Level and Use of Resources in Arkansas: Are Use Patterns Consistent With Doubling Student Performance?

June 15, 2006

Prepared for the Senate and House Adequacy Study Oversight Committee

Lawrence O. Picus and Associates
Questions we seek to answer:

• What is the level of resources per pupil in Arkansas?
• Are the resources distributed fairly and targeted to need?
• How are those resources used?
• Do typical resource use patterns reflect the most effective ways to use education dollars, and the elements included in Arkansas’ funding model?
• Increased by about 130% from 1970 to 2000 in AR, and by 127% nationally, in real, per pupil terms
• Increased another 14% from 2000 to 2003 in AR, and by 10% nationally
• Was 68% of US average in 1970 and rose to 79% by 2003
• So, education revenues have been constantly rising in AR and nationally, and AR has been catching up to the national average
Overview of Changes in Revenues and Spending related to Act 59: 2004 to 2006

- Local Revenue up 9%
- State Revenue up 25%
  - Categorical Revenue increased from $40 per student to $422 per student
- Total Revenue up 16.5%
- Current Expenditures up 13%
- Undoubtedly moved closer to the national average
Arkansas Revenues Per Pupil in 2004-05

- 2004-05 revenues per pupil
  - Foundation amount: $5,424
  - State categorical – NSL, ELL, ALE 376
  - Other state aid, including capital 524
  - Local above 25 mills, including debt 845
  - Federal 1,049
  - Other local non-tax 684
  - TOTAL $8,902

  which includes capital and debt of $283

  so current operating revenues are $8,619

  which is far above $5,424
2004-05
Arkansas Public School Revenues

- Federal Revenue, $1,049, 12%
- Other Revenue, $684, 8%
- URT (required 25 mills), $1,591, 18%
- State Rev (foundation), $3,834, 43%
- State Rev (categorical), $422, 5%
- State Rev (other), $440, 5%
- State Rev (capital), $39, 0%
- Local Rev (> 25 mills), $845, 9%
- Other Revenue, $684, 8%

Total Revenue = $8,902
## Revenue Increases

<table>
<thead>
<tr>
<th>Revenue Source</th>
<th>2003-04 Revenue Per Pupil</th>
<th>2003-04 Total Revenue (millions)</th>
<th>2004-05 Revenue Per Pupil</th>
<th>2004-05 Total Revenue (millions)</th>
<th>% Change in Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Rev (foundation)</td>
<td>$3,237</td>
<td>$1,450</td>
<td>$3,834</td>
<td>$1,728</td>
<td>19.2%</td>
</tr>
<tr>
<td>URT (required 25 mills)</td>
<td>$1,518</td>
<td>$680</td>
<td>$1,591</td>
<td>$717</td>
<td>5.5%</td>
</tr>
<tr>
<td>Total Foundation Revenue</td>
<td>$4,755</td>
<td>$2,129</td>
<td>$5,424</td>
<td>$2,445</td>
<td>14.9%</td>
</tr>
<tr>
<td>State Rev (categorical)</td>
<td>$15</td>
<td>$7</td>
<td>$376</td>
<td>$170</td>
<td>2,337.5%</td>
</tr>
<tr>
<td>State Rev (other)</td>
<td>$557</td>
<td>$250</td>
<td>$524</td>
<td>$236</td>
<td>-5.3%</td>
</tr>
<tr>
<td>Local Rev (local tax &gt; 25 mills)</td>
<td>$727</td>
<td>$326</td>
<td>$845</td>
<td>$381</td>
<td>17.0%</td>
</tr>
<tr>
<td>Federal Revenue</td>
<td>$1,000</td>
<td>$448</td>
<td>$1,049</td>
<td>$473</td>
<td>5.7%</td>
</tr>
<tr>
<td>Other Revenue</td>
<td>$642</td>
<td>$287</td>
<td>$684</td>
<td>$308</td>
<td>7.3%</td>
</tr>
<tr>
<td>Total Revenue</td>
<td>$7,656</td>
<td>$3,447</td>
<td>$8,902</td>
<td>$4,014</td>
<td>16.5%</td>
</tr>
</tbody>
</table>
Composition of Revenue Increases from Act 59

• Bulk of increase in foundation revenues were from the state
• Huge increase in state categorical revenues based on NSL, ELL and ALE student counts – estimates of need
• Large increase in local tax revenues from property tax rates above the required 25 mills
• Modest changes in federal revenues
What are the Distributional Characteristics of These Dollars?

- Degree of expenditure per pupil disparities across districts, using all local plus foundation revenues
- Degree of linkage between expenditures per pupil (minus transportation) and:
  - Property wealth per pupil
  - Percent NSL students
  - Percent minority students
  - Percent low achieving on the state test
Issues Concerning the Distribution of Resources

• Are overall differences in general revenues per pupil -- state foundation and all local revenues -- modest?
• Has the state equalized spending (minus transportation) by district property wealth per pupil?
• Has the state targeted spending per pupil to educational need?
Overall Disparities in General Revenues Per Pupil

<table>
<thead>
<tr>
<th></th>
<th>2003-04</th>
<th>2004-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient of Variation</td>
<td>0.08</td>
<td>0.07</td>
</tr>
<tr>
<td>McLoone Index</td>
<td>0.95</td>
<td>0.95</td>
</tr>
<tr>
<td>Federal Range Ratio</td>
<td>0.34</td>
<td>0.29</td>
</tr>
<tr>
<td>Fiscal Neutrality: Correlation</td>
<td>0.60</td>
<td>0.51</td>
</tr>
<tr>
<td>Elasticity</td>
<td>0.16</td>
<td>0.13</td>
</tr>
</tbody>
</table>
Overall Disparities in General Revenues Per Pupil Have Declined

- Act 59 improved the equity characteristics of resource distribution:
  - The CV dropped
  - The McLoone Index rose
  - The correlation and wealth elasticity between revenues and property wealth per pupil both dropped
- Foundation plus all other local revenues per pupil are more equally distributed across the state and not closely linked to local property wealth
Arkansas has equalized expenditures per Pupil (minus transportation) across District Property Wealth per Pupil
Expenditures per Pupil (minus transportation) v. Wealth per Pupil

- Expenditures per pupil (minus transportation) are almost the same across all wealth deciles
- The modest linkage in 2004 dropped for both 2004-05 and 2005-06
- The spike in decile 9 reflects the desegregation funds in Little Rock and Pulaski county and represent an anomaly
Expenditures Per Pupil (minus transportation) are Targeted to Poverty (percent NSL)
Expenditures Per Pupil (minus transportation) are Targeted to Poverty

- Expenditures per pupil (minus transportation) rise as the percent of NSL students in a district increases.
- The increase begins to rise more rapidly in the top five deciles of poverty.
- Expenditures per pupil in the poorest districts are $1,500 per pupil more than in the least poor districts! Due to both Arkansas NSL funds and federal aids.
- Again, the spike, this time at decile seven, is due to desegregation resources in Little Rock and Pulaski County.
Property Wealth Per Pupil and Student Poverty NOT Linked in AR

[Graph showing the percentage of NSLA students across different property wealth deciles for the years 2003-04, 2004-05, and 2005-06.]
Property Wealth Per Pupil and Student Poverty NOT Linked in AR

• The percent of students eligible for the federal National School Lunch program is almost the same -- ~55% -- across all districts grouped by property wealth per pupil, though it drops a bit for the highest wealth districts

• This is an unusual pattern compared with many other states
Expenditures Per Pupil (minus transportation) are Targeted to Minority Districts

<table>
<thead>
<tr>
<th>Percentage of Nonwhite Student Deciles (1= lowest %; 10 = highest %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Expenditures (without transportation)</td>
</tr>
<tr>
<td>G1 $6,031 G2 $6,809 G3 $6,868 G4 $7,000 G5 $7,500 G6 $8,000 G7 $8,500 G8 $9,000 G9 $7,878 G10 $6,868</td>
</tr>
</tbody>
</table>

Legend:
- 2003-04
- 2004-05
- 2005-06 B

Allan Odden, Michelle Turner Mangan & Lawrence Picus
Expenditures Per Pupil (minus transportation) are Targeted to Minority Districts

- Expenditures per pupil (minus transportation) rise as the percent of minority (non-white) students rises.
- The highest minority districts spend about $1,000 per pupil more than the least minority district.
- Again, the spike at decile 9 is due to desegregation funds.
Expenditures Per Pupil (minus transportation) are Targeted to Low Achievement

Student Performance Deciles (1 = lowest % of proficient students; 10 = highest % of proficient students)

- G1
- G2
- G3
- G4
- G5
- G6
- G7
- G8
- G9
- G10

Current Expenditures (without transportation)

- $6,092
- $6,905
- $7,895
- $6,774
- $4,000
- $5,000
- $6,000
- $7,000
- $8,000
- $9,000
- $10,000
Expenditures Per Pupil (minus transportation) are Targeted to Low Achievement

- The greater the percentage of students scoring proficient or higher on the state test, the lower the spending per pupil
- Spending per pupil is higher (~$1,000 per pupil) in districts with fewer students learning to or above proficiency, largely due to categorical funding
- For these additional resources to matter, districts need to spend them in ways that boost student learning
Expenditures Per Pupil by Function

With a focus on doubling student performance, the evidence-based adequacy study that was translated into Act 59:

• Provided nearly all new revenues for increased instructional expenditures – lower class sizes, extra help: NSL, ELL, ALE, professional development

• Provided no increase for administrative functions

• The expectation would be that instructional expenditures would rise
## Expenditures Per Pupil by Function

<table>
<thead>
<tr>
<th>Expenditure Type</th>
<th>Per Pupil, 2003-04</th>
<th>% of Overall Budget, 2003-04</th>
<th>Per Pupil, 2004-05</th>
<th>% of Overall Budget, 2004-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td>$4,093</td>
<td>61%</td>
<td>$4,604</td>
<td>61%</td>
</tr>
<tr>
<td>Instructional Support</td>
<td>$316</td>
<td>5%</td>
<td>$395</td>
<td>5%</td>
</tr>
<tr>
<td>Pupil Support</td>
<td>$293</td>
<td>4%</td>
<td>$325</td>
<td>4%</td>
</tr>
<tr>
<td>Site Administration</td>
<td>$374</td>
<td>6%</td>
<td>$413</td>
<td>6%</td>
</tr>
<tr>
<td>Central Administration</td>
<td>$288</td>
<td>4%</td>
<td>$304</td>
<td>4%</td>
</tr>
<tr>
<td>Maintenance &amp; Operations</td>
<td>$619</td>
<td>9%</td>
<td>$676</td>
<td>9%</td>
</tr>
<tr>
<td>Transportation</td>
<td>$242</td>
<td>4%</td>
<td>$271</td>
<td>4%</td>
</tr>
<tr>
<td>Food &amp; Other</td>
<td>$447</td>
<td>7%</td>
<td>$499</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Total Current Expenditures</strong></td>
<td><strong>$6,672</strong></td>
<td><strong>100%</strong></td>
<td><strong>$7,489</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Expenditures Per Pupil by Function

- Data show that instructional expenditures as a percent of all operating expenditures did not rise from 2003-04 to 2004-05
- We do not expect any change in 2005-06
- Spending in all functions increased so all functions maintained their relative share of resources
Instructional Expenditures Per Pupil Did Not Rise Proportionately

- This is not surprising
- The Legislature put few if any restrictions on the use of the new money
- So the expectation should be that districts would spend the new money largely the way they had been spending the old money
- This has been the national pattern for 45 years
Background Information on Uses of Education Resources

- Quick summary of what has happened as a result of the infusion of new educational resources over the past 35-45 years
- Patterns in Arkansas today reflect these historical trends
Use of Resources by Function ...

1960 to 2005 – National average and (Arkansas)

• 60-61 (61) % on instruction
• 5 (5,4) % on each of instructional support and pupil support
• 10 (10) % on administration – 5-6 percent school, and 5-4 percent district
• 10 (9) % on operations and maintenance
• 5 (4) % on transportation
• 5 (7) % on food, short term debt and “other”
Use of Resources by Function ...

• This pattern of use by function has stayed remarkably constant over a 45 year time period despite tremendous change in education
  • Enrollment growth and decline, expansion of categorical programs, four eras of education reform, rise of teacher unions, and others.
• Does that mean education resource use has not changed in the past 45 years? NO
• Tremendous change has occurred, but is not revealed by this common way of reporting resource use in the public schools
Education Resource Use ....

• Dollars per pupil after adjusting for inflation rose ~350 percent from 1960 to 2005
• Did the bulk of the new dollars go to higher teacher salaries? NO
• Did the bulk of the new dollars go for significantly lower class sizes? NO
• Did student performance rise significantly? NO
• So, how was the new money used?
  • To expand programs and services ....
  • Outside of the regular or core classroom
Education Resource Use ....

- How were new dollars used?
  - To add specialist teachers (art, music, PE, etc.) in elementary and middle schools to provide planning and preparation time for core teachers
  - Thus, to expand elective classes in all schools
  - To add services for students with special needs:
    - Students with disabilities, from lower income backgrounds, ESL students, vocational education students, desegregation
  - To add pupil support services:
    - Guidance counselors, social workers, etc.
Education Resource Use ....

- Were the additional resources used in the main in the regular classroom to bolster instruction for the core classes of math, science, reading/English, history, language? NOT REALLY
- The bulk of the new uses of resources were for programs and services OUTSIDE of the REGULAR CLASSROOM
- Dollars targeted to specific students – low income, handicapped, ELL, deseg – were used for targeted programs but often the programs were ineffective
Education Resource Use ....

• As a result, the percentage of spending on core teachers, i.e., teachers who teach the core subjects, dropped substantially from 1960 to 2005, and the percentage of spending on teachers outside the regular classroom increased ---- though all this took place within the Instructional function.

• Over the past 45 years, the portion of the budget spent on regular teachers has slowly and consistently declined each decade.
Education Resource Use ....

- Did student performance rise because of the new uses of resources? NO
- To be sure, students who needed extra help – the disabled, the struggling student from low income families, ELL students, etc. – received extra help and they should continue to receive extra help
- But performance generally did not rise!
- Makes sense: most of the new money was used outside the regular classroom where core instruction takes place, and too much of the “special needs” resources were used for remedial programs
Education Resource Use ....

- So we have this 45 year history of....
- Rising real dollars per pupil, after adjusting for inflation, enrollment growth, and even excluding capital spending
- And falling (in the 60s, 70s) or stable or very slowly rising (in the early 80s, 90s) performance
- Which many economists and policy makers label as low rate of return on investment
Education Resource Use ....

- Any recent changes in use of resources? YES
- Do they auger well for improved productivity of the education system? NO
- Why:
  - Secondary schools (middle and high school) are moving from 6 period to 7 period days, with fewer minutes for instruction in core subjects and more instruction time for electives and at a higher price as teachers continue to teach only five periods.
Education Resource Use ....

• Though many districts, especially urban districts, have put more into professional development, too much extant professional development is a mile wide and an inch deep, with almost no impact on teachers’ instructional practice and student performance

• In many small districts, class sizes are quite small, so costs are high, but performance is still flat

• And the curriculum program in too many schools is not rigorous, does not focus on core concepts, and is not taught to thinking and problem solving levels
Key Resource Use Challenges

• Only reduce class sizes strategically
• Change curriculum to include core concepts
• Focus on improving instructional practice to thinking and problem solving
  • High quality professional development with instructional coaches
  • Could reinforce with knowledge and skills teacher compensation structure
• Target extra help and focus services on learning the core curriculum, not test prep or remedial
Using Resources More Effectively

The Evidence-Based and Arkansas funding models have several examples of how to use resources more effectively:

• Small classes only in the early elementary years
• 6 rather than 7 period days in secondary schools
• 10 days of intensive teacher training in summer institutes
• Full time instructional coaches in all schools
• Extended learning opportunities for struggling kids:
  • Tutoring, extended days, summer, ESL,
So Did Arkansas Schools Use New Funds Effectively?

- No state’s current fiscal accounting system reports in detail on how resources are used at the school level.
- Thus, Arkansas asked Lawrence O. Picus and Associates to conduct a study of school uses of resources in a random sample of schools.
- Goal: to identify how resources are used by educational strategies, and the strategies built into the Arkansas funding model.
Resource Use in Arkansas: A Preliminary Analysis

Random Sample of 107 schools
- 55 Elementary
- 17 Middle
- 35 High Schools

48,132 Students
- Average 53% NSL
- Average 13% Special Education
- Average 5% ELL
## Resource Use in the Average School in the Total Sample

<table>
<thead>
<tr>
<th>Staffing</th>
<th>Funding Model</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>0.90</td>
<td>0.97</td>
</tr>
<tr>
<td>Instr. Facilitator</td>
<td>2.25</td>
<td>0.45</td>
</tr>
<tr>
<td>Secretary</td>
<td>1.80</td>
<td>1.51</td>
</tr>
<tr>
<td>Core Teachers</td>
<td>18.66</td>
<td>18.55</td>
</tr>
<tr>
<td>Spec. Teachers</td>
<td>3.73</td>
<td>7.62</td>
</tr>
<tr>
<td>Tutors</td>
<td>5.19</td>
<td>0.31</td>
</tr>
<tr>
<td>Librarian</td>
<td>0.90</td>
<td>0.93</td>
</tr>
<tr>
<td>Pupil Support</td>
<td>2.25</td>
<td>3.51</td>
</tr>
</tbody>
</table>
AR School Resource Use: Instructional Time

• Average Instructional Day: 6 hours, 13 min

• Average Class Length
  • Math: 64 minutes
  • Reading (Elementary): 1 hour, 53 minutes
  • English/LA (Mid/High): 57 minutes
  • Soc. Studies & Science (Mid/High): 53 min. ea.
## AR School Resource Uses: Principal

<table>
<thead>
<tr>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Principal for Every 500 Students = 96</td>
<td>Total = 104</td>
</tr>
</tbody>
</table>
## AR School Resource Uses: Assistant Principal

<table>
<thead>
<tr>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Assistant Principal in the model</td>
<td>Total = 63</td>
</tr>
</tbody>
</table>


## AR School Resource Uses: Principal + Assistant Principal

<table>
<thead>
<tr>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Principal or AP for Every 500 Students = 96</td>
<td>Total = 167</td>
</tr>
</tbody>
</table>
AR School Resource Uses: Instructional Facilitators

<table>
<thead>
<tr>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Facilitator for Every 200 Students = 241</td>
<td>Total = 49</td>
</tr>
</tbody>
</table>

These findings are at odds with the Web survey responses – next slide.
Q 24: Instructional Facilitators

- 156 districts (84.6%) reported instructional facilitators

<table>
<thead>
<tr>
<th>How Allocated</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADM</td>
<td>11</td>
<td>7.1%</td>
</tr>
<tr>
<td>Poverty/NSL Student Count</td>
<td>49</td>
<td>31.4%</td>
</tr>
<tr>
<td>Per School</td>
<td>83</td>
<td>53.2%</td>
</tr>
<tr>
<td>Per Teacher</td>
<td>13</td>
<td>8.3%</td>
</tr>
<tr>
<td>Through Education Cooperatives</td>
<td>50</td>
<td>32.1%</td>
</tr>
<tr>
<td>Other</td>
<td>55</td>
<td>35.3%</td>
</tr>
</tbody>
</table>
## AR School Resource Use: Students per Core Teacher

<table>
<thead>
<tr>
<th></th>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>23:1</td>
<td>Range (13-24):1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average 20:1</td>
</tr>
<tr>
<td>Middle</td>
<td>25:1</td>
<td>Range (11-35):1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average 25:1</td>
</tr>
<tr>
<td>High</td>
<td>25:1</td>
<td>Range (10-41):1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Average 29:1</td>
</tr>
</tbody>
</table>
## AR School Resource Use: Core Teachers in Sample Schools

<table>
<thead>
<tr>
<th></th>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>897</td>
<td>1,007</td>
</tr>
<tr>
<td>Middle</td>
<td>299</td>
<td>308</td>
</tr>
<tr>
<td>High</td>
<td>801</td>
<td>669</td>
</tr>
</tbody>
</table>
## AR School Resource Use: Specialist Teachers per Student

<table>
<thead>
<tr>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% of Core Teachers = 399</td>
<td>Total = 815</td>
</tr>
</tbody>
</table>
AR School Resource Uses: Instructional Aides

- 37 Library Aides
- 49 Resource Room Aides
- 20 ELL Aides
- 52 Other Extra Help Aides
- 61 Special Education Inclusion Aides
- 57 Special Educ. Resource Room Aides
- 113 Other Instructional Aides

= Total of 389 Instructional Aides

These findings square with the Web survey – see next slide.
Q 26: Instructional Aides

- Outside of special education 176 (95.6%) of the districts employ instructional aides.
- There are 82 Federally funded instructional aides in the average district.
- There are 13 state and locally funded aides in the average district.
### AR School Resource Uses: Tutors

<table>
<thead>
<tr>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Tutor for Every 100 FRL Students = 229</td>
<td>Total = 34</td>
</tr>
</tbody>
</table>

These findings are at odds with the Web survey findings – see slide 56.
### AR School Resource Uses: Tutors

<table>
<thead>
<tr>
<th>NSL Concentration</th>
<th>State Funding Model</th>
<th>Actual in Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 70%</td>
<td>1 Tutor for Every 100 Students = 414</td>
<td>17</td>
</tr>
<tr>
<td>70-89%</td>
<td>2 Tutors for Every 100 Students = 122</td>
<td>15</td>
</tr>
<tr>
<td>≥90%</td>
<td>3 Tutors for Every 100 Students = 19</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td>555</td>
<td>34</td>
</tr>
</tbody>
</table>
Q25: Certified Teacher Tutors

- 162 (88.0%) of the districts reported the use of certified teachers serving as tutors

<table>
<thead>
<tr>
<th>How Allocated</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADM</td>
<td>9</td>
<td>5.6%</td>
</tr>
<tr>
<td>Poverty/NSL Student Count</td>
<td>52</td>
<td>32.1%</td>
</tr>
<tr>
<td>Per School</td>
<td>86</td>
<td>53.1%</td>
</tr>
<tr>
<td>Per Teacher</td>
<td>11</td>
<td>6.8%</td>
</tr>
<tr>
<td>Through Education Cooperatives</td>
<td>8</td>
<td>4.9%</td>
</tr>
<tr>
<td>Other</td>
<td>62</td>
<td>38.3%</td>
</tr>
</tbody>
</table>
AR School Resource Uses: Guidance Counselors, Nurses, etc.

<table>
<thead>
<tr>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 FTE for Every 500 Students = 241</td>
<td>Total = 376</td>
</tr>
</tbody>
</table>
## AR School Resource Uses: Librarians

<table>
<thead>
<tr>
<th>State Funding Model</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7 FTE for Every 500 Students = 67</td>
<td>Total = 99</td>
</tr>
</tbody>
</table>
## The High School Schedule

<table>
<thead>
<tr>
<th>Class</th>
<th>Percent of Total Class Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career &amp; Technical</td>
<td>16%</td>
</tr>
<tr>
<td>English</td>
<td>14%</td>
</tr>
<tr>
<td>Math</td>
<td>12%</td>
</tr>
<tr>
<td>Science</td>
<td>11%</td>
</tr>
<tr>
<td>History</td>
<td>10%</td>
</tr>
</tbody>
</table>
The High School Schedule

- Only 47 percent of high school classes are in the core content areas of math, science, history, language arts.
- Career technical classes comprise 16 percent of all classes, more than any individual core subject.
- Almost 2,000 of the 16,561 high school students take an athletics class – football, basketball, etc. – in addition to their P.E. class.
### Q13: Daily Substitute Pay – is low

<table>
<thead>
<tr>
<th>Substitute Pay</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>51.15</td>
<td>72.16</td>
</tr>
<tr>
<td>Minimum</td>
<td>40.00</td>
<td>40.00</td>
</tr>
<tr>
<td>Maximum</td>
<td>150.00</td>
<td>281.49</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean Daily Substitute Pay by Enrollment Quintiles</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>50</td>
<td>52</td>
<td>53</td>
<td>56</td>
<td>58</td>
</tr>
<tr>
<td>Maximum</td>
<td>65</td>
<td>73</td>
<td>87</td>
<td>103</td>
<td>85</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mean Substitute Pay by Revenue Quintiles</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>52</td>
<td>50</td>
<td>52</td>
<td>51</td>
<td>50</td>
</tr>
<tr>
<td>Maximum</td>
<td>68</td>
<td>71</td>
<td>73</td>
<td>73</td>
<td>78</td>
</tr>
</tbody>
</table>
Teacher Beginning and Average Salaries Rose

- Did beginning teacher salaries change?
  - New teacher salary 2003-04 = $27,218
  - New teacher salary 2004-05 = $30,070
- Did average teacher salaries change?
  - Average teacher salary 2003-04 = $39,409
  - Average teacher salary 2004-05 = $41,489
- In what type of districts have beginning teacher salaries changed?
  - Smallest and Poorest Districts
Beginning Teacher Salary
by District Size

<table>
<thead>
<tr>
<th>District Size Deciles (1= lowest ADM; 10 = highest ADM)</th>
<th>2003-04</th>
<th>2004-05</th>
<th>2005-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>$24,299</td>
<td>$27,523</td>
<td>$28,318</td>
</tr>
<tr>
<td>G2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G10</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Beginning Teacher Salary
by Assessed Valuation Per Pupil

Property Wealth Deciles (1 = lowest wealth; 10 = highest wealth)

- 2003-04
- 2004-05
- 2005-06 B

Beginning Teacher Salary

- $27,465
- $29,652
- $28,000
- $24,000
- $20,000
- $16,000
- $12,000
- $8,000
- $4,000

G1 G2 G3 G4 G5 G6 G7 G8 G9 G10

$28,213
$30,663

$8,000 $12,000 $16,000 $20,000 $24,000 $28,000 $32,000 $36,000
### Average Teacher Salary by District Size

<table>
<thead>
<tr>
<th>Decile</th>
<th>2003-04</th>
<th>2004-05</th>
<th>2005-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>$31,858</td>
<td>$35,939</td>
<td>$44,043</td>
</tr>
<tr>
<td>G2</td>
<td>$35,939</td>
<td>$40,000</td>
<td>$45,174</td>
</tr>
<tr>
<td>G3</td>
<td>$39,925</td>
<td>$44,043</td>
<td>$50,258</td>
</tr>
<tr>
<td>G4</td>
<td>$43,943</td>
<td>$48,069</td>
<td>$54,384</td>
</tr>
<tr>
<td>G5</td>
<td>$47,961</td>
<td>$52,094</td>
<td>$58,510</td>
</tr>
<tr>
<td>G6</td>
<td>$51,979</td>
<td>$56,120</td>
<td>$63,936</td>
</tr>
<tr>
<td>G7</td>
<td>$55,997</td>
<td>$60,266</td>
<td>$69,762</td>
</tr>
<tr>
<td>G8</td>
<td>$59,015</td>
<td>$64,532</td>
<td>$75,288</td>
</tr>
<tr>
<td>G9</td>
<td>$62,033</td>
<td>$68,800</td>
<td>$80,814</td>
</tr>
<tr>
<td>G10</td>
<td>$65,051</td>
<td>$73,057</td>
<td>$87,340</td>
</tr>
</tbody>
</table>

**Notes:**
- District Size Deciles: 1 = lowest ADM; 10 = highest ADM

Average Teacher Salary by Assessed Valuation Per Pupil

Average Teacher Salary

Property Wealth Deciles (1= lowest wealth; 10 = highest wealth)

- 2003-04
- 2004-05
- 2005-06 B

G1
G2
G3
G4
G5
G6
G7
G8
G9
G10

$10,000 $15,000 $20,000 $25,000 $30,000 $35,000 $40,000 $45,000 $50,000

$39,924 $40,000 $40,000 $41,487 $43,540 $37,051

Allan Odden, Michelle Turner Mangan & Lawrence Picus
Q23: Districts Increased the Number of Contract Days
What Happened in Arkansas?

• The 2004 Arkansas School Finance Adequacy reform increased school resources based on the Arkansas version of the Evidence-Based model.
• The legislature did not require districts to use the resources according to the model; it deferred to the judgment of local educators.
• Did local school systems use the resources for the evidence-based, high impact strategies in the evidence-based model? Not Really.
What Happened in Arkansas?

- In a study of 107 schools, we found that:
- In terms of class size:
  - Elementary class sizes averaged 20 while the model provided funding for 23
  - Middle school class sizes averaged 25 with funding for 25
  - High school class sizes averaged 29 versus funding for 25.
- Schools had an average of 815 specialist or elective teachers, about 40% more than core teachers, whereas the model provided 399 or 20% above core teachers.
What Happened in Arkansas?

- Schools had an average of 0.20 instructional coaches for every 200 students, while the model funded 1 per 100. And many superintendents asked why instructional coaches were needed.
- A number of principals asked where the instructional coaches were, but they were not in their schools.
What Happened in Arkansas?

- Schools had an average of 0.15 teacher tutors for every 100 poverty students, while the model funded 1 per 100. And many superintendents and principals asked why tutors were needed.
  
- And rather than using the resources for extra help, many local educators wanted to use the “extra help” resources for smaller classes and higher salaries, neither of which provides extra helps for struggling students.
What Happened in Arkansas?

- Most districts increased teacher salaries by the dollars for the extra days for training the model provided but few expanded systemic professional development.

- There was weak leadership at all levels around the strategies known to double student performance.
What Should Happen Now?

• Put some constraints on use of some resources:
  • NSL money focused on tutoring and some other program
  • Instructional facilitators
• Mount a statewide leadership and capacity development strategy to “double” student performance over the next ten years
Six Steps to Doubling Results

- We know how to double student academic performance
- Examples around the country show how student achievement results can be doubled
  - Aldine (TX), Long Beach (CA), Newport News (VA), Madison (WI)
  - Washington's' Reading First Schools, Rosalia, Kennewick
- We need to identify Arkansas examples
Six Steps to Doubling Results

1) Analyze student achievement data to become deeply knowledgeable about performance issues and nature of the achievement gap
   - Importance of formative assessments

2) Review evidence on good instruction and effective curriculum
   - Throw out the old curriculum and replace with a different, more rigorous curriculum
Six Steps to Doubling Results

3) Invest heavily in teacher training
   - Resources for trainers
   - Intensive summer institutes, longer teacher work years
   - Instructional coaches in all schools

4) Provide extra helps for struggling students - state funded and federal Title 1
   - Tutoring: 1-1, 1-3, 1-5
   - Extended days
   - Summer School
   - ELD for ELL students
Six Steps to Doubling Results

5) Smaller classes in early elementary years
   - K-3 at 15 from randomized trials

6) Strong leadership around data-based decision making and improving the instructional leadership, by both the superintendent and principal
Six Steps to Doubling Results

- Bolster by measuring and reporting results, and accountability for both students and teachers
  - Measure results, faculties analyze results and use to continue to improve instruction
The New School Vision ...

- Personalized learning environments – school units 400-600 or smaller – strong parent involvement and community outreach
- Most important factor: high quality teacher in every classroom
  - Urban and rural, low performing schools, math and science
- Ongoing, intensive training for all teachers in all subjects and at all levels
- Next most important factor: a rigorous curriculum program in all core content areas
The New School Vision ...

- Focus on teaching students to think, problem solve, apply knowledge in the core subjects of math, science, reading/English, history, language
- Relentless pursuit of high levels of student achievement through a range of extended learning opportunities
- Bolstered with significant parent outreach and community support
- Reinforced by a changed teacher compensation system that is built on a more adequate base salary and tied to teacher knowledge, skills and instructional expertise
The Arkansas Funding and Evidence-Based Model

- Produces a completely re-engineered school
  - Think of a hybrid car but not a hover-mobile
    - The Prius gets twice the gas mileage of a traditional car, but still looks like a car
    - It is a re-engineered car with double performance
- Built on strategies that are evidence-based
- Evidence that each strategy has boosted student academic achievement
- Assumes reallocation of all extant resources to the elements of the model
Discussion with Committee
How to Contact Us

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