please, Page 46.

And of course, we are still on Defendants' Exhibit 48 on Page 46.

This chart which you labeled Table 3.7 is supposed to show trends and correlations between various variables between the '83-'84 and the '85-'86 school years, is that right?

A. Yes.

Q. And for these various variables, you've shown us the correlation for one year and the correlation for the other and then you subtracted and showed the difference between the correlations, is that right?

A. Yes.

Q. Did you, from this table, draw any inferences that school finance in Texas has improved between '83-'84 and '84-'85?

A. I'll check the study and see if I did. No, I did not

1 draw any overall inferences.

2 Q. Okay.

3 A. The reasons for that were several.

4 Q. Excuse me. You didn't draw any inferences from that  
5 table?

6 A. No, I didn't.

7 Q. Okay. What was it supposed to mean that the  
8 correlation had gone down? For instance, between  
9 wealth and operating expenditures in '83-'84 and  
10 wealth and operating expenditures in '85-'86, there  
11 was a slight decline in the correlation coefficient.  
12 What does that mean to you?

13 A. It's so small that that is meaningless, the  
14 difference. But when it goes down, it means that  
15 there's less of a relationship between those factors.

16 Q. Did you draw from that any inferences, though, that  
17 there was an improvement, or a decline, or something,  
18 in the equity of the school finance system of Texas?

19 A. With the regard to inference drawn for any of these  
20 numbers on this page, or any further questions  
21 regarding the inferences and these numbers, I am -- I  
22 question these 1983-'84 data. They aren't mine, I  
23 utilized them from another study. And therefore, I  
24 did draw overall inferences, but I presented them for  
25 information purposes.

1 Q. I think that according to your footnote, you drew  
2 them from the LBJ study, is that correct?

3 A. That is correct.

4 Q. And in fact, I think at your deposition, I asked you  
5 the source of that information and you sent me a page  
6 that had that information on it from the book?

7 A. It's the green book, I think, that you have on your  
8 table right here.

9 Q. You bet.

10 A. It's the LBJ School of Public Affairs. I believe a  
11 student study.

12 Q. Okay.

13 A. Uh-huh.

14 Q. But you refer, in your Footnote B here, to that  
15 study. And there's information on your table that  
16 you used in your study from the LBJ study, is that  
17 right?

18 A. The 1983-'84 data are the LBJ study data.  
19 Originally, I was going to use more of those data.  
20 And as I said, the integrity of the data were  
21 questionable to me, so I didn't.

22 Q. You're familiar with that LBJ study data, though, as  
23 far as having seen it before and reviewed the  
24 article, is that right?

25 A. I did look at the publication at one time. I haven't

1 reviewed it recently. And I was aware of the fact  
2 that the class was doing the study.

3 Q. Okay. Dr. Verstegen, I would like to show you what's  
4 been marked as Plaintiffs' Exhibit 95. Is this a  
5 page of the LBJ study that you used for the data that  
6 you reflected in your exhibit, Exhibit 47?

7 A. It looks like it's the very page I Xeroxed and sent  
8 to you at your request.

9 Q. Okay. Thank you. And I've got the actual book if  
10 you want to check it. I think that's right.

11 A. No, I recognize, because I yellowed out the bottom  
12 .801 and that shows in the Xerox.

13 Q. Fine. If we could look for a second, then, at some  
14 of this data, does the LBJ School data show  
15 correlations between wealth per pupil and operating  
16 expenditures, wealth per pupil and low teacher  
17 salaries, wealth per pupil and teacher salaries, that  
18 kind of information?

19 A. And average teachers' salaries as that last part,  
20 yes.

21 Q. Okay. So what you have shown on your 46, Page 46 of  
22 your study, is for instance, on operating  
23 expenditures per pupil, you showed '83-'84. For  
24 '83-'84, you showed a correlation of .61, and for  
25 '85-'86, you showed a correlation of .595, is that

1 correct?

2 A. Yes.

3 Q. And then you showed a decline of minus .015, is that  
4 correct?

5 A. Or the difference.

6 Q. The difference, excuse me.

7 A. Yes.

8 Q. According to the LBJ study, on Page 25, what was the  
9 correlation between wealth per pupil and operating  
10 expenditures per pupil in '84-'85?

11 A. .314.

12 Q. All right. .314, okay. So if this correlation  
13 between operating expenditures and wealth for '84-'85  
14 is correct, it shows a decline in that relationship  
15 between '83-'84 and an incline in that relationship  
16 between '84-'85 and '85-'86, is that right?

17 A. If underscored --

18 Q. Okay.

19 A. -- those data are correct for '84-'85.

20 Q. Okay. So, you have drawn in yours -- in your exhibit  
21 on Page 37, a statement that the change in operating  
22 expenditures was minus .015, is that right?

23 A. The operating expenditures from 1983-'84 to 1985-'86 --

24 Q. Okay.

25 A. -- was a change of .015 --

1 Q. Okay.

2 A. -- minus.

3 Q. Let me draw on the board, I apologize.

4 Now, we could also compute from these numbers,  
5 the change between '84-'85 and '85-'86, couldn't we?

6 A. We could do that, yes.

7 Q. And if we did and you'll go along with my  
8 subtraction, here, I think it's two, eight, one, the  
9 change between '84-'85 and '85-'86 is .281, is that  
10 correct?

11 A. From '84 to '85, to '85 to '86?

12 Q. Yes. Is that correct?

13 A. I can --

14 Q. Sure.

15 A. -- check, if you would like.

16 Q. Check my subtractions. We've got some good math  
17 people in here, I'm sure they're going to check me.

18 A. Yes, that is correct.

19 Q. Okay. If we interpret this correctly, the  
20 relationship between wealth and operating  
21 expenditures became a stronger relationship between  
22 '84-'85 and '85-'86, is that correct?

23 A. If you accept the reliability of '84-'85 data --

24 Q. Okay.

25 A. -- yes.



1 Q. Okay. And that '84-'85 data came from the same chart  
2 that you used for information in your paper on Table  
3 3.7, is that right?

4 A. That is right.

5 Q. Okay.

6 A. I used '83-'84 data.

7 Q. That's correct.

8 A. Now, if you take --

9 Q. Excuse me.

10 MR. KAUFFMAN: Your Honor, I don't want to  
11 fight with the witness, but I request an instruction  
12 that the witness be requested not to answer a  
13 question unless there's a question on the floor.

14 THE COURT: Okay. I think we all  
15 understand that.

16 MR. KAUFFMAN: Okay.

17 BY MR. KAUFFMAN:

18 Q. Dr. Verstegen, you also had a relationship -- you  
19 showed a correlation between wealth per pupil and low  
20 teachers' salaries between '83-'84 and '85-'86, is  
21 that correct?

22 A. I did.

23 Q. Okay. And we can go through this one a little bit  
24 faster, it was .434 in '83-'84, and it was .412 in  
25 '85-'86. And you showed that there had been a

1 decrease of minus .022, is that correct?

2 A. Yes.

3 Q. Okay. And in this case, we're talking about the  
4 relationship between wealth per pupil and average  
5 teachers' salary in the districts in Texas, is that  
6 correct?

7 A. That is.

8 Q. Now, if we were to put in --

9 A. Or is it low teachers' salary that you're referring  
10 to?

11 Q. I'm sorry, you're correct. I'm wrong, low teachers'  
12 salary.

13 If we then take from the LBJ study the  
14 correlation they got for '84-'85, what is that  
15 correlation for '84-'85?

16 MR. O'HANLON: Your Honor, at this time,  
17 it's assuming facts that are not in evidence, nor has  
18 the reliability been established.

19 THE COURT: You're talking about the LBJ  
20 report?

21 MR. O'HANLON: Yes, Your Honor.

22 MR. KAUFFMAN: Well, I think I can correct  
23 part of that. I would move that Exhibit 95 be  
24 admitted into evidence.

25 MR. O'HANLON: I object. It hasn't been

1 established, the predicate.

2 MR. KAUFFMAN: Well, excuse me, Your Honor,  
3 the witness has testified that this is some of the  
4 data that she used to put into her table. She said  
5 she was familiar with the study and looked at the  
6 study. And certainly for cross examination purposes,  
7 I can look at the data that she used and the data she  
8 did not use and look at the differences, I assume.

9 THE COURT: What predicate?

10 MR. O'HANLON: Okay. He's got to establish  
11 a predicate.

12 THE COURT: What predicate?

13 MR. O'HANLON: He's got to establish the  
14 document that he's -- he's asking the witness to  
15 testify with respect to the reliability of the data.  
16 This witness has said no. If it's something she said  
17 she would rely on, that's a different matter. That's  
18 the predicate that needs to be established, that the  
19 information is somehow reliable.

20 THE COURT: Okay.

21 MR. KAUFFMAN: May I go on then, Your  
22 Honor? Or do I need to establish a predicate? I'm  
23 sorry.

24 THE COURT: I think you need to establish  
25 that.

1 BY MR. KAUFFMAN:

2 Q. Dr. Verstegen, as the LBJ study was being produced,  
3 did you ever have a chance to talk with Dr. Norton  
4 Grubb about the development of that study?

5 A. Several times.

6 Q. Did you have a chance to review any of the drafts of  
7 that study, or comment, or consult with Dr. Grubb on  
8 the study?

9 A. He did give me a completed draft to review, to which  
10 I responded that if he came up with a point that he  
11 had difficulty with, I would be happy to look at that  
12 specific area. And that did not happen, so I did not  
13 write up a draft or a review. He did, in doing this  
14 study, however, mention to me concern about the  
15 integrity of the data.

16 Q. Dr. Verstegen, did you use some of the data from this  
17 Plaintiffs' Exhibit 95 when you drew up your Table  
18 3.7 that is in your study?

19 A. I did. I was going to use more, and I decided for  
20 comparison purposes, only to show this one table,  
21 therefore.

22 Q. Okay. Did you feel sure enough about the data from  
23 the LBJ study to draw comparisons like a relationship  
24 of a .610 correlation to a .595 correlation and then  
25 draw up a difference of minus .015? You felt

1 sufficiently sure of the reliability of that data to  
2 draw those sorts of comparisons from one year to the  
3 other?

4 A. Whenever possible, I did not use '84-'85 numbers,  
5 because those were the numbers in question. And  
6 also, the -- yes, because those were the numbers that  
7 I had a question about. And I believe those are the  
8 numbers you're putting up on the example, here.

9 Q. Okay.

10 MR. KAUFFMAN: Your Honor, I still move  
11 that the Plaintiffs' Exhibit 95 be admitted into  
12 evidence.

13 MR. O'HANLON: Same objection. He hasn't  
14 laid the proper predicate or foundation for its  
15 admissibility.

16 THE COURT: And that's the reliability of  
17 the figures?

18 MR. O'HANLON: Yes, Your Honor.

19 THE COURT: Well, I don't think you've  
20 gotten there yet, either.

21 MR. KAUFFMAN: Okay.

22 THE COURT: So, you want this in evidence?

23 MR. KAUFFMAN: Well, actually, I didn't.  
24 That was their objection. I just wanted to ask if  
25 these figures are correct, what are the trends? And

1 I certainly can do that on cross examination, I would  
2 think.

3 THE COURT: If those figures are correct --

4 MR. KAUFFMAN: Are these the trends?

5 THE COURT: Okay.

6 MR. KAUFFMAN: Okay.

7 BY MR. KAUFFMAN:

8 Q. All right. Let's go back and just make sure, then.  
9 We're talking now about the relationship between  
10 wealth per pupil and low teachers' salary. Dr.  
11 Verstegen, if the correlation for '84-'85 was .376,  
12 would that show that the relationship between wealth  
13 per pupil and low teachers' salary had increased  
14 between '84-'85 and '85-'86?

15 A. That the relationship if those figures were correct --

16 Q. That's correct.

17 A. -- which I am feeling that they're not. If those, in  
18 fact, are real numbers representing something, then  
19 yes, it did increase.

20 Q. Okay. Well, let's explain a little bit what we're  
21 talking about. The low teachers' salary, we're  
22 talking there about something like the minimum  
23 teachers' salary of the district?

24 A. I believe so, although I could check the exact  
25 definition, if you would like, at the break.

1 Q. Okay. Well, is it in your study?

2 A. Of the low teachers' salary?

3 Q. Yeah.

4 A. I believe I cited the study, itself.

5 Q. Okay. But excuse me, in your study, on Table 3.7,  
6 you have a figure for a low teachers' salary for  
7 '85-'86. What did you mean by low teachers' salary?

8 A. I'm -- probably, I would have to look that up, if you  
9 don't mind, so that I can give you a specific answer  
10 on that.

11 Q. Okay. Is it your best understanding that low  
12 teachers' salary is like a minimum teachers' salary,  
13 though, in a district?

14 A. I utilized it interchangeably with beginning  
15 teachers' salary.

16 Q. Excuse me.

17 A. So it was the beginning teachers' salary which was  
18 established for that district.

19 Q. All right.

20 A. And it was weighted by the number of teachers, to  
21 derive the actual correlation.

22 Q. Sure. So, generally, what this figure means, is that  
23 as districts get wealthier, their beginning teachers'  
24 salaries are higher, is that right?

25 A. That their -- that the two variables move in the same

1 direction.

2 Q. Okay. Move in the same -- as one goes up, the other  
3 goes up?

4 A. Yes.

5 Q. All right, fine. Thank you.

6 And that relationship, between '83-'84 and  
7 '84-'85, again, assuming these numbers are correct,  
8 went down. There was less of a relationship between  
9 wealth and beginning teachers' salaries, is that  
10 right?

11 A. I don't know if you're comparing apples and oranges,  
12 here, with these numbers, but yes, the number went  
13 down. And then in '85-'86, it went up.

14 Q. That's right.

15 A. Uh-huh.

16 Q. So, if the numbers are correct, between '84-'85 --

17 MR. O'HANLON: Your Honor, I've got to  
18 object. We're talking about an exhibit that's in  
19 evidence. (sic) The problem here is that this doesn't  
20 come out of data files, it comes out of a random kind  
21 of a survey that was done by students of the LBJ  
22 School. And its indicia of reliability just isn't  
23 very high. And they can't prove it up. Now, he's  
24 trying to get it in another way. And this witness  
25 has already said that she's unwilling to speculate



1 based upon it, and didn't want to use the numbers.  
2 So what my objection is, is he's assuming facts for  
3 his purpose of his hypothetical, that are not in  
4 evidence, nor is he likely going to be able to get  
5 them in evidence. So it's not even helpful to the  
6 Court.

7 MR. KAUFFMAN: Your Honor, as far as the  
8 survey, again, this data on Plaintiffs' Exhibit 95  
9 was used by the witness in her study. The previous  
10 year's data for '83-'84 was used.

11 MR. O'HANLON: She just used one number.

12 MR. KAUFFMAN: Well, as a matter of fact,  
13 that's incorrect. I think there are three, or four,  
14 or five numbers in here, from the '84-'85 study and  
15 she quoted it in her study.

16 THE COURT: Now, are you arguing that the  
17 predicate has been laid for it's admissibility?

18 MR. KAUFFMAN: No, I'm not trying to do  
19 that. I do feel it has been laid. I've been  
20 overruled, so I'm asking it as a hypothetical. As I  
21 recall, when our witnesses were being cross-examined,  
22 Your Honor, we had hypotheticals that went on for  
23 about four or five minutes, with 20 different parts.

24 MR. O'HANLON: The problem there is that it  
25 was -- we had a situation because of timing, that we

1           knew -- I did not, even when we talked about Dr.  
2           Lutz's report, I had agreed that it was admissible at  
3           that point. And we knew that it was coming in, it  
4           was just a matter that Dr. Lutz was not available,  
5           yet, to prove it up.

6           Now, we have a situation where this witness  
7           doesn't even ascribe to the validity of the study or  
8           its methodology. So we've got a fundamentally  
9           different kind of situation. The last one was one of  
10          timing, not of whether or not the document was  
11          ultimately going to come into the case.

12          THE COURT: You all got me off on this. So  
13          you let them do their thing. I don't like to do  
14          that. Let's just get back to what the objection is.

15          MR. KAUFFMAN: Okay.

16          THE COURT: You're not offering the --

17          MR. KAUFFMAN: No, I'm not offering it at  
18          this time. I did that and I was overruled. So, at  
19          this time, I'm just saying that -- using it as a  
20          hypothetical. If the numbers that appeared in the  
21          LBJ study, Page 25, from which the witness pulled  
22          other figures, if those numbers are correct, then I  
23          should be able to ask these questions about the  
24          trends.

25          MR. O'HANLON: Assumes facts not in

1 evidence.

2 THE COURT: Mr. Luna?

3 MR. R. LUNA: Basically, the objection is a  
4 hearsay objection. The hearsay is admissible under  
5 the expert witness rule only if it's data that an  
6 expert would consider reliable and would ordinarily  
7 rely upon. Her testimony has been the opposite of  
8 those numbers. Therefore, it's not an exception, it  
9 is hearsay. It certainly is to us, and we object to  
10 it, on that basis.

11 THE COURT: He's not offering it in  
12 evidence. He's offering it hypothetically. I don't  
13 know that a fact already has to be admitted into  
14 evidence for him to prove it up. He can  
15 hypothetically say, "Well, assume that there is or  
16 will be evidence that..."

17 MR. R. LUNA: And I agree with that. But  
18 the minute that he says, "Now, let's assume  
19 hypothetically and I'm quoting from Page 25 of the  
20 LBJ study," that's not a hypothetical, that's  
21 evidence. And that's what we object to.

22 THE COURT: Okay.

23 MR. R. LUNA: If he wants to assume there's  
24 some abstract number out there of .376 coming from no  
25 specific source, he can do that all day.

1                   MR. O'HANLON: But that's not particularly  
2 helpful to the Court.

3                   THE COURT: I agree with you about that,  
4 because lots of times, lawyers don't ever come back  
5 and prove up what they say they're going to. And  
6 then the fact trier has got to try to remember what  
7 wasn't proven up. But the rules allow for that. So,  
8 I have allowed you all to ask hypotheticals, with the  
9 assumption that the facts are going to be proven up  
10 later. And I will continue to do that, because I am  
11 supposed to do that.

12                  MR. O'HANLON: I understand that, but the  
13 author of this report is not on anybody's witness  
14 list.

15                  THE COURT: Okay. Well, what do you say to  
16 that?

17                  MR. KAUFFMAN: Your Honor, I'm not  
18 representing to the Court that I am going to prove up  
19 the report, although if I pushed hard enough, I  
20 could. For the time being, I would just like to ask  
21 if those numbers are correct. And if those are the  
22 numbers, what the patterns would show. It's correct,  
23 we do not have the author on the witness stand.

24                  On the other hand, this is a document that the  
25 witness is familiar with and the witness has used and

1           quoted from in her study, which is the subject of her  
2           testimony.

3           THE COURT: Maybe I missed it, but what  
4           I've gotten so far is that the figures that you're  
5           using, she doesn't specifically -- she wants to  
6           underscore if.

7           MR. KAUFFMAN: Uh-huh.

8           THE COURT: And that the figures that  
9           underlie about the figures that you're using are  
10          correct. I don't know the connection between the  
11          figures that she used, which I suppose she thinks are  
12          okay, and the figure you're using. I mean, I don't  
13          know --

14          MR. KAUFFMAN: Okay. Excuse me, Your  
15          Honor.

16          THE COURT: If I missed something, then I  
17          missed it. But I don't know that there's a  
18          connection there.

19          MR. KAUFFMAN: Okay. Let me try to ask  
20          something, if I could, then.

21          THE COURT: Okay.

22          BY MR. KAUFFMAN:

23          Q. Dr. Verstegen, again, you did use the information  
24          from this Page 25 of the LBJ study for operating  
25          expenditures per pupil, low teachers' salary and

1       average teachers' salary. You used that information  
2       in your study, is that correct?

3       A. Yes, in addition to Price Differential Index,  
4       equalization enrichment aid, and so forth, for the  
5       purpose of presenting the proper figures to compare  
6       over these figures.

7       Q. So you did use information from this Page 25, at  
8       least in five or six places in your study that you're  
9       presenting to the Court, is that correct?

10      A. On one page I showed a comparison of those numbers  
11      and the numbers I arrived at.

12      Q. Okay. And when you drew your comparisons on Page 46  
13      of your study, you're drawing comparisons between  
14      data from the LBJ study and data that you had  
15      performed, yourself, or it was performed under your  
16      direction, is that correct?

17      A. But I did not include those numbers you're including  
18      there in 1983-'84, because I do not believe them.

19      Q. Okay.

20      A. I beg your pardon, for '84-'85, unless they were the  
21      only ones available in the study.

22      Q. Okay.

23      A. The purpose was to serve as a corrective.

24      Q. What is the difference between the '83-'84 LBJ study  
25      information which you did use and the '84-'85 LBJ

1 information which you do not want to use?

2 MR. O'HANLON: Objection, Your Honor. He's  
3 asking her about the differences and he's trying to  
4 get it into evidence.

5 THE COURT: No, he's just trying to figure  
6 out how come she thought one was reliable and the  
7 other wasn't, that's all.

8 MR. O'HANLON: I'm curious about this whole  
9 line of questioning and its relevancy to the trial,  
10 anyway. If the Plaintiffs want to go back to the  
11 system that existed before House Bill 72, that's not  
12 in their pleading. And I'm not sure whether this is  
13 going to advance -- I think everybody has agreed that  
14 we're better off than we were then, so comparing it  
15 to -- I don't understand how this is going to be  
16 relevant to any issue before the Court.

17 THE COURT: Now you've got a relevancy  
18 objection.

19 MR. KAUFFMAN: Let me try to deal with that  
20 one. Your Honor, in this study, which the state as  
21 proffered as a relevant one, there has shown  
22 relationships between '83-'84 information and '85-'86  
23 information on these various correlations. I'm  
24 trying to show whether there was any difference  
25 between the first year of House Bill 72 and the

1 second year of House Bill 72. And whether that  
2 followed the same pattern or not. I also have an  
3 opportunity, when I'm cross examining the witness, to  
4 determine what information she decided to rely on and  
5 what information she decided not to rely on.

6 THE COURT: Okay. I'll overrule that  
7 objection.

8 Now, I guess I'll overrule the first one, also.  
9 And let him pursue the line of questioning that  
10 requires of her to explain why she used one year's  
11 figures and not the other.

12 BY MR. KAUFFMAN:

13 Q. Okay.

14 A. There was a large change in the system of financing  
15 education in Texas in 1984-'85. The data files were  
16 not set up to accommodate the particular areas that  
17 were specified under House Bill 72, the format of the  
18 data files.

19 Q. Uh-huh.

20 A. And there was a lot of speculation in school district  
21 budgeting that year, not knowing exactly what figures  
22 they would be receiving, or what figures they needed  
23 to levy for. The files changed, as I'm -- as I was  
24 aware of, looking at those files many times in that  
25 -- in those first several months, I believe, but



1           throughout the year.

2       Q.    Uh-huh.

3       A.    And to my knowledge, some of these files were from  
4           one time and some were from another time. And they  
5           were a real mixture for '84-'85. This was what I was  
6           referring to, in Mr. Grubb's comment to me. As a  
7           matter of fact, he gave me the files to do research  
8           with and I wouldn't use them to do research with. I  
9           simply didn't use them. When he left for Berkeley,  
10          he gave them to me. So, you see, I really don't have  
11          much faith in those numbers at all.

12               And in addition to that, in '84-'85, the system  
13           was just being phased in and some of the provisions  
14           weren't yet in full force. Mainly, however, it's the  
15           quality of the data that I object to, with the  
16           '84-'85 year, whereas '83-'84 was not a new year in  
17           financing education. However, because students were  
18           doing that study, because of a number of factors, I  
19           changed my approach and decided not to rely even on  
20           those numbers to any great extent. And cut that part  
21           of the study down to simply one table to show  
22           comparison in what I had found, once there was  
23           substantial implementation and what had been  
24           presented in another study. Simply that, I drew no  
25           conclusions about the differences.

1 Q. Okay.

2 THE COURT: Okay. So, the objection is --

3 MR. O'HANLON: The objection is that to --  
4 back again, to going any further, we're assuming  
5 facts that are not in evidence and they're not  
6 reliable.

7 THE COURT: Okay. And he's not going to be  
8 able to get them in evidence.

9 MR. O'HANLON: That's correct.

10 THE COURT: Does everybody agree to that?

11 MR. KAUFFMAN: Well, of course, I guess I  
12 could call Dr. Grubb as a rebuttal, now that I know  
13 that his information is not involved. But I don't  
14 plan to do that at this time.

15 THE COURT: I sustain the objection. No  
16 hypothetical questions concerning '84-'85.

17 MR. KAUFFMAN: With regard to this exhibit?

18 THE COURT: That's right.

19 BY MR. KAUFFMAN:

20 Q. Dr. Verstegen, if we can now go on to Page 48 of your  
21 study. On Page 48, you have summarized your  
22 different measures as far as weighted dispersion  
23 measures for total state and local revenue, is that  
24 correct?

25 A. Yes, I have.

1 Q. Okay. And you have talked to us, here, about the  
2 means, the standard deviation, various statistical  
3 measures, is that right?

4 A. Yes.

5 Q. Okay. Now, the revenue figures that you used in your  
6 Page 48 were the ones we were talking about earlier  
7 that were adjusted for cost, is that correct?

8 A. They were adjusted for additional costs for similar  
9 needs.

10 Q. I understand.

11 A. For vertical considerations, yes.

12 Q. Okay. Now, if we can look for a moment at the range  
13 figure, here, under all districts, the range,  
14 \$9,781.00. That is the range between one adjusted  
15 figure and another adjusted figure, is that correct?

16 A. Between the figures as we've defined them, yes, that  
17 is correct.

18 Q. Okay. Now, there might be a larger range, in fact,  
19 there probably would be a larger range if you looked  
20 at the range of the unadjusted revenue figures, is  
21 that correct?

22 A. Not necessarily, because the poorer districts, let's  
23 say for a hypothetical example, may have many, in  
24 this example, compensatory education students. And  
25 so they're getting more money for those compensatory

1 education students. So overall, when you include  
2 that extra money, they actually are getting more  
3 dollars. When you take that compensatory education  
4 money off, what it does is pull the bottom down, in  
5 this example. Makes it look like they have less  
6 money. You see?

7 Q. No, but let me ask again and make sure. I can try to  
8 understand this.

9 A. Okay.

10 Q. If you have a district, let's say at the bottom, that  
11 actual revenues, in terms of dollars, without any  
12 adjustments, they're just state local revenues as  
13 you've defined it, without any adjustments for PDI or  
14 any of that, they've got, let's say, \$2,000.00 per  
15 student, okay? After you make the adjustments for  
16 weighted students and for PDI and those things, that  
17 number will go down from \$2,000.00 per student to  
18 some other lower number per student, won't it?

19 A. In this example, it would.

20 Q. Okay.

21 A. Now, given that you have a real small district with  
22 no transportation and not a lot of compensatory  
23 education students, hypothetically, it might not  
24 change. So, does that answer your question, Mr.  
25 Kauffman?

1 Q. Well, no, but I'll try again, okay?

2 Dr. Verstegen, in your study, have you -- I  
3 don't think you've listed for us the various revenues  
4 that various districts in the State of Texas do have,  
5 under your formulas, is that right?

6 A. I believe you requested the exact specification of  
7 that beyond the study information, and I mailed it to  
8 you. Did you receive those pages?

9 Q. I don't think so, but do you have a list of the  
10 actual revenue per pupil figures that you used for  
11 each district in the state?

12 A. Yes, I do. And I do apologize, I sent it with the  
13 deposition to the court reporter.

14 Q. Excuse me, you have their deposition --

15 A. And sent you a copy of the letter saying that you  
16 would receive those, so --

17 Q. But --

18 A. Yes, the state aid and the local revenue.

19 Q. All right. But --

20 MR. KAUFFMAN: May I approach the witness,  
21 Your Honor?

22 THE COURT: Yes.

23 BY MR. KAUFFMAN:

24 Q. I would like to show you what we obtained during the  
25 Rossmiller deposition, which Dr. Rossmiller said was

1       the data on which he based his analyses of ranges.  
2       And it's titled "Total Revenue Excluding  
3       Transportation and Adjusted for Size Price  
4       Differential in Special Programs, '85-'86 School  
5       Year." It lists districts in the State of Texas and  
6       revenue per pupil. Does that appear to be the actual  
7       numbers on which your analyses were based?

8       A.    Gosh, I wish I could take all of these numbers in, in  
9       just this short time and tell you.

10      Q.    Okay.

11      A.    It looks very similar. It was this type of format,  
12      yes.

13      Q.    Okay. Well, maybe you ought to check one or two of  
14      these, then, and make sure I've got it right. What  
15      is the lowest revenue per pupil on that list of  
16      revenues I've given you?

17      A.    The lowest revenue is \$1,694.00. And that's also  
18      stated on this Page of 48, and it says low, under the  
19      range.

20      Q.    That's right.

21      A.    \$1,694.00.

22      Q.    Okay. And what is the high revenue on the exhibit  
23      that I've given you?

24      A.    \$11,475.00 is what's listed in the book. And that's  
25      also what's -- excuse me, what's listed in the

1 printout. And that's also what's listed on Page 48.

2 Q. Okay.

3 MR. RICHARDS: Here is the deposition and  
4 maybe it's got the material in it.

5 BY MR. KAUFFMAN:

6 Q. Dr. Verstegen, this is what Dr. Rossmiller has given  
7 us and stated was Exhibit B to his deposition. Does  
8 this appear to be the list used in your study, just  
9 from these numbers, revenue per pupil?

10 A. From the very bottom one and the very top one, it  
11 does.

12 Q. All right. Thank you.

13 The range, then, on your list that you used for  
14 your study was \$9,781.00, is that right?

15 A. The -- yes, the absolute extremes in the  
16 distribution.

17 Q. Okay. Fine.

18 Now, you've also done some things called  
19 restricted ranges, and 95th and 5th percentiles, and  
20 90th and 10th percentiles, and those sorts of things.  
21 Were those figures taken from an array of numbers  
22 like this, on revenues per pupil?

23 A. Yes.

24 Q. So, if we could go through, let's make sure we  
25 understand how you did that. If I can come look over

1 your shoulders, for a second, I only have one copy of  
2 this.

3 Is what you did, you added up the students in  
4 the state until you came to the 5th percentile  
5 district and found the revenue per pupil at that  
6 point?

7 A. First, there was a ranking by total state and local  
8 revenue --

9 Q. Sure.

10 A. -- adjustments as we've defined them.

11 Q. Uh-huh.

12 A. And pupils, in each one of those districts, were  
13 carried along and then cumulative percentages of the  
14 pupils in the state were this -- were the column on  
15 the right.

16 Q. I see.

17 A. Were located in the column on the right. And yes,  
18 the first observation that reached --

19 Q. Uh-huh.

20 A. -- five percent. You have a mark here between 4.99  
21 and 5.0. I utilized the first time it actually hit  
22 5.0.

23 Q. Okay. So what did you use for your 5th percentile?

24 A. The first time the cumulative pupils went beyond or  
25 reached five percent, but never below that.



1 Q. Okay. What would that revenue be?

2 A. Of the dollar figure?

3 Q. Yes.

4 A. 1,997.

5 Q. And what was the revenue of the 95th percentile?

6 A. And that's also what's listed on Page 48.

7 Q. Okay. What is that?

8 A. It's \$2,965.00.

9 Q. Okay. And do the numbers on this printout I've just  
10 handed you, are they the same ones that you used in  
11 your report?

12 A. I'm sorry, the first number here is \$2,962.00. Is  
13 that what I mentioned?

14 Q. Sure. Uh-huh.

15 A. Yes -- oh.

16 Q. Fine.

17 A. Okay? Yes, it is.

18 Q. Okay. And you took that difference, which is  
19 \$965.00, is that correct?

20 A. Yes.

21 Q. Okay. Now, what you did there was, you compared the  
22 district of the 95th percentile and the district of  
23 the 5th percentile, and you've found that there's a  
24 range of \$965.00, is that right?

25 A. No, I didn't.

1 Q. Okay.

2 A. I compared five percent of the students to 95 percent  
3 of the students.

4 Q. Okay. So after you added up the five percent of the  
5 students, you found a district that was at that point  
6 and you put its revenue per pupil at that district,  
7 is that right?

8 A. Yes, the percentiles were calculated on total extent.

9 Q. I understand.

10 A. The revenue variables were carried along by district.

11 Q. Okay.

12 A. Because as you pointed out, that the students  
13 weighted one average district revenue figure rather  
14 than repeating it for each single percentile, it was  
15 carried along in that fashion.

16 Q. Then you divided the difference, here, between the  
17 95th and 5th, by the number at the 5th percentile,  
18 and you found what you call your restricted range, is  
19 that right?

20 A. I beg your pardon?

21 Q. Excuse me, your Federal Range Ratio, I guess, is that  
22 right?

23 A. Yes.

24 Q. Okay. Fine.

25 Now, looking at it in terms of students is one

1 way to analyze that array of districts, isn't it?

2 One way to look at it and compare top to bottom, and  
3 that sort of thing?

4 A. That's the only way to look at percentage of students  
5 that's reputable, as far as I'm concerned.

6 Q. Okay. Could you also look at the districts -- look  
7 at the districts in the top five percent of districts  
8 and the bottom five percent of districts and look at  
9 it that way?

10 A. No.

11 Q. I mean, you could do it. You wouldn't want to do it,  
12 but you certainly could?

13 A. You could do anything, but it wouldn't be very  
14 accurate for looking at pupil equity, now would it?  
15 If you had five percent of districts with only three  
16 percent of -- or less than one percent of the pupils --

17 Q. Okay. If --

18 A. -- something along that nature.

19 Q. Okay. If you were to be told that Dr. Rossmiller,  
20 when he did his analysis, looked at this range of  
21 districts, both at the districts of the percentiles  
22 and the students at the percentiles, would you be  
23 surprised that he had looked at it both ways?

24 A. That he looked at it both ways?

25 Q. Yes.

1 A. Perhaps he was trying to ascertain the size of the  
2 districts in Texas.

3 Q. Okay.

4 A. I don't know what his -- was going on in his mind,  
5 there, if that's what you were asking me.

6 Q. Would it not surprise you if he were at least to have  
7 been interested enough in that to have looked at it  
8 by district, is that right?

9 A. Sometimes that gives you a good handle on, actually,  
10 if you want to compare if the percentages of  
11 districts matches the percentage of pupils, it gives  
12 you the handle on size and ranges of the size of the  
13 districts.

14 Q. Okay. So you --

15 A. You see, if there's no difference, then you can use  
16 districts and it's perhaps easier if it mirrors  
17 percentage students. But I can't answer for Dr.  
18 Rossmiller.

19 Q. Okay.

20 A. So, I don't really know what he was thinking.

21 Q. Okay. Fine.

22 Would you agree that there's one unit of  
23 analysis talked about as pupil units and one as, I  
24 guess, district units. And that while both units of  
25 analysis are currently utilized in actual empirical

1 assessments of equity, the pupil unit of analysis  
2 predominates. Will you agree with that?

3 A. I would agree that the pupil unit probably  
4 predominates --

5 Q. Uh-huh.

6 A. -- unless someone hasn't gone through the methodology  
7 and the reading in the literature and mistakingly  
8 uses the district. Or in the case where I was saying  
9 the district matches the pupil percentage.

10 Q. Would you agree that both types of analysis are  
11 currently utilized?

12 A. I cannot think of an example of a district unit of  
13 analysis being utilized, or being suggested that it's  
14 utilized that way.

15 Q. Okay.

16 A. Now, someone could come along and do that and it  
17 could have escaped me.

18 Q. Uh-huh.

19 A. But in the scholarly literature, I have not noted  
20 that.

21 Q. Okay. During your Direct Examination, you've talked  
22 about the Berne and Stiefel book quite a bit?

23 A. Yes.

24 Q. Do you have your copy with you?

25 A. I don't.

1 Q. Okay. Let me look at some of this with you, if I  
2 could. You're familiar with the book, certainly?

3 A. Somewhat, yes.

4 Q. Okay. If we can look at Page 59, they go through, as  
5 I understand it, an analysis of various units of  
6 analysis, district and pupil units of analysis --

7 A. Yes.

8 Q. -- on Page 55. And then they talk about pupil unit  
9 of analysis on 57?

10 A. Yes.

11 Q. Are these the sorts of analysis we've been talking  
12 about, district and pupil units of analysis?

13 A. They're formulating an example to show you why you  
14 need to use pupils. And why a district unit would be  
15 incorrect.

16 Q. If we could look on Page 59 of this, and if you'll  
17 follow with me. Does it say that, "Second, while  
18 both units of analysis are currently utilized in  
19 actual empirical assessments of equity, the pupil  
20 unit of analysis predominates." Do you agree with  
21 that?

22 A. As I said, you might find someone -- I suppose we  
23 find the best and the worst uses of data analysis  
24 throughout the field. But I also see he said, there,  
25 that "Since children's equity is concerned with

1           pupils, it seems to us that each pupil should receive  
2           equal weight, regardless of the size of the district  
3           in which he or she is enrolled."

4       Q.    Okay.

5       A.    So --

6       Q.    But do you agree?

7       A.    That you may find it if you looked hard enough?

8       Q.    Well, do you agree that both units of analysis are  
9           currently utilized?

10      A.    I suppose you could find a district unit of analysis  
11           and that someone would utilize it, sure.

12      Q.    Okay.  Sure.  Now, you said that Dr. -- of course,  
13           you didn't know, but you said that Dr. Rossmiller, if  
14           it turns out he did do both analyses, might have done  
15           both just to see if there would be any differences  
16           between the two, or if one affected the other, that  
17           sort of analysis?

18      A.    I probably shouldn't try to think for Dr. Rossmiller.  
19           I guess you can ask him, because he may be available  
20           for you to discuss this with.

21      Q.    But if he had done such an analysis in his notes,  
22           would that give you more confidence, at least, that  
23           it was one sort of analysis that was still used?

24      A.    Whether something is used doesn't mean that it is  
25           correct.

1 Q. Okay.

2 A. Or that it is the best of what we know. And as I  
3 said, he may have had several reasons for doing both  
4 types.

5 Q. Uh-huh.

6 A. And you may wish to ask him about that.

7 Q. Oh, I'm sure.

8 A. I don't feel that a district unit of analysis merits  
9 much weight.

10 Q. Okay.

11 A. We're talking about pupil equity and not district  
12 equity, here.

13 Q. Okay. If we can look at the districts on this  
14 printout, and do you feel fairly sure -- now, this is  
15 the printout on which your data analysis was based in  
16 terms of revenue per pupil? It seems to line-up with  
17 yours.

18 A. It seems to be somewhat the same, yes, so far.

19 Q. Okay. If we could look for a second at the districts  
20 at the 5th percentile and the 95th percentile, there  
21 are about 1,063 districts in the state, is that  
22 right? Excuse me, on your list?

23 A. Yes, it's listed right here at the top, 1,063 regular  
24 districts.

25 Q. Okay. And five percent of those would be about 53



1 districts, is that right?

2 A. Yes, approximately.

3 Q. Okay.

4 A. Uh-huh.

5 Q. Can you look and tell me what the revenue per pupil  
6 is of the 53rd district?

7 A. The 53rd district, which to this point, has 3.65  
8 percent of the pupils, has a revenue of \$1,949.00.

9 Q. Okay. Now, can we start at the other end, at the  
10 highest revenues and count down 53 districts. That  
11 would give us, I guess, the 95th percentile of  
12 districts?

13 A. Uh-huh. The district at the 1,000 -- excuse me,  
14 1,010 district --

15 Q. Uh-huh.

16 A. -- with approximately 99.6 percent of the students,  
17 has \$4,287.00.

18 Q. Okay. Now we could, I guess, subtract these figures  
19 and see the difference between the district at the  
20 95th and the district at the 5th, couldn't we?

21 A. You could do just about anything here.

22 Q. Sure. Okay. If we did that, we would find the  
23 difference between the district of the 95th  
24 percentile and the district at the 5th percentile, of  
25 \$2,338.00, is that correct?

1 A. Yes, it is. I don't know how meaningful it is,  
2 though.

3 Q. Okay. And if we took that difference, \$2,338.00, and  
4 divided that by the district at the 5th percentile,  
5 \$1,949.00 -- you know, I've got so many notes, I lost  
6 my number.

7 Can somebody do this for me? Must be a  
8 mathematician out there, somewhere.

9 MR. MOAK: Do that division?

10 MR. KAUFFMAN: Yeah, divide \$2,338.00 by  
11 \$1,949.00.

12 MR. MOAK: 1.2.

13 MR. O'HANLON: 1.2.

14 MR. KAUFFMAN: 1.2? Okay.

15 BY MR. KAUFFMAN:

16 Q. All right. So, Dr. Verstegen, if you use the pupil  
17 analysis you decided to use, you come up with the  
18 95th percentile being 48 percent higher than the 5th  
19 percentile, is that right?

20 A. The Federal Range Ratio of a .48.

21 Q. Okay. And if you use the district at the 95th  
22 percentile compared to the district at the 5th  
23 percentile, you end up with 1.2 range ratio, is that  
24 correct?

25 A. Yes.

1 Q. Okay. Now, in terms of what these numbers mean, does  
2 this .48 mean that the district at the 95th  
3 percentile is roughly 48 percent higher than the  
4 district at the 5th percentile?

5 A. Yes.

6 Q. If you have the restricted range of -- well, the  
7 range ratio of 1.2, that means the district at the  
8 95th percentile is 120 percent higher than the  
9 district at the 5th percentile, is that right?

10 A. Yes, that is right. Excuse me, I think right is the  
11 wrong word. I see that those are your calculations,  
12 yes.

13 Q. Okay. Are the calculations correct?

14 A. Oh, I see, yes.

15 Q. Okay, fine.

16 A. I don't agree.

17 Q. And if we did this by looking at the districts, the  
18 actual range, the restricted range, the dollars  
19 between the 95th and the 5th would be \$2,338.00  
20 instead of \$965.00, is that right?

21 A. Excuse me. I'm sorry, I didn't hear you.

22 Q. Excuse me. I said, if we looked at the dollars of  
23 revenue at these points, and you did it by the  
24 districts, five percent of the districts -- the top  
25 five percent of the districts at the bottom, the

1 range of revenues would be \$2,338.00, rather than the  
2 \$965.00 figure that you showed in your analysis on  
3 the restricted range, is that right?

4 A. Yes.

5 Q. And similarly, we could look at -- you also looked at  
6 the 90th and the 10th percentiles and found a range  
7 for that as well, didn't you, on Page 48?

8 A. I did.

9 Q. Okay. We could do a similar thing on the districts.  
10 Looking at the districts, the 90th percentile, and  
11 the district at the 10th percentile, and see what  
12 that looked like, couldn't you?

13 A. You could use a variety of methodologies, but the  
14 attempt was to use the one which we find that truly  
15 assesses equity for kids. And there's substantial  
16 literature behind using one or the other. And my  
17 attempt was to use a legitimate form of measurement,  
18 according to the support of the literature. And I  
19 believe, if you do look through the Berne book,  
20 throughout all of his data, are done on pupil unit of  
21 analysis.

22 Q. Dr. Verstegen, back to your -- what you call the  
23 coefficient of variation. And on Page 48 of your  
24 study, you talk about that a little bit, don't you?  
25 48, 49, I think you talked about it?

1 A. Yes.

2 Q. Okay. I think your comment was that the coefficient  
3 of variation for '85-'86 was 15.9 percent. And that  
4 means that two-thirds of all students, or \$380.00  
5 below, or \$380.00 above the median, is that about  
6 right?

7 A. Yes.

8 Q. And that about 90 percent would be from \$760.00 above  
9 to \$760.00 below the median, is that about right?

10 A. About nine-tenths, yes.

11 Q. Okay. Now your median figure is \$2,390.00, is that  
12 right?

13 A. Yes, the adjusted figure.

14 Q. Okay. So, if we can look at -- excuse me, Dr.  
15 Verstegen, my co-counsel has asked me to double check  
16 on this. These figures we are talking about do not  
17 include the facilities or debt service revenues, is  
18 that right?

19 A. In equity analysis, as we discussed earlier, it isn't  
20 included, usually, and it isn't here, either.

21 Q. We have \$2,390.00 median, and you have \$760.00 above  
22 and \$760.00 below?

23 A. For nine-tenths?

24 Q. Yeah.

25 A. For almost all of the entire -- yes.

1 Q. Okay. And if you'll check my figures for me here  
2 again, if you add \$760.00, I think you go up to  
3 \$3,150.00. And you go down \$760.00 and you get  
4 \$1,630.00, is that right?

5 A. I'll trust your figures.

6 Q. Okay.

7 A. Okay.

8 Q. So, what you're saying is, 90 percent of the kids fit  
9 within this range of about \$1,500.00?

10 A. Yes.

11 Q. Okay. So there's still five percent of the kids that  
12 are below and five percent of the kids that are above  
13 those ranges, under your figures, is that right?

14 A. Exactly. Now, remember that a coefficient of  
15 variation assumes a bell curve distribution of the  
16 population.

17 Q. Okay.

18 A. Okay.

19 Q. But you mentioned the coefficient of variation in  
20 your study. And you mentioned these numbers that  
21 I'm using right here, didn't you?

22 A. Yes.

23 Q. Okay, fine.

24 A. But I did want to point out that they were different  
25 than the actual real restricted range numbers, which

1 included 90 percent of the students, which were  
2 \$965.00, which this shows a different -- difference,  
3 because of the --

4 Q. Uh-huh.

5 A. -- assumption that's built into this measure of a  
6 normal distribution of the population.

7 Q. Okay. So, if you used one of your measures, you get  
8 a range of \$1,500.00, and another one, you get a  
9 range of \$965.00, is that right?

10 A. The intent is to give you that coefficient of  
11 variation, which is inflation proof and can be  
12 compared across states and over time.

13 Q. Okay.

14 A. So, it's a measure of the variability. How much does  
15 each individual student vary from the next?

16 Q. But in your study, on Page 49, you stated that the  
17 coefficient of variation for that year was 15.9  
18 percent. Which means that about two-thirds of all  
19 students were within 15.9 percent of the statewide  
20 average and that more than nine-tenths of the  
21 students were within 31.8 percent, and you said  
22 \$760.00 of the statewide average, was that your  
23 figures?

24 A. My figures? Which ones? The 15.9 is the coefficient  
25 of variation that I found in the research, yes.

1 Q. But you also --

2 A. The mean was -- yes, I wrote that, yes.

3 Q. Okay. And you also said, that within \$760.00 of the  
4 mean would be nine-tenths of the students. Is that  
5 what you said?

6 A. Yes, this is the way you can interpret a coefficient  
7 of variation. That's why I'm adding this additional  
8 information, so that you can see, should you delve  
9 further into this, why you might find a difference.  
10 The purpose of that coefficient of variation is to  
11 give you a number. And you can compare that number  
12 over time, which I did.

13 Q. Okay. Now, the coefficient of variation, then, is  
14 very useful in comparing a school finance system from  
15 one year to another, I guess, is that correct?

16 A. Yes.

17 Q. And from what you're saying, here, that's one of the  
18 main uses for it. That's one of the things you want  
19 to do with it, is that correct?

20 A. You can use it for that and it also gives you an idea  
21 of the variability of the distribution.

22 Q. Let's talk a little bit about the McLoone Index for a  
23 second.

24 The McLoone Index, you had .933, is that right?

25 A. Yes.



1 Q. You have a McLoone Index of .933. The McLoone Index  
2 looks only at the bottom half of the distribution, is  
3 that right?

4 A. That's right.

5 Q. You were drawing some graphs up here, let me try to  
6 sort of draw one, too. Let's say this is wealth at  
7 the bottom, and this is revenue over here.

8 A. Okay.

9 Q. And this is your, sort of your middle point, median,  
10 or whatever you want to call it, of wealth, is that  
11 okay?

12 A. Okay.

13 Q. So, under the McLoone Index, if you had a situation  
14 where your revenues were all alike, right to the  
15 middle -- is that right? I mean, if every district,  
16 from the poorest to the middle wealth, had exactly  
17 the same revenue, your McLoone Index would be one, is  
18 that right?

19 A. That isn't exactly what a McLoone Index is. You take  
20 the total expenditures below the median.

21 Q. Uh-huh.

22 A. And the -- if you had all of the pupils at the  
23 median --

24 Q. Uh-huh.

25 A. -- not median expenditures across districts, but

1           every pupil in the state received the median dollar  
2           amount. They all were brought up to the middle --

3       Q.    But it's --

4       A.    -- that would be a one.

5       Q.    Okay. But isn't it just every student, I guess, at  
6           the bottom part of the wealth, were at least at that  
7           level? I mean, it would be all of the students in  
8           the state were at least that level of revenues, is  
9           that what it says?

10      A.    If all of the students in the state were at least at  
11           the middle revenue --

12      Q.    Okay.

13      A.    -- if they all were brought up to the middle --

14      Q.    Okay.

15      A.    -- of the distribution, that would be a one.

16      Q.    Okay. I must have misunderstood you. Wait a second.  
17           What page did you explain your measures?

18      A.    I remember explaining them thoroughly, the other day.  
19           Now, I'm not sure if -- oh, I know what you're  
20           referring to. Let me find that page for you.

21      Q.    Okay. On Page 15.

22      A.    On Page 15? Uh-huh.

23      Q.    Yeah. All right. It weighs the lower half of the  
24           distribution more heavily than the other measures?

25      A.    Yes, it only looks at the lower half of the

1 distribution.

2 Q. Okay. If you had a situation, then, where the wealth  
3 -- that the revenue was the same for all of the  
4 bottom half of the wealth, here, and then your  
5 revenue went up pretty quickly, would this affect  
6 your McLoone Index?

7 A. It only looks at the bottom half of the distribution,  
8 whereas the other measures look at --

9 Q. Okay.

10 A. -- either the entire, or most of the entire  
11 distribution.

12 Q. Okay. So under the McLoone Index, if you had this  
13 situation that I've shown here, where your revenues  
14 were the same for all of your districts to the  
15 mid-wealth --

16 A. Oh, I see what you're saying.

17 Q. -- and then your revenues went up very quickly, you  
18 could still have a very fair, like a very high  
19 McLoone Index, around one, is that right?

20 A. Well, you see, first of all, it takes a whole  
21 distribution of revenues for every single pupil in  
22 this state, and think of ranking that from top to  
23 low, top to bottom.

24 Q. Okay.

25 A. It finds the middle of that distribution.

1 Q. Uh-huh.

2 A. Then it looks at the dollars required for raising the  
3 pupils below the middle to the middle.

4 Q. Okay.

5 A. Okay? So yes, if all of your pupils were at the  
6 middle --

7 Q. Uh-huh.

8 A. -- you would get a one. Although that's a  
9 hypothetical, because then you would have a new array  
10 and a new middle. Exactly. You see what I mean?

11 Q. I think so. Now, on the range ratio, again, the  
12 Federal Range Ratio, you gave us some ranges on Page  
13 50 of what was appropriate and what was  
14 inappropriate. Can you explain those ranges to me  
15 for a second, please?

16 A. Now, there, I was quoting another source. If that's  
17 what you are referring to.

18 Q. You were quoting another source that was quoting  
19 Rossmiller, is that right?

20 A. Yes, I was.

21 Q. Okay. Well, give me your explanation or  
22 understanding of what these ranges are in the Federal  
23 Range Ratio. What's an equitable one and an  
24 inequitable one, or whatever?

25 A. Well, now I'm not sure we're talking about the same

1           thing, here. You see, what I'm talking about, there,  
2           if you'll look at the beginning of that sentence,  
3           starting with The, on Page 49. The restricted range  
4           ratio was 1.48, not the Federal Range Ratio.

5   Q.    Okay.

6   A.    So, I am talking about the restricted range at the  
7           95th and 5th percentile --

8   Q.    All right.

9   A.    -- and that ratio.

10   Q.   Let's talk about the restricted range ratio, then.

11   A.   Okay. It was 1.48. And according to Rossmiller, a  
12           restricted range ratio of 1.5 or below would be  
13           acceptable evidence of an equitable system of school  
14           finance, while a ratio of 2.0 and higher, indicates  
15           unacceptable equity. I put 2.0-to-1.0. That's what  
16           that means, 2.0 and higher --

17   Q.    Okay.

18   A.    -- indicates unacceptable equity.

19   Q.    And what about the range between 1.5 and 2.0?

20   A.    It's a gray area.

21   Q.    Now, the 2.0 means that you have five percent of the  
22           children in the state that have revenues that are at  
23           least twice what the five percent at the bottom of  
24           the state have, is that right?

25   A.    The 2.0? Yes.

1 Q. Yes.

2 A. It would be twice as much.

3 Q. Okay. And in fact, the 2.0 ratio is really, in terms  
4 of looking at the top five percent and the bottom  
5 five percent, the 2.0 sort of is the minimum  
6 difference between those districts, isn't it?

7 A. What do you mean, the minimum difference?

8 Q. Okay.

9 A. The 2.0 is the minimum difference?

10 Q. Yeah.

11 A. Yes.

12 Q. If we look at the exhibit that you got your  
13 information off of --

14 A. Uh-huh.

15 Q. -- the 95th percentile, every district above that, if  
16 we look at the very end, here. The 95th percentile  
17 is, what -- Montgomery ISD or Richardson?

18 A. Richardson.

19 Q. Richardson. Okay.

20 A. Uh-huh.

21 Q. Every district above Richardson has higher revenue  
22 than Richardson, right?

23 A. Yes.

24 Q. Okay.

25 A. It's ranked.

1 Q. It's ranked, I understand. It was a simple question,  
2 I thought. Excuse me.

3 So, everything above the 95th percentile is  
4 going to be higher than the one at the 95th  
5 percentile, is that correct?

6 A. Yes.

7 Q. Everything below the 5th percentile is going to be  
8 below the 5th percentile, is that right?

9 A. Yes.

10 Q. So, your ratio of 2.0-to-1.0 is taking the lowest of  
11 the high and comparing it to the highest of the low,  
12 is that right?

13 A. It's the lowest of the high, if you're defining high  
14 as the 95th to the 100th percentile, then according  
15 to your definition, it's the lowest of the high.

16 Q. Okay. And if you're defining low, as you did, the  
17 bottom five percent, then you're looking at the  
18 highest of the low, is that right?

19 A. Well, I meant the extreme values when I used the  
20 words high and low. That in a restricted range, you  
21 look at revenues at the 95th and the 5th.

22 Q. Okay.

23 A. But yes, that's exactly -- I think we're talking  
24 about the same thing.

25 Q. So, if you look at the district at the 95th

1 percentile compared to the district at the 5th  
2 percentile, the one at the 95th percentile, after  
3 you've adjusted for all of the costs you've done and  
4 weighted students and everything, the kids in that  
5 district are still having twice as much spent on them  
6 as the kids in the 5th percentile district, is that  
7 right?

8 A. Are they? In the statement of Rossmiller, if they  
9 were, it would be unacceptable. But no, they aren't,  
10 less than 50 percent.

11 Q. Okay.

12 A. We've got a restricted range ratio of 1.48.

13 Q. But under his analysis, if that were the system, the  
14 kids at the 95th percentile, after all of the  
15 adjustments or whatever, would have twice as much  
16 spent on them as the kids in the 5th percentile, is  
17 that right?

18 A. Yes.

19 Q. Now, as you went up, as you went to the 96th  
20 percentile and the 4th percentile, it would be even  
21 greater than two?

22 A. The 96th and the 4th?

23 Q. The 4th.

24 A. It depends on what your distribution would look like.  
25 Sometimes, you can have many districts, or many



1 students going up into the 95th, 96th percentile, and  
2 it stays kind of flat. Sometimes it rises.

3 Q. It would be at least 2.0 or higher, though, is that  
4 right?

5 A. Yes.

6 Q. Okay. Now, that 2.0, let's talk about what that  
7 means in terms of this revenue figure. That means  
8 that the district at the 95th percentile could  
9 afford, for instance, to pay its teachers twice as  
10 much?

11 A. Not necessarily.

12 Q. Okay. Why not?

13 A. Because there's several other costs that one  
14 considers. And I don't know if you can take a  
15 straight two times difference and start applying it  
16 to everything. Naturally, teachers, different salary  
17 levels, different experience levels, to double  
18 salaries, depends on a variety of things.

19 Q. Okay. But the district, again, the 2.0-to-1.0 thing,  
20 the district of the 95th percentile would have  
21 \$4,000.00 revenue after you made your adjustments and  
22 the district at the 5th percentile, \$2,000.00 revenue  
23 after you've made your adjustments, is that right?

24 A. Yes.

25 Q. So, whatever that district at the 95th percentile

1           could do with \$4,000.00 a student, and whatever the  
2           district could do at \$2,000.00 a student, that would  
3           be, I guess, up to the district, is that what you're  
4           saying?

5       A.    Yes.

6       Q.    Okay. Now, will you assume with me, that if you have  
7           -- if you have 10 students and you have that  
8           \$4,000.00 a student, you have \$40,000.00 to spend.  
9           If you have 10 students at \$2,000.00, you have  
10          \$20,000.00 to spend?

11     A.    Yes.

12     Q.    Okay. There's simply no doubt with that \$40,000.00,  
13           you're going to be able to pay higher teacher  
14           salaries, spend more on buildings, buy more supplies,  
15           better teacher/pupil ratios, isn't that right?

16                   MR. RICHARDS: Buildings aren't in there.

17     BY MR. KAUFFMAN:

18     Q.    The buildings aren't in there, excuse me.

19     A.    It depends on how you choose to use that money. But  
20           if you put it into the same things, you can probably  
21           spend more. I don't know if that would make a  
22           difference, but you probably -- yes, I agree.

23     Q.    Okay. So, if you have your district I'm talking  
24           about, and you have 10 teachers in there, and all of  
25           a sudden you have \$2,000.00 revenue, and the next

1           year you have \$4,000.00 revenue, same teachers, same  
2           basic scale, you'd be able to at least double their  
3           salaries and still have a little extra money left,  
4           won't you?

5       A.   Well, it depends on what you do with it. You could,  
6           perhaps, yes.

7       Q.   Okay. Now, in terms of the Rossmiller standards,  
8           your number was 1.48 and his dividing line for  
9           equitables is 1.50, is that right?

10      A.   Yes.

11      Q.   Okay. Now, if you looked at that 95th to 5th  
12           percentile, based on the district analysis that I did  
13           before, you get 2.2, don't you?

14      A.   I don't think you can look at a district analysis. I  
15           imagine you can look at a regional service center  
16           analysis, too, but I just don't think that's a valid  
17           analysis.

18      Q.   Okay. You wouldn't want to do anything like that  
19           yourself, is what you're saying?

20      A.   I wouldn't want to. I think that there may be  
21           differences in revenues, put local control figures in  
22           there, sometimes there's a higher tax rate, people  
23           want to spend more on education. And if they want  
24           to, that local control variable is then realized in  
25           their seeing more dollars for their higher tax rate.

1 Q. Dr. Rossmiller, I would now like to turn to pages --  
2 Oh, excuse me. Dr. Verstegen, excuse me.

3 I would like to now turn to Pages 51 and 52 and  
4 53. These are the comparisons of state charts that  
5 you've used?

6 A. Yes.

7 Q. Okay. And these were taken from another study that  
8 you read and took this information out of those, is  
9 that right?

10 A. Yes, it's cited at the bottom. It's "Equity in  
11 School Finance," put out by the Education Finance  
12 Center in the Education Commission of the States.

13 Q. Okay. On Page 53, you have a correlation between  
14 revenue and wealth of .62 for Texas, is that right?

15 A. Yes.

16 Q. Okay. Now, if we can go up to Page 63 for just a  
17 second. It's Page 63, I'm sorry.

18 A. I am.

19 Q. Oh, I'm sorry, I thought you were looking around for  
20 it.

21 If you look at Page 63, the correlation between  
22 wealth and revenue using the '85 tax year property  
23 values is .62, is that right?

24 A. That is right.

25 Q. Now, you also had a correlation of .60, but that's

1 based on the 1984 property values, is that right?

2 A. Yes, it's based on the -- what's used to distribute  
3 the local fund assignment in 1985-'86.

4 Q. Okay. But the information that was used to  
5 distribute the local fund assignment '85-'86, is '84  
6 property information, is that right?

7 A. Yes.

8 Q. Okay. But if you do the correlation between revenues  
9 and wealth, based on the '85 property values, it's a  
10 .62 correlation, is that right?

11 A. That is right.

12 Q. And the correlation then for -- between revenues and  
13 the latest property values that you had in your  
14 study, '85, was .62. Exactly the same as the  
15 correlation for Texas in 1976, is that right?

16 A. It is. And I think, in looking at just that one  
17 year, that you should use the most recent one. It's  
18 a very small difference. But in comparing across  
19 years, I was attempting to use a value that was  
20 comparable to the one that was used in '76. And I  
21 did make a note to that extent.

22 Q. You feel, then, it would be appropriate to compare  
23 the .62 correlation for the '85 property value --  
24 '85-'86 revenues and '85 property value to the .62  
25 figure for 1976, is that right?

1 A. No, what I said was that I used the .60 because it  
2 had a lag time --

3 Q. Okay.

4 A. -- in values. The same, as I understand, this 1976  
5 value did. So I was trying to compare apples to  
6 apples. But in looking just at this year, I would  
7 -- before, in all cases, use the most current  
8 information. So I presented it anyway, here. And  
9 explained that and said that I would prefer the .62,  
10 if we look only at this year.

11 Q. Okay.

12 A. However, just like an inflation adjustment, once we  
13 start comparing, we try to compare apples to apples.  
14 That's why I utilized the other value.

15 Q. But in terms of the correlations, whether you compare  
16 .60 and .62, or .62 and .62, between 1976 and 1986,  
17 there's been either no or very little change on the  
18 relationship between the wealth in the district and  
19 the revenues in the district, is that right?

20 A. As far as the correlation goes, the elasticity shows  
21 quite -- it does show improvement over time.

22 Q. But am I right as far as the correlation relationship  
23 is concerned?

24 A. Yes, that .60 to .62 is of -- or it's really the  
25 reverse, .62 to .60 is small. And the tendency is

1           there, but it's a very low magnitude.

2       Q.     Okay.

3       A.     The elasticity changed.

4       Q.     Okay. You've also mentioned your slope figure, Dr.  
5           Verstegen. I'm back on Page 48, now.

6       A.     Yes.

7       Q.     And I think -- let me see how you describe your slope  
8           figure. On Page 49, you said that "the relationship  
9           between revenue per pupil and wealth per pupil was  
10          .60 as indicated by the correlation, but only .0010  
11          was indicated by the slope, which means that a \$1.00  
12          change in wealth per pupil was associated with just  
13          one-tenth of a cent change in revenue per pupil." Is  
14          that what you said?

15      A.     Yes.

16      Q.     So the slope that you've given us is .001, sum of the  
17           relationship between the wealth and the revenue, is  
18           that right?

19      A.     Yes.

20      Q.     Okay. And would you consider this to be a small  
21           slope, showing a fairly small relationship between  
22           wealth per pupil and revenue per pupil?

23      A.     Yes.

24      Q.     And would you consider one to be a high slope?

25      A.     Yes.

1 Q. 1.0 would be a high slope?

2 A. (Witness nodded head to the affirmative.)

3 Q. So, what you meant to do, by showing this slope, was  
4 to show that the relationship was not strong, because  
5 it's a small number like .001 instead of a high  
6 number like 1.0, is that right?

7 A. Yes.

8 Q. Okay. If the slope were 1.0, does that mean that for  
9 every dollar of additional wealth per pupil, you  
10 would have an additional dollar of revenue per pupil?

11 A. Yes.

12 Q. Okay. So, then if you had a wealth per pupil of  
13 \$500,000.00 a pupil, that would be a wealth figure,  
14 is that right?

15 A. Yes.

16 Q. Okay. If you had a one slope, you then have  
17 expenditures of \$500,000.00 per pupil, is that right?

18 A. No. No, that isn't right.

19 Q. Okay. Excuse me. I thought you just told me that if  
20 there was a one slope, you would have an additional  
21 dollar of revenues for every additional dollar of  
22 wealth. Did you tell me that?

23 A. It looks at the relationship of those two values at  
24 an xy axis.

25 Q. Uh-huh.



- 1 A. In other words, as the wealth goes up \$1.00 --
- 2 Q. Uh-huh.
- 3 A. -- the revenue would go up \$1.00.
- 4 Q. Okay.
- 5 A. As the wealth goes up \$2.00, the revenue goes up to
- 6 \$2.00.
- 7 Q. All right. Okay.
- 8 A. There's a linear relation much like a vertical --
- 9 much like if you take your vertical and horizontal
- 10 line, it will go up in a linear fashion, continue to
- 11 rise.
- 12 Q. I just want to make sure we understand what that
- 13 linear fashion means. Let's say this is wealth and
- 14 this is revenue, okay?
- 15 A. (Witness nodded head to the affirmative.)
- 16 Q. And if you had wealth of -- let's start at a lower
- 17 figure. Let's say you had wealth of \$50,000.00 per
- 18 student and you had revenue of, let's say, \$2,000.00
- 19 a student. We can start there.
- 20 A. (Witness nodded head to the affirmative.)
- 21 Q. Is that right?
- 22 A. Uh-huh.
- 23 Q. Okay. If we went up to wealth of \$51,000.00 a
- 24 student, we would go up to revenue of \$3,000.00 a
- 25 student, is that right?

1 A. No.

2 Q. Isn't this \$1,000.00 here and \$1,000.00 there?

3 A. Under a slope of one?

4 Q. Yes, under a slope of one, that's what I'm talking  
5 about.

6 A. For every one unit change in one, there's -- the  
7 question is, what is the unit change in another? Let  
8 me look at that for a minute, if you don't mind.

9 Q. Sure, glad to.

10 THE COURT: Is this a good place to stop?

11 MR. KAUFFMAN: Yes, sir, I think it is.

12 THE COURT: We'll get started up again at a  
13 quarter 'til.

14 (Afternoon Recess)

15 CROSS EXAMINATION (RESUMED)

16 BY MR. KAUFFMAN:

17 Q. Dr. Verstegen, I think before the break we were  
18 talking about this matter of the slope. And you said  
19 you wanted a chance to look at it. Have you had a  
20 chance to look at it?

21 A. Yes, I have.

22 Q. Okay. In your paper, on Page 49, did you say this  
23 near the end of the paragraph in the text, did you  
24 say, "but only .001" -- excuse me, Page 49.

25 A. Okay.

1 Q. Near the bottom of the page, did you say, "but only  
2 .001, as indicated by the slope, which means that a  
3 one dollar change in wealth per pupil was associated  
4 with just a one-tenth of a cent change in revenue per  
5 pupil" and then in parenthesis, "(or a change of  
6 \$1,000.00 in wealth is associated with change of one  
7 dollar in revenue per pupil." Did you say that?

8 A. I did.

9 Q. Okay. And that is with a slope of .001, is that  
10 correct?

11 A. Yes.

12 Q. Okay. Well, then what would a slope of one mean?

13 A. So this example is a slope of 1.0?

14 Q. Yes, it is.

15 A. Yes.

16 Q. Okay.

17 A. Then I would agree with what you're doing there, Mr.  
18 Kauffman.

19 Q. Okay. Excuse me, fine.

20 So, then if we went up to \$52,000.00 a student  
21 in wealth, we would have \$4,000.00 a student in  
22 revenues, is that right?

23 A. Yes.

24 Q. And if we follow that pattern, at -- let's see, the  
25 \$98,000.00 per student in wealth, we would have a

1 revenue of \$50,000.00 a student, is that right?

2 A. An addition of \$48,000.00, uh-huh.

3 Q. So, if we went on and on and on, eventually, at --  
4 roughly \$1 million of property per student, you would  
5 have revenues of about \$950,000.00 a student, is that  
6 right?

7 A. Yes.

8 Q. That's what a slope of one would mean, is that right?

9 A. Yes.

10 Q. In this case, there's only a slope of .001?

11 A. Yes.

12 Q. Okay. So when you put in your paper that a slope of  
13 .001 was a very low slope, you didn't really mean to  
14 compare .001 to one, did you?

15 A. I'm not sure that I understand what you're asking.

16 Q. Well, a slope of one would produce these results. I  
17 mean, you would never expect to see that, would you?  
18 A district of \$1 million of wealth per student would  
19 have revenues of almost \$1 million of wealth per  
20 student? I mean, that just isn't going to happen, is  
21 it?

22 A. A 1.0? No, I don't think so.

23 Q. Okay.

24 A. I would probably agree with what you're saying.

25 Q. Okay. Well, would you agree, then, to use the figure

1           .001 and to imply that it compared to a one would be  
2           misleading?

3       A.    No, I certainly won't agree with that, because you  
4           see, there are slopes and elasticities that are taken  
5           for all of the states.

6       Q.    Okay.

7       A.    And these slopes and elasticities are compared to one  
8           another. This was how Bob Berne suggested that they  
9           be compared, for example. And in a rank ordering of  
10          slopes or elasticities, you can look at the variation  
11          and note those that are in the upper quartile and  
12          therefore low. Or you can look at other analyses.  
13          For example, Odden, Berne and Stiefel, in talking  
14          about Florida, talked about the correlation between  
15          wealth and revenues being about .77, but that the  
16          slope being only .19 --

17       Q.    Okay.

18       A.    -- .19, not .0010, and saying that perhaps that  
19          correlation was insignificant, because the slope was  
20          so low. So, interpretation of this is guided by  
21          other data sources and people that have interpreted  
22          these measures prior to myself, and not just a value  
23          that I'm giving this. This is a very, very low  
24          slope. And the elasticity is very, very low.

25       Q.    Okay.

1 A. There's no doubt about it. Therefore, the  
2 correlation, whether it has much meaning alone, in  
3 that it's .60 or .62, is -- in following the analysis  
4 of what I've given as an example for Florida, is  
5 therefore probably insignificant.

6 Q. Well, now -- insignificant, using, now, a technical  
7 term again.

8 A. And I -- this time you're right.

9 Q. Okay.

10 A. Excuse me.

11 Q. Okay. As a matter of fact, the .60 would be very  
12 significant, because it compares every district in  
13 the state, isn't that right? I mean, the correlation  
14 represents the actual relationship between revenue  
15 and wealth in the state, doesn't it?

16 A. It does represent a relation -- it is a relationship  
17 measure. And I misspoke in using the word  
18 insignificant. But what I'm saying is it's very  
19 nonsubstantial. That the number apparently can be  
20 misleading, because of this low magnitude. So, it's  
21 very important to consider the magnitude of the  
22 relationship in looking at the relationship, in that  
23 the slope gives you the angle. And this was just  
24 hardly a line -- hardly an angled line.

25 Q. Okay. But in your paper, on Page 49, you were

1           talking about slope. You had mentioned slope and  
2           elasticity. The slopes you were talking about are  
3           the ones we've just been comparing on the sheet up  
4           here on the board, is that right?

5   A.   No, I'm not talking about a slope of 1.0.

6   Q.   I know.

7   A.   This is quite different than a slope of .0010.

8   Q.   I understand.

9   A.   And that's why I find this sort of thing quite  
10       misleading, because we're looking at this in a -- in  
11       learning, we know that visual learning sometimes  
12       sticks with you, and this isn't really the  
13       relationship we're talking about, it's quite  
14       magnified from the relationship that exists.

15   Q.   But when you mentioned in your paper a slope of .001,  
16       you did not mean to be comparing that to one, then,  
17       did you?

18   A.   Are you asking me if .0010 is low in relation to 1.0?

19   Q.   No, I'm asking you, when you wrote .001, did you mean  
20       for the reader to interpret .001 in terms of one  
21       would be the high slope, and this is only .001, so  
22       that's real low?

23   A.   Oh, I see what you're saying. No, it's interpreted  
24       within the whole body of literature. Of course, one  
25       is very high.

1 Q. Okay.

2 A. It certainly would be, but a .99 would be very high,  
3 as well. And it's interpreted within looking at  
4 other states. Now, I'm not sure if I had --

5 Q. Excuse me for a second --

6 A. I'm not sure if I had data on slopes, but I can and  
7 would like to make available comparable data on  
8 elasticities, to put the elasticity, to embed it  
9 within some actual numbers.

10 Q. Thank you. When you said, regarding the slope, that  
11 it's sort of a low line, and you made a motion with  
12 your hand. If you're comparing wealth, where you  
13 have hundreds and hundreds and hundreds of thousands  
14 of dollars of wealth, to revenues, where the range is  
15 around \$2,000.00 to \$3,000.00 to \$4,000.00, you're  
16 going to expect a small relationship, though, aren't  
17 you? I mean, one, you're dealing with hundreds and  
18 hundreds and hundreds of thousands of dollars, and  
19 the other one, you're looking at hundreds of dollars.  
20 You're not going to expect a one-to-one relationship  
21 there, anyway, are you?

22 A. No, the slopes do test relationships. And some  
23 relationships, in an inequitable finance system, do  
24 show increase like a horizontal line, a strong slope.  
25 This is almost an insignificant -- whoops, excuse me.



1           This is almost not even there, this slope. It's  
2           very, very small. So yes, that's something on -- a  
3           main thing that you would look at is that slope or  
4           the elasticity.

5       Q.   Dr. Verstegen, if you look on Page 54 of your study,  
6           you talk about the restrictive range -- I'll wait  
7           until you get to 54, I'm sorry.

8       A.   Excuse me, yes.

9       Q.   Sorry, I'm on Page 54.

10      A.   Yes.

11      Q.   On Page 54 of your study, you talk about the  
12           restricted range for the '86 year being \$272.00?

13      A.   Where it says "restricted range," I have a footnote,  
14           a Footnote A, which says that the restricted range is  
15           adjusted for inflation and there's citations, yes.

16      Q.   I just want to clarify that the actual restricted  
17           range, according to your figures in '86 dollars, is  
18           \$965.00, is that correct?

19      A.   In 1986 dollars.

20      Q.   That's right.

21      A.   But that can't then be compared to anything but 1986  
22           dollars.

23      Q.   Dr. Verstegen, part of your study was to look into  
24           the future and determine the impact of various  
25           alternatives in raising monies, or cutting back on

1 funds in the State of Texas, is that right?

2 A. Yes.

3 Q. Okay.

4 A. That was --

5 Q. Is that correct?

6 A. Yes, that was the intent of the study, is to look at  
7 alternatives for -- to current law for a reduction in  
8 aid.

9 Q. Okay. And is one of the things that you did in your  
10 study, was to look at the current law, 1987-'88 and  
11 find some of these measures we've been talking about,  
12 the range, the restricted range, Federal Range Ratio,  
13 to find those things for current law, 1987-'88, is  
14 that right?

15 A. Yes, I did that, within the context of the fact that  
16 those are projected numbers and they aren't really  
17 solid numbers. And for example, the -- naturally,  
18 projecting what a tax rate might be in '87-'88 is  
19 difficult. But in the context of looking at the  
20 alternatives to current law --

21 Q. Uh-huh.

22 A. -- and current law for those years, I felt that it  
23 would be useful. But only for that purpose.

24 Q. Do you feel that the figures that you used in your  
25 study for current law, '87-'88, were, I guess, to the

1 best of your ability, a valid predictors of the  
2 '87-'88 school finance picture in Texas?

3 A. I surely don't. I surely wouldn't suggest that you  
4 look at those in terms of predicting, because I think  
5 it's very difficult to predict a tax rate in '87-'88.  
6 What I would suggest is that actual real data is  
7 utilized in looking at equity in the state.

8 Q. Okay. But the '87-'88 information is information you  
9 forwarded to the Texas Education Agency for use by  
10 the state board and the Legislature in looking at the  
11 situation under current law and comparing that to  
12 various policy alternatives, is that right?

13 A. Well, now, I'm not sure what use the Texas Education  
14 Agency was to make of this study when I wrote it.

15 Q. Uh-huh.

16 A. And it's used in -- all of the alternatives were  
17 projected. On the page where all of the projections  
18 exist, you could compare them to themselves.

19 Q. Okay.

20 A. You see, the same assumptions would be built in.

21 Q. Uh-huh.

22 A. So, for that purpose, I feel it -- it is useful, yes.  
23 And that's how I utilized that.

24 Q. Okay. But the figures that you came up with for  
25 '87-'88, were the best that you could do with the

1           available information you had for '87-'88, is that  
2           right?

3       A.    I didn't put much -- much time into thinking about  
4           projecting tax rates and things like this. I think I  
5           could have done my best if I had felt that this may  
6           be pulled out of context and used for something else,  
7           or analyzed outside of this page, that is, comparing  
8           the current law to the alternative. I would have  
9           made a notation that that isn't really something that  
10          should be done with these figures. That isn't what  
11          they should be utilized for. And I don't know that I  
12          could say, therefore, that this would be my best  
13          judgment on '87-'88, if you pull it out of this  
14          context. So my best job would be trying to provide  
15          something that's comparable to these alternatives and  
16          could be used within this context.

17       Q.   Well, Dr. Hooker once said that it wasn't perfect,  
18           but it was good enough for government work, I think.  
19           Would you say that the figures you gave for current  
20           law were at least good enough for government work? I  
21           mean, for a study that you did under contract for the  
22           Texas Education Agency?

23       A.    Gosh, you know, I've been a legislative aid, and I  
24           just don't know if I'd agree with Dr. Hooker on that.  
25           I try to do my best in all of my work.

1 Q. And you did your best here, is that right?

2 A. And I think this is valid for the purposes that I  
3 have utilized it for.

4 Q. We'll have to judge that. Can we look at Page 73 for  
5 a second, Dr. Verstegen? And Dr. Verstegen, where is  
6 your chart where you have made a comparison in 1976  
7 and 1986? I think that's Page 54, is that right?

8 A. Let me check.

9 Q. Okay.

10 A. Yes.

11 Q. Okay. If we can look at Page 54 of your study,  
12 Exhibit 48, and Page 73 of your study of Exhibit 48,  
13 can we do that for a second, please?

14 A. Page 54 and Page 73?

15 Q. Yes.

16 A. Okay.

17 Q. On Page 73, on the first line, you have something  
18 called equity -- well, the title of Page 73 is  
19 "Equity Statistics: Weight Dispersion Measures for  
20 Policy Alternatives to Current Law for Reduction of  
21 State Revenue Fiscal Year 1988," is that correct?

22 A. Yes.

23 Q. And under policy alternatives, your first figure is  
24 for something called Current Law, '87-'88, is that  
25 right?

1 A. Yes.

2 Q. Okay. Now, under that, you have some figures for  
3 range, restricted range, Federal Range Ratio, Gini  
4 Index, coefficient of variation, and McLoone Index.  
5 These are the measures that we've been talking about  
6 so far, is that right?

7 A. Yes, they are.

8 Q. Okay. Now, in 1986, according to your figures on 54,  
9 the restricted range was actually \$965.00, is that  
10 right?

11 A. According to Page 54?

12 Q. Yes. You have \$272.00 in 1967 dollars, but it's  
13 \$965.00 in 1986 dollars, is that right?

14 A. Let me just check back, that must be on another page.

15 Q. Sure, Page 48.

16 A. All right. Let's see. The restricted range at the  
17 95th and 5th percentile is \$965.00.

18 Q. Okay. So in 1986, for the 1985-'86 year, the  
19 restricted range, according to your figures, is  
20 \$965.00, is that right?

21 A. This is not comparable at all, Mr. Kauffman. And I  
22 was just pointing out to you, that I, the person who  
23 wrote this, do not feel that this is the use the data  
24 should be utilized in 1977-'78. I feel that you're  
25 not making the use of the data as it was intended.

1           There is a section here on equity. And that, I  
2           believe, reflects the measurement of equity in  
3           1985-'86. But I don't feel that what you're doing is  
4           valid.

5       Q.    Okay. Well, let me see -- in Page 73, though, of  
6           Exhibit 48, you have called these things -- you have  
7           called the restricted range \$1,922.00, is that right?

8       A.    I beg your pardon?

9       Q.    On Page 73 --

10      A.    Yes.

11      Q.    -- you've said the restricted range for '87-'88 is  
12           \$1,922.00, is that right?

13      A.    Yes.

14      Q.    Okay. And on Page 54, you said for 1986, the  
15           restricted range was \$965.00, is that right?

16      A.    I did.

17      Q.    Okay. On Page 73, you said for 1987-'88, the Federal  
18           Range Ratio is .98, is that right?

19      A.    You know, I'm an old teacher, do you understand what  
20           I'm trying to say here?

21      Q.    I think I do, I'm just trying to ask you --

22      A.    There's no support for projecting numbers forward and  
23           considering that they have validity.

24      Q.    I mean, they were valid enough for you to put into  
25           this paper.

1 A. All of these numbers were projected forward, you see,  
2 for each of these. So the error, the random error  
3 that spills in, crosses itself off, or at least  
4 presents some comparability to the others. So, if  
5 you compare them to each other, there's validity. Do  
6 you see what I'm saying? Is that clear?

7 Q. Well, let me ask you some questions first, if I  
8 could. And then I'll let you ask some.

9 A. I just --

10 Q. It doesn't matter whether I see it. Let me just ask  
11 some questions, if I could.

12 Your figures are, for '87-'88, the Federal  
13 Range Ratio is .98, is that right?

14 A. The projected -- yes, says .98, uh-huh.

15 Q. And your figures, for 1986, are that the Federal  
16 Range Ratio is .48, is that right?

17 A. Yes.

18 Q. Okay. Your figures are that the coefficient of  
19 variation in 1986 is 15.9, is that right?

20 A. Yes.

21 Q. And your figures are that the coefficient of  
22 variation in 1987-'88 is 19.86, is that right?

23 A. Or 19.9, if you round them both, uh-huh.

24 Q. 19.9?

25 A. Uh-huh.



1 Q. Okay. And your figures are that the McLoone Index  
2 was .933 in 1986, and was .938 in 1987-'88, is that  
3 right?

4 A. Yes.

5 Q. Okay. Now, if we can look for a moment at the  
6 restricted range in '85-'86, compared to the  
7 restricted range for '87-'88, has it roughly doubled  
8 from \$965.00 to \$1,922.00?

9 A. No, it hasn't. Because, you see, these aren't real  
10 numbers here, these are projections. So the  
11 restricted range, those differences don't really  
12 exist.

13 Q. But if your projections are correct, on the  
14 restricted range for '87-'88, your restricted range  
15 in '87-'88 will be twice your restricted range in  
16 '85-'86, is that right?

17 A. These are not -- Mr. Kauffman, please try to  
18 understand that I would not want to put myself up  
19 here, suggesting that I'm projecting the equity of  
20 the system in 1987-'88, because I realize how  
21 foolhardy that is. What I am, is I'm projecting a  
22 variety of alternatives to current law. And on the  
23 very same assumptions, I'm comparing those. You see,  
24 this is -- looking at alternatives for '87-'88, and  
25 within that context, I believe that an analysis and

1 comparison can take place. But I really do have a  
2 problem with what you're doing. I don't think it's  
3 valid, reliable, generalizable, true, or useful.

4 Q. The Federal Range Ratio, from '85-'86 to '87-'88,  
5 about doubles from .49 to .98, is that right?

6 MR. O'HANLON: Your Honor, this has been  
7 asked and answered and gone over a couple of times.  
8 The witness is not willing to make comparisons that  
9 are following with respect to this. And the document  
10 speaks for itself. If he's just trying to recite the  
11 differences, it's apparent.

12 MR. KAUFFMAN: Your Honor, I think it's  
13 clearly proper cross examination to look at the  
14 different numbers and different parts of her report  
15 and ask her to compare them and analyze them, and to  
16 check the validity or the firmness of her  
17 understanding or support of her figures. It's cross  
18 examination.

19 THE COURT: Okay.

20 MR. O'HANLON: What I'm objecting to, is  
21 that we've been over this about four times, now.

22 THE COURT: Well, I don't know about four,  
23 but I will not interfere at this time.

24 BY MR. KAUFFMAN:

25 Q. Dr. Verstegen, I would like to look at these numbers

1 in a slightly different way, if we could. I get a  
2 little confused, sometime, on this. The Federal  
3 Range Ratio, let's look at Page 54. The Federal  
4 Range Ratio is .48, is that correct?

5 A. Yes.

6 Q. Okay. And does that mean that the restricted range  
7 is 1.48?

8 A. It should, yes. Although I've deflated the numbers,  
9 so there may be -- I may need to run through that  
10 again. But yes.

11 Q. Okay.

12 A. Uh-huh.

13 Q. And on Page 73, the Federal Range Ratio is .98.  
14 Would that relate to a restricted range of 1.98?

15 A. I believe so.

16 Q. Now, the restricted range of 1.98, is that very close  
17 to the 2.0 restricted range that Dr. Rossmiller uses  
18 as a level of inequitability?

19 A. No, he's talking about actual data. He was not  
20 talking about projected numbers. So you're applying  
21 something -- one -- a measure that's to be utilized  
22 on one type of an analysis for another.

23 Q. Okay. If the numbers that you have projected turn  
24 out to be correct and the restricted range ratio is  
25 actually 1.98 in '87-'88, would that be very close to

1 the level that Dr. Rossmiller says is inequitable?

2 A. 1.98 is very close to 2.0.

3 Q. Okay.

4 A. Indeed.

5 Q. And 2.0 is the level that even Dr. Rossmiller says is  
6 inequitable, is that right?

7 A. For actual real dollars --

8 Q. Okay.

9 A. -- and a real situation.

10 Q. Okay. Dr. Rossmiller, (sic) I think at one time you  
11 had sent me an earlier draft of your paper, or rather  
12 attorneys had sent me an earlier draft of your paper,  
13 do you recall that?

14 A. Excuse me, are you asking me if --

15 Q. Yes, do you recall that there's an earlier draft of  
16 your paper that you sent to TEA before this December  
17 1986 draft?

18 A. Yes.

19 Q. Okay. And I remember we talked about this some at  
20 your deposition. And you said that there was no one  
21 draft, but there were documents that included  
22 different parts of the study that you would use,  
23 whereas an earlier draft of the parts of the study  
24 which came to be Exhibit 48, is that right?

25 A. I'm sorry, I have an Exhibit 95 here. What are you

1 referring to this Exhibit 48?

2 Q. I'm sorry, I'm talking about your study, Defendants'  
3 48.

4 Okay. You have a study called Defendants' 48,  
5 is that correct?

6 A. Yes.

7 Q. That is the study that you've testified about in this  
8 Court?

9 A. Yes.

10 Q. And leading up to that study, did you draft and send  
11 to persons earlier drafts, a part of the information  
12 which led to Defendants' Exhibit 48?

13 A. Yes, as I had discussed with you at the time, it's a  
14 practice in academia to circulate internal drafts  
15 meant for review and to return to the person that's  
16 written them. What a draft means, is that it shall  
17 never been cited or used as a document.

18 Q. I understand.

19 A. So you cannot -- it's for discussion only between the  
20 person writing it and the person reading it.

21 Q. I understand.

22 A. And I did send that to a person and apparently it was  
23 taken by yourself, or someone. Is that so?

24 Q. Actually, it was sent to me by your attorney.

25 A. You asked for it or something?

1 Q. Yes.

2 A. That you had found I mailed a draft. So, you see,  
3 that's what draft means, do not cite or quote.

4 Q. I understand.

5 A. Uh-huh.

6 Q. Okay. Well, this draft, though, was written by you,  
7 is that right?

8 A. Yes.

9 Q. And this draft was written by you and sent to people  
10 to comment on, is that correct?

11 A. Yes.

12 Q. Okay. And one of the people or persons to whom you  
13 sent it was the Texas Education Agency, who was  
14 paying you to do the study, is that correct?

15 A. Yes. Excuse me, Mr. Kauffman, this is the draft  
16 right here, then, that --

17 Q. Yes.

18 A. Okay.

19 Q. If you'll take a look at what has been marked as  
20 Plaintiffs' Exhibit 96.

21 A. It looks something like one of the drafts, yes.

22 Q. Okay. Does it at least look something like one of  
23 the drafts that you wrote?

24 A. No, I'll assume that this is the draft, uh-huh.

25 Q. Okay. Dr. Verstegen, I would like to ask you a few

1           questions about the earlier draft of your party, if I  
2           could?

3       A.    Mr. Kauffman, I -- I guess I have to say yes,  
4            although you know a draft means do not quote or cite.  
5            It's definitely not intended for this purpose. Now,  
6            in academia, we aren't protected by the law, but we  
7            do -- we do respect each other's rights in an  
8            informal fashion.

9       Q.    Okay.

10      A.    But I don't see any reason why you can't quote from  
11            this. But I just want you to understand how improper  
12            it is.

13      Q.    Okay. I understand.

14                    If we could look on Page 25 of your draft, you  
15            talk about the Federal Range Ratio, is that correct?

16      A.    Oh gosh, I think that my draft only goes up to Page  
17            16. Oh, you've stamped numbers on it.

18      Q.    Yeah, I've stamped -- on the bottom, I've stamped  
19            numbers on them.

20      A.    I'm sorry, I beg your pardon.

21      Q.    Dr. Verstegen, under there you talk about the Federal  
22            Range Ratio, is that correct?

23      A.    Yes, I do.

24      Q.    And on that earlier draft, did you state that a  
25            disparity of 25 percent or less meets stringent

1 federal guidelines?

2 A. I see that written. That was the Impact Aid. It was  
3 never, as far as I know, utilized in a state's -- in  
4 measuring state equalization of financing education.

5 You see, that's what a draft means, you  
6 sometimes are still working through some concepts.  
7 But as I said, I went to Washington D.C. and spoke  
8 with the person in charge of the Impact Aid and felt  
9 that this was improper to include. And not wanting  
10 to lead someone astray, even though I didn't know  
11 that this was going on, I still did not include that.  
12 So, that's the meaning of a draft. I did write that,  
13 but within the context that I've provided. You see  
14 where that came from and the meaning of it.

15 Q. Okay. And in your Plaintiffs' Exhibit -- I mean,  
16 Defendants' Exhibit 48, your actual study. On Page  
17 15, when you talk about the Federal Range Ratio, you  
18 don't mention that 25 percent, is that correct, on  
19 Page 15?

20 A. No, you didn't answer me before, but I'm going to ask  
21 you again, I'm an old teacher. Do you understand  
22 what I said here? That it would be proper to use  
23 that as a standard in state finance for delivering  
24 Impact Aid -- I believe only two states meet that  
25 standard. And it's extremely stringent, so it isn't



1           perhaps included, but let me check it.

2       Q.    Okay.  Please.

3       A.    I hope I didn't include it.

4       Q.    Look on Page 15.

5       A.    Well, I'm glad I didn't, because I would be leading  
6           people astray to think that that is the guideline.

7       Q.    Thank you.  If we can now turn to Page 30 of your  
8           draft, which I'll call Plaintiffs' Exhibit 96.  30 is  
9           something that you wrote describing the school  
10          finance system in the State of Texas, is that  
11          correct?

12      A.    I'm looking at Page 30 and I have something that says  
13           wealth -- correlations between wealth, operating  
14           costs, revenue fund balance --

15      Q.    That's correct.

16      A.    -- and selected variables.

17      Q.    Yes.

18      A.    Okay.

19      Q.    Okay.  Did you say, on that Page 30 of your earlier  
20           draft of your paper, that with regards to wealth, "it  
21           was found that wealthy districts tend to have high  
22           operating costs per pupil, high teachers' salaries,  
23           high local enrichment per pupil, high local and local  
24           and state revenue, and high equalized enrichment aid  
25           per pupil." Is that what you said?

1 A. I did. I even said underneath that that they  
2 received proportionately less state aid per pupil and  
3 had a higher local fund assignment. And then I went  
4 on to talk about where there was no relationship.  
5 But now, I'm not sure how these related to my final  
6 analyses. Some parts of this were more fleshed out  
7 than others.

8 Q. Okay. Dr. Verstegen, in your earlier draft of your  
9 paper, you talked about something called "statistical  
10 equity" and something called "pupil equity," is that  
11 right?

12 A. I believe I included all of those wealth variables in  
13 the final paper. And you said, now, secondly, did I  
14 talk about statistical and pupil equity?

15 Q. Yes.

16 A. I remember those terms and if you could just let me  
17 know where I might find that part of this draft  
18 paper.

19 Q. Okay. If you'll look on Page 55. Dr. Verstegen,  
20 what did you mean by "statistical equity?"

21 A. I'm going to have to review this a little. "Pupil  
22 versus Statistical Equity. An anomaly in the data  
23 which will be called the difference between  
24 statistical equity and pupil equity."

25 Q. Now, Dr. Verstegen, this is -- this exhibit,

1           Plaintiffs' Exhibit 96, though again, is material  
2           that you wrote, is that correct?

3       A.    It is.  And I am working -- I need to find something  
4           in order to answer this, if you would --

5       Q.    Sure.

6       A.    -- let me just take a few minutes to look for that, I  
7           would appreciate it.

8       Q.    Excuse me, the question is, what is "statistical  
9           equity." Can you answer that question?

10      A.    Yes, that's what I'm going to attempt to answer.  I  
11           can't answer it in a yes or no answer.

12      Q.    Okay.

13      A.    So, may I proceed?

14      Q.    Please.

15      A.    Okay.  The -- you will not find the words  
16           "statistical equity" in the literature, because I was  
17           grappling here.  I found something very unusual in  
18           the data and I couldn't explain it.  And that's why I  
19           sent such a very rough copy off to folks to take a  
20           look at this and to get back to me and tell me what  
21           they thought was happening.  And that is, I was using  
22           the SAS statistical package, a computer package that  
23           figures out statistics for you.

24      Q.    Uh-huh.

25      A.    And on one page of SAS output -- and let me find such

1 a page to show you.

2 MR. O'HANLON: While she's looking, has  
3 this been offered? I think he's now questioning out  
4 of her document that hasn't been offered into  
5 evidence.

6 MR. KAUFFMAN: That's correct, it hasn't.

7 MR. O'HANLON: Then I would object.

8 THE WITNESS: What, that I shouldn't? Oh,  
9 I beg your pardon.

10 MR. O'HANLON: I'm not talking to you, I'm  
11 talking to the Judge.

12 MR. KAUFFMAN: Your Honor, we would offer  
13 it just for the purposes of showing it as an earlier  
14 draft and not for the truth of the matter stated.  
15 Showing earlier statement by the witness and  
16 conflicts between the two documents.

17 MR. O'HANLON: It's either offered or it's  
18 not.

19 THE COURT: He's offering it. Are you  
20 offering it?

21 MR. KAUFFMAN: I'm offering it for the  
22 purpose of showing conflicts between the documents  
23 and not for the truth of the matter stated.

24 MR. O'HANLON: If he's offering it, I don't  
25 object to it's admission, I just want to get it in.

1 MR. TURNER: I don't see its relevance,  
2 Your Honor.

3 THE COURT: Sir?

4 MR. TURNER: I don't see its relevance. I  
5 mean, he could go through it, if he's trying to point  
6 out some things that vary and ask about them, but I  
7 don't see how it's relevant that we have a draft here  
8 that differs from the final report. Because, as the  
9 witness has testified, it's a final report that  
10 contains her opinion. And the earlier document is  
11 just a working paper that obviously was refined and  
12 to the final document that she's testifying about  
13 here in court. So I think it's -- I don't think it's  
14 relevant to the proceeding at all, to put this in  
15 evidence.

16 THE COURT: Okay. Well, I'll respectfully  
17 disagree. There's many instances of experts, when  
18 they testify, who have prepared reports. And not  
19 infrequently, they've prepared preliminary reports.  
20 And all of that is relevant, whether it's consistent  
21 or inconsistent. So, I'll overrule.

22 (Plaintiffs' Exhibit No. 96 admitted.)

23 BY MR. KAUFFMAN:

24 Q. Dr. --

25 A. I've learned something here as an academic. I have

1           learned something, because this is very improper in  
2           my field of work.

3                   THE COURT: Well, ma'am, just to ease you  
4           off a little bit --

5                   THE WITNESS: But no, excuse me, Your  
6           Honor, I'm not at all -- I don't know anything about  
7           a court of law's procedures, but in terms of quoting  
8           and citing and reviewing a draft document --

9                   THE COURT: Well, oftentimes it happens  
10          that experts, usually not the type -- usually not the  
11          type that you are, usually scientific experts, will  
12          prepare reports. And they will have some underlying  
13          figurings, let's say -- sometimes actual reports.  
14          And then they rework it. And the lawyers are  
15          entitled to see it all. And they get it all. And if  
16          there's a variation, they want to know how come  
17          there's a variation.

18                   THE WITNESS: I see.

19                   THE COURT: They'll get the poor devil on  
20          the witness stand and want him to explain how come he  
21          changed his mind. Because they want to test why it  
22          was that he changed his mind.

23                   THE WITNESS: Oh.

24                   THE COURT: Everybody wants to know whether  
25          that was a good reason or not and that's fair.

1 All right. You may proceed.

2 THE WITNESS: My apologies.

3 THE COURT: That's okay.

4 THE WITNESS: There's nothing in here that  
5 I mind discussing, by the way, or any of the  
6 documents, but -- okay, I should proceed then to  
7 explain about statistical versus pupil equity.

8 BY MR. KAUFFMAN:

9 Q. Yes.

10 A. And I think it's something that's important in terms  
11 of Texas, the equity of the Texas system, because on  
12 one page of output from the computer you get a  
13 variety of numbers. And I was checking the numbers  
14 by the coefficient of variation number, so you could  
15 check if it was weighted or not by students, or if it  
16 was just looking at districts. And the coefficient  
17 of variation number was -- looked just fine, but the  
18 numbers for the coefficient of variation and so forth  
19 did not seem to jive with the numbers right next to  
20 them, right here in this same page --

21 Q. Uh-huh.

22 A. -- for the percentiles. And you know, we've looked  
23 at students at different percentiles and -- but  
24 that's important, because it's a very understandable  
25 way to explain distributions of revenue. And so what

1 I did was I wrote up -- I did an experiment of sorts  
2 and that is ran and -- and I didn't run this -- I  
3 didn't run these data myself, but I suggested that  
4 data be run in the fashion we've been looking at  
5 them. That is, that we actually take district by  
6 district and rank the revenues and then carry the  
7 cumulative pupils on the right.

8 Q. Uh-huh.

9 A. And when I got to five percent cumulative pupils,  
10 that number should match this. And if it did match  
11 it, well then apparently something wasn't clicking  
12 with me, but the numbers went together even though  
13 they didn't seem to. So I ran the two and I compared  
14 them. I ran each district and looked when I got to  
15 five percent of the pupils and said how many dollars  
16 are there? And I looked at this five percent of the  
17 pupils and I said how many dollars are there? So  
18 dollars per pupil at the 5th percentile that we've  
19 been doing and dollars per pupil at the --

20 Q. Uh-huh.

21 A. -- and they did not match. So I knew that the one  
22 where I carried the pupils was based on pupils. And  
23 I called this one statistical equity. And I sent  
24 these off to several people and said, what does this  
25 mean to you? Have I discovered something new? Why



1 don't these numbers jive?

2 Then in looking into this, Nancy Stevens, who  
3 was running the data, noted in the manual that -- in  
4 this big manual of over a thousand pages, there was  
5 one sentence that says, "that on this page, these  
6 percentiles wouldn't be weighted by pupils." And that  
7 page I've cited, then, in Page 14 in the final study,  
8 Page 1184. And that is that this -- that people  
9 should be very cautious in utilizing this for  
10 percentiles, because they're going to get different  
11 numbers. So to make a long story short, what I was  
12 calling statistical equity was what the computer was  
13 giving me for this part of the printout. And it's  
14 very unusual that you would have the computer  
15 figuring all of these numbers one way and this middle  
16 part a different way. And further, we found that the  
17 computer -- I didn't find, Nancy found that the  
18 computer wasn't selecting the middle pupil for the  
19 McLoone Indexes.

20 Q. Uh-huh.

21 A. It also wasn't doing that properly, because it was  
22 based on these percentiles. And I believe that the  
23 actual statistical package which is used in state  
24 departments has been used here to look at things like  
25 percentiles, doesn't realize that. I have encouraged

1 Nancy to actually go ahead and write to them about  
2 its use with the McLoone Index.

3 Although they cite on Page 1184 that it doesn't  
4 weight the percentiles by pupils, so therefore, I  
5 didn't use these for the percentiles. But those long  
6 laborious runs for each one of the options was  
7 utilized to get to each one of those percentiles to  
8 provide comparable data.

9 And I cited, although in the past I know that  
10 we've used here in Texas this to look at percentiles.  
11 And what it does is it distorts -- it distorts the  
12 figures. So I felt that that was quite useful to  
13 find.

14 But at any rate, that was the purpose, mainly  
15 for this paper, in sending it off in this shape.  
16 That what I wanted to do was get some feedback on  
17 what was happening here. And then it was found that,  
18 in fact, it wasn't weighting the numbers by students.  
19 So it was putting one number in for Houston and one  
20 number in for Pecos and one number in for Austin and  
21 one number in for Brownsville. Okay?

22 Q. Uh-huh.

23 A. And it wasn't taking Austin times the number of  
24 students to get an average. Got an average using  
25 just one number. And so that's something that we

1 found out in going through the baseline.

2 Q. Okay. Are you through?

3 A. If that answers your question. Does it? What I  
4 meant by statistical equity there?

5 Q. Well, let me ask another question to make sure I  
6 understand. Nice try, though.

7 A. Okay.

8 MR. RICHARDS: No.

9 Q. Dr. Verstegen, let me take that part by part. You're  
10 not saying that the numbers on statistical equity  
11 that came out of the TEA computer are incorrect  
12 though, are you?

13 A. I'm saying that these numbers are incorrect. That it  
14 has to be hand run to get the percentiles, that the  
15 computer does not weight by students this percentile  
16 part. And therefore, in a pupil equity analysis, you  
17 need to do that in order to get the pupil equity  
18 analysis. It distorts otherwise what your findings  
19 are.

20 Q. But you're not saying that the numbers were  
21 incorrect, that it had the wrong number of -- the  
22 wrong wealth or the wrong revenue for the district,  
23 are you?

24 A. On this page of output, what I'm saying is that the  
25 moments were weighted properly and the quantiles and

1 extremes were not weighted properly. The moments  
2 include an N, the mean, the standard deviations, the  
3 skewness, the USS, the CV, the T, the -- I'm not sure  
4 of this one right here, the sum of weights, the sum  
5 of variance, kurtosis standard mean, probability for  
6 the T and probability for the S. And what is  
7 incorrect for a pupil analysis is the dollars at the  
8 100th percentile, at the 75th, at the 50th, 25th,  
9 zero, 99, and so forth, at the percentiles, and the  
10 dollars as they're shown for the lowest and the  
11 highest values.

12 Q. Dr. Verstegen, the document you're reading from, I  
13 think, is that in -- is that in this study,  
14 Plaintiffs' Exhibit 96, the document you're reading  
15 from?

16 A. Well, I took the numbers from there and transferred  
17 them -- you see, when I figure a range or a  
18 restricted range, I need a 95th and a 5th percentile.  
19 And Mr. Kauffman, you gave me the sheets that you're  
20 using for the 95th and 5th percentile, which is a  
21 pupil -- is the way we're looking at pupil equity.  
22 But if you were to use this in the same sense, you  
23 would pull those numbers off and write them down. So  
24 is it in the document? Well, when you look at the  
25 range and the restricted range, those numbers should

1 show up there.

2 Q. Okay. I'm sorry, let me back up a second. When the  
3 TEA computer analyzes information, to the best of  
4 your knowledge, did it have the correct revenue per  
5 pupil and the correct wealth per pupil for each of  
6 the districts in the state?

7 A. For what measure, Mr. Kauffman?

8 Q. Well, for the one you've used in either pupil equity  
9 or statistical equity?

10 A. In which paper?

11 Q. Well --

12 A. In the one paper that I stand by here, the figures --  
13 the number 48 here, is that it?

14 Q. In Exhibit 96, you talk about statistical equity.  
15 And what I'm asking you is, did the computer have the  
16 correct information for revenues per pupil and for  
17 wealth per pupil?

18 A. Well, yes, it did. What it did not do is simply  
19 weight it by students. It didn't provide the  
20 weighting to one part of the output.

21 Q. Okay, I understand.

22 A. It's that simple.

23 Q. Okay. Now, if we can talk a moment, you've now  
24 explained the difference, let's talk a moment about  
25 the results. If you look on page -- what I guess has

1           been marked as Page 56, there are some summaries of  
2           some of these same measurements we've been talking  
3           about, is that correct?

4       A.    Yes.

5       Q.    And does this Page 56 also give us numbers for the  
6           range and the restricted range and the Federal Range  
7           Ratio, that sort of information?

8       A.    Yes, it does.

9       Q.    Okay. For 1985-'86, if you use the statistical  
10          equity, the range is \$15,704.00, is that right?

11      A.    That number is there, Mr. Kauffman, but it's the  
12          incorrect number, as we've just discussed.

13      Q.    Well now, that range would still be the range between  
14          the revenue per pupil of the highest district and the  
15          revenue per pupil of the lowest district, isn't that  
16          right?

17      A.    Yes.

18      Q.    On Page 56 of Exhibit 96, Plaintiffs' Exhibit 96,  
19          there's a number for the restricted range for  
20          '85-'86, does that show around \$3,800.00 as the  
21          restricted range?

22      A.    It does.

23      Q.    Okay. And does it show the -- I guess what would be  
24          the Federal Range Ratio of 2.75?

25      A.    I think you would want to call that the ratio, the --

1 Q. Okay. Excuse me.

2 A. -- for the restricted range, uh-huh.

3 Q. The range ratio?

4 A. No, just ratio.

5 Q. Ratio.

6 A. Uh-huh.

7 Q. But does that 2.75 ratio, is that the sort of thing  
8 we were talking about earlier, where Dr. Rossmiller  
9 talked about 1.5 and 2.0?

10 A. But he was talking about the actual correct data, you  
11 understand that, don't you?

12 Q. I'm not sure, but let me go ahead and ask a question.

13 A. Okay.

14 Q. I just want to relate -- is this 2.75 the same type  
15 of number relating the 95th percentile and the 5th  
16 percentile?

17 A. It is.

18 Q. Okay. And that same type of number is the one that  
19 Dr. Rossmiller was talking about when he talked about  
20 his 1.5, his 2.0, as being a a ratio of the 95th to  
21 the 5th percentile, is that correct?

22 A. Yes, that's comparable to our 1.48 within the -- with  
23 the final.

24 Q. Fine. And on Page 57 of this Exhibit 96, do you find  
25 the Federal Range Ratio for '85-'86 to be .53, is

1           that right?

2                   MR. O'HANLON: Your Honor, the problem  
3 here, now we have gone outside the range of  
4 relevancy. If it's used for impeachment, then we can  
5 ask. But now we're exploring wrong numbers and  
6 asking what they mean. If he asks why -- if this  
7 document is admitted, according to him, for  
8 impeachment purposes to show how things have changed,  
9 and I think that's the limited purpose of the offer  
10 and that's what we ought to stick to. We're now  
11 talking about those numbers as if they're real and  
12 they're not.

13                  MR. KAUFFMAN: Well, Your Honor, I have to  
14 establish what the numbers are before I can draw any  
15 comparisons to the other numbers that the witness has  
16 used. And I have to make sure that I'm comparing the  
17 same type of number to the same type of number. And  
18 then if the witness wishes to disavow the different  
19 numbers, she certainly may do that. But I need to be  
20 able to at least establish what these various numbers  
21 are so that I can compare them.

22                  MR. O'HANLON: I think we're getting rather  
23 repetitive with respect to that.

24                  THE COURT: All right. I'll overrule.  
25



1 BY MR. KAUFFMAN:

2 Q. Dr. Verstegen, on Page 58 of Exhibit 96, you have  
3 some bars and they're called range, is that right?

4 A. Yes.

5 Q. Okay. Do these ranges of revenue show an increase in  
6 the range from '84-'85 to '85-'86?

7 A. Well, as you notice in the final document -- they do,  
8 yes. In the final document, I didn't use '84-'85  
9 data, either, as they utilized this package.

10 Q. Uh-huh.

11 A. And therefore were using incorrect data. Excuse me,  
12 not incorrect data, they were using -- they had  
13 incorrect output for some of these measures.

14 Q. Okay. But in your earlier draft, Exhibit 96, you did  
15 use '84-'85 data, is that correct?

16 A. There, I had '83-'84, '84-'85, '85-'86 is what I  
17 would have liked to have been able to use if I had  
18 reliable sources.

19 Q. Okay.

20 A. And you see, on Page 59, again, you have '83-'84,  
21 '84-'85 and '85-'86.

22 Q. Uh-huh.

23 A. On Page 60, it's really quite a big change, even with  
24 this incorrect data. You'll see that illustrated for  
25 the Federal Range Ratio.

1 Q. Do you put any weight on Page 60, as far as the  
2 comparison of '84-'85 and '85-'86?

3 A. None at all. But I mean, you can look at Page 62 --  
4 what I want to point out is that some of -- they  
5 moved in different directions. Some looked quite  
6 starkly different and went down, and some looked like  
7 they went up -- and so that was what those were.

8 Q. Dr. Verstegen, after we pass enough pages, we can get  
9 on to Page 66.

10 A. Okay.

11 Q. I think on Page 66 of Exhibit 96, you do some  
12 comparisons of statistical equity to student equity  
13 or pupil equity, is that correct?

14 A. Yes.

15 Q. Okay.

16 A. It looks like that.

17 Q. All right. And if we'll look at the -- starting at  
18 the middle of the page, you say, "For example, the  
19 actual total state and local revenue received for the  
20 top 99 percentile of students, \$4,317.00, differs by  
21 approximately 60 percentage points from the 99th  
22 percentile based on statistical calculations," which  
23 were \$10,695.00, is that right?

24 A. Yes, and actually, I have a figure on -- excuse me, a  
25 table on the previous page which compares them

1 directly across from one another as well.

2 Q. If we can look at Page 66 for a second, was your  
3 purpose there to compare the results that you would  
4 get under statistical equity, compared to the results  
5 that you would get under pupil equity?

6 A. I was trying to look at it from every vantage point  
7 that I could and send it off so people could tell me  
8 what exactly was happening and should I write into  
9 the literature that there's such a thing as  
10 statistical equity and different than pupil equity,  
11 and we need to be concerned about pupils and not  
12 abstract numbers that have no meaning. And in this  
13 case, what we found was -- we really did find the  
14 reason for this. It was in the way that the computer  
15 package was doing this. But I was trying to put  
16 forth every bit of information that I had about the  
17 differences here, so I could put it forth to the  
18 community at large and I could get some advice on  
19 what I should do here.

20 Q. Okay. And was part of the community at large to  
21 which you sent it, the Texas Education Agency?

22 A. I was hoping that I would get some feedback from Mr.  
23 Moak on this.

24 Q. Did you get any feedback from Mr. Moak?

25 A. Not a bit.

1 Q. How about Nancy Stevens?

2 A. Nancy found that in the book that the percentiles  
3 weren't weighted. And also, I called Bob Berne after  
4 he looked at it. And there were several people that  
5 I sent this to.

6 Q. Okay. And Nancy Stevens, by the way, is an employee  
7 of Texas Education Agency?

8 A. Yes.

9 Q. On --

10 A. I think that if we had the SAS manual, the package  
11 that was utilized, you would see on Page 1184 that  
12 these percentiles, it's very odd, because everything  
13 else is weighted by pupils and they aren't.

14 Q. Okay. Now, on Page 65 of Exhibit 96, did you there  
15 compare the results of a statistical equity method to  
16 a pupil equity method?

17 A. Excuse me, what page was that?

18 Q. On Page 65 of Exhibit 96.

19 A. Yes, this was a table, as I was saying, that I had  
20 done, which is very easy to look at the differences  
21 if you would like to compare them all across  
22 different measures.

23 Q. Okay. Well, for the moment, does Page 65 allow the  
24 reader to compare the results you would have obtained  
25 under statistical equity method, to the results you

1 would obtain under the pupil equity method?

2 A. I haven't actually compared these numbers, but they  
3 show that at that point in time, some differences  
4 that were emerging in the method that I described  
5 that we did and the method that was coming from the  
6 actual computer printout.

7 Q. Thank you. And then on page --

8 A. Excuse me. And the output that was coming from the  
9 printout.

10 Q. Then on Page 67, you again compared statistical  
11 equity and pupil equity, is that correct?

12 A. On Page 67?

13 Q. Yes.

14 A. Yes, there was a pictorial representation.

15 Q. Okay. And each one of these --

16 A. And Page 68 as well, Counselor.

17 Q. Sure. On Page 67, there's range, restricted range,  
18 restricted range, restricted range, three different  
19 ones. In each case, is the higher bar the  
20 statistical equity and the lower bar the pupil  
21 equity?

22 A. It is. In this case, we were finding that the --  
23 apparently this is a district versus a student  
24 analysis, and the districts did not have the same  
25 percentages of students, something to that extent.

1 At any rate, it wasn't looking at students --

2 Q. Okay.

3 A. -- and it does change the results.

4 Q. Dr. Verstegen, on Page 74, you're listing some  
5 options, I guess, for different changes possibly in  
6 school finance. I think you call this "reduction  
7 options," it's on Page 74. It started on Page 72, is  
8 that correct?

9 A. Yes.

10 Q. Is one of the options you recommend to include a  
11 capital projects fund in combination with other  
12 options?

13 A. Well, I did in this final report, as well. It's in  
14 here.

15 Q. Dr. Verstegen, if we can go on to Page 79 for a  
16 second. On Page 79 of your earlier draft, Exhibit  
17 96, that is an "Equity Comparison of Reduction  
18 Options," is that correct?

19 A. Yes.

20 Q. On that Page 79, did you there compare '85-'86 to  
21 '86-'87 data?

22 A. Yes, I did. It looks like '86-'87. I presented them  
23 both, I don't -- what do you mean compare?

24 Q. Okay. Excuse me.

25 A. I put both of them there, yes.

1 Q. Okay. I understand. And that '86-'87 data is called  
2 "Current Law" and it's called "projected by the Texas  
3 Education Agency as of August of 1986," is that  
4 correct?

5 A. Yes. At that point, I still didn't have '87-'88,  
6 which was the first year of the biennium to which I  
7 wanted to compare all of the options. But I was  
8 setting up a worksheet.

9 Q. Okay. So at least on this Page 79, though, you did  
10 put '85-'86 and '86-'87 data next to each other so  
11 that, I guess, possibly the readers could compare  
12 them if they wished?

13 A. No, this was just a working draft. I was setting up  
14 a number of things and -- they were next to each  
15 other, and if you would like, you can compare them,  
16 but I don't think it's useful to compare projected  
17 data to actual. And that's why I didn't in the final  
18 report, as we had discussed prior to now.

19 Q. And on 80, Page 80, you again called it "Equity  
20 Comparison of Reduction Options" and you listed  
21 '85-'86 and '86-'87 data, is that correct?

22 A. Excuse me?

23 Q. On Page 80, you again called -- you called this  
24 "Equity Comparison of Reduction Options" and you  
25 again listed '85-'86 and '86-'87 data, is that

1 correct?

2 A. Yes, it is.

3 Q. And without going through them all, I think the next  
4 five or six bars and graphs have '85-'86 -- excuse  
5 me, have '85-'86 and '86-'87 data on them, don't  
6 they, on Pages 83, 84, 85, 86?

7 A. Yes, that was the preliminary. And in thinking it  
8 through -- and I'm sure, Mr. Kauffman, you can see in  
9 this other document that I determined that those  
10 should not be put next to each other. Well actually,  
11 I was looking for the first year of the biennium  
12 being '87-'88 and that's quite a gap there, isn't it?

13 Q. Dr. Verstegen, when you were doing your work, did the  
14 Texas Education Agency actually do the computer work  
15 for you?

16 A. Yes, I designed it and analyzed it and all of the  
17 data were run at Texas Education Agency and in some  
18 cases, had input in the design.

19 MR. KAUFFMAN: I pass the witness, Your  
20 Honor.

21 MR. O'HANLON: May I approach the witness?  
22 This really is only one question.

23

24 (Defendants' Exhibit No. 49 marked)

25



## REDIRECT EXAMINATION

BY MR. O'HANLON:

Q. Dr. Verstegen, I'm handing you now what's been marked for identification as Defendants' Exhibit No. 49. Can you identify that document?

A. It looks like a vita of mine.

Q. Okay. Is that current?

A. It's fairly current.

MR. O'HANLON: I offer Defendants' 49, Your Honor.

MR. RICHARDS: No objection.

MR. KAUFFMAN: No objection, Your Honor.

MR. O'HANLON: Pass the witness.

(Defendants' Exhibit No. 49 admitted)

MR. TURNER: Pass the witness, Your Honor.

MR. R. LUNA: No questions.

THE COURT: All right, ma'am. We've come to the end of your testimony. We thank you. Just to bolster what I told you a minute ago, I'm going to read you part of our rules.

THE WITNESS: Oh, Your Honor, I'm so embarrassed I said anything.

THE COURT: "A party may obtain discovery of documents" -- this is talking about expert witnesses, and you're one of those. "A party may

1 obtain discovery of documents and intangible things,  
2 including all tangible" -- "all tangible reports,  
3 physical models, compilations of data and other  
4 material prepared by an expert or for an expert in  
5 anticipation of the trial," and so on. And then,  
6 "All of those papers, whether they be final reports  
7 or not, are subject to scrutiny by the lawyers, both  
8 sides, and are subject to be used in trial," if  
9 there's anything in there that is worthy to be looked  
10 at. That may also be the rule in other cases, in  
11 case you ever have to be a witness some other place.

12 THE WITNESS: Thank you. Bless your heart  
13 for your effort.

14 (Witness excused.)

15 THE COURT: Okay. Now, we're going to stop  
16 for the day. Next Monday is a Monday of a jury week,  
17 so we've got that jury week routine, jury Monday  
18 routine we'll have to go through. I'll find us a  
19 courtroom and you can check out here in front where  
20 we will be, and we'll be in a different place. So,  
21 I'll see you all again Monday morning at 9:00.

22 MR. TURNER: Your Honor, is your schedule  
23 still to take off two weeks beginning on the 9th?

24 THE COURT: Yes, sir.

25 (Proceedings recessed until March 2, 1987.)