Colorado School Finance Project: Analysis Update

John Augenblick
Augenblick, Palecek & Associates
Tracie Rainey
Colorado School Finance Project
September 2008

Colorado School Finance Project

- Began 14 years ago – Profile data
- In 2001-02, Adequacy Analysis – Professional Judgment and Successful School District
- Updated Adequacy Analysis twice
- Analyze district issues: enrollment changes – cost pressures – national trends
- 2007-08 National Trends and Research on Spending and Performance

Previous CSFP Work

- Purpose
  - Cost of meeting state standards and requirements
  - Weights for student and district characteristics
  - Total cost for every district
- Utilize methodology results:
  - Successful School District
  - Professional Judgment
  - Evidence-Based
  - Statistical
Recent CSFP Work

- Identify research that has examined the relationship between particular resources and student achievement
- Examine states with large increases in spending
- Compare Colorado to 50 states in achievement & spending

Research Cautions

- Most research focuses on improvement in student achievement, no direct link to meeting state-specific performance expectations
- Given how focused most research is, it is difficult to put all the pieces together and create one best service-delivery approach

Do Resources Affect Achievement?

- Career-technical education
- Counselors
- Full-day kindergarten
- Pre-school
- Professional development
- Small class size
- Summer school
- Teacher pay (amount)
- Technology
Research Shows

- Positive results for most resource areas
- Differences in findings:
  - Some is older (no longer relevant)
  - Some is highly focused (not generalized)
  - Approach (few studies use random assignment)
  - A few "meta" analyses (numerous studies)
  - Some research by recognized entities (e.g. RAND or the USDoE), and/or cited by AERA

Other Limitations

- Studies do not equate a dollar investment to a specific performance requirement
- Local control - a balance with state initiatives

Questions

- Initial thoughts? Reactions?
- How is it helpful?
- Cautions?
Looking at 4 states
- Arkansas
- Kentucky
- Maryland
- New Jersey

States differ
- Rationale for spending increase (litigation or not)
- Timing of new revenues (when and targeted)
- Extent of impact (all or some districts)
- Did school finance system change?

Findings
- Some common categories:
  - Pre-school - expansion
  - Increase teacher salaries
  - Student support programs/services: summer school, parent program, after school, health centers, counselors
Findings (continued)

- Student performance rose at higher-than-average rates.

- Investments resulted in school district funding increases (4-10% per year over inflation)

Questions?

- What can Colorado learn from other states?

- Does it matter?

50 State Comparison

- Utilize NAEP performance results and state spending

  First step:
  - Analyze relative need, wealth, tax effort, spending, and performance in 2004-05
Analysis

- Relative need
  - Weighted students divided by un-weighted students

- Wealth
  - Personal income per capita adjusted by inter-state COL

- Tax effort for education
  - State and local tax effort for current operations per $1,000 of personal income

Analysis (continued)

- Spending
  - Total staff per 1,000 weighted students
  - Average salary of instructional staff adjusted by inter-state COL
  - Current spending per weighted student adjusted by inter-state COL

- Performance
  - Average of NAEP percent proficient and above for 4th and 8th grade math and reading

Results for Colorado:

- Average in need (-.9%)
- High in wealth (+12.1%)
- Low in tax effort (-18.8%)
- Low in spending (-13.3% for staffing, -2.7% for instructional staff salary, and -10.8% for spending)
- High in relative performance (+11.1%), but low relative to where the state needs to be (only 34.8% proficient and above)
Colorado specific

- Relationship between performance and variables (50 states):
  - High negative with need
  - Moderate positive with wealth
  - None with effort
  - Moderate positive with staffing
  - Low positive with salary
  - Moderate positive with spending
# 50 State Comparison

**Comparison of the 50 States in Terms of K-12 Education Need, Wealth, Resource Use, Tax Effort, and Performance in 2004-05**

<table>
<thead>
<tr>
<th>Need</th>
<th>Wealth</th>
<th>State/Local Tax Effort</th>
<th>Resource Use</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>5</td>
<td></td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td></td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>9</td>
<td></td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td></td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

- **Need Index**: Adjusted by Cost of Living.
- **Wealth Index**: Relative to National Average.
- **Tax Effort Index**: Revenue Divided by Total Personal Income per $1,000 Adjusted by Cost of Living.
- **Resource Use**: Average Salary of Instructional Staff Adjusted by Cost of Living.
- **Performance Index**: Average of NAEP Percent Proficient and Above for 4th Grade Math and Reading.

<table>
<thead>
<tr>
<th>State</th>
<th>Need Index</th>
<th>Wealth Index</th>
<th>Tax Effort Index</th>
<th>Resource Use</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relative to National Average</td>
<td>Relative to National Average</td>
<td>Adjusted by Cost of Living</td>
<td>Adjusted by Cost of Living</td>
<td>Adjusted by Cost of Living</td>
</tr>
<tr>
<td></td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Colorado</td>
<td>1.94</td>
<td>90.1%</td>
<td>138.72</td>
<td>112.1%</td>
<td>100.0%</td>
</tr>
<tr>
<td>National Average</td>
<td>1.00</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Correlations of Columns 3-14 with:
- Need
- Wealth
- Staffing
- Salary
- Spending
- Effort
- Performance

<table>
<thead>
<tr>
<th>Correlation</th>
<th>-0.71</th>
<th>0.82</th>
<th>0.42</th>
<th>0.97</th>
<th>0.55</th>
<th>-0.02</th>
<th>1.00</th>
</tr>
</thead>
</table>
States surrounding Colorado

- Kansas – Litigation
- Utah – NCEE
- New Mexico
- Nebraska
- Wyoming

Other State Examples

- Maryland
  - http://mls.state.md.us/other/education/public_school_facilities/Presentation_301402.pdf
- New Jersey
  - http://www.state.nj.us/education/ep/report_AentriesAllCommunities.pdf
- Delaware
- Pennsylvania
- Massachusetts

Questions?

- Is NAEP the right measurement?
- Are other states spending and performance relevant to Colorado? Or for a global preparedness?
Colorado Relevance?

- A window of opportunity – CAP4K
- Different implications for each district
- Making a difference for kids
- Strengthening Colorado’s economy

Making the Connection