

FAST and Smart: Strategies for Identifying Effective and Efficient Schools

A presentation to the Texas Commission on Next Generation Assessments and Accountability

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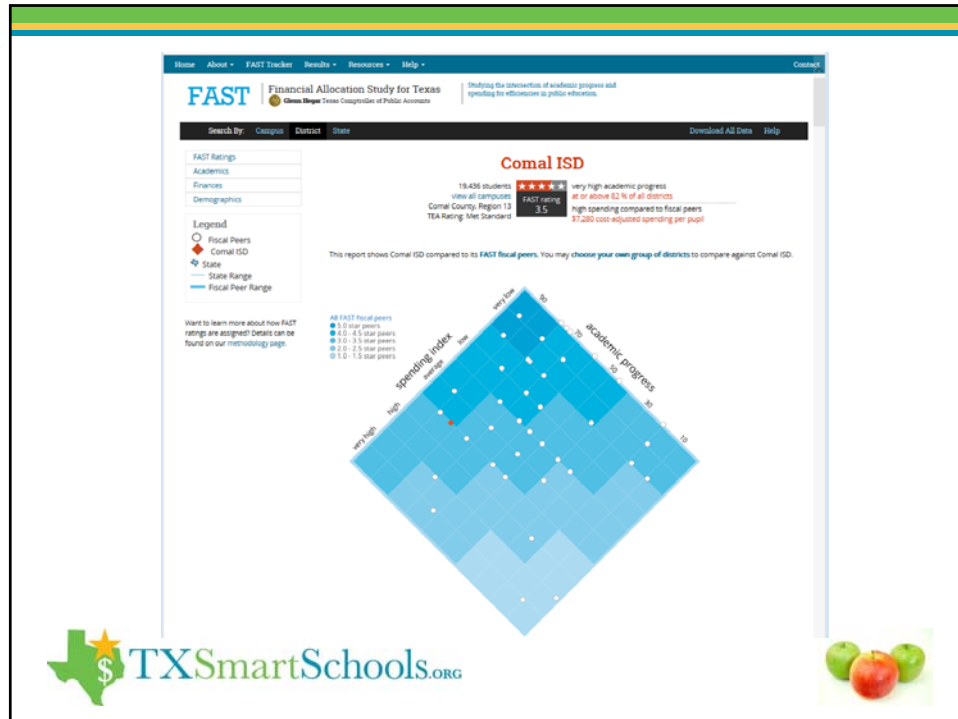
April 20, 2016



The Financial Allocation Study for Texas (FAST)

- The 81st Texas Legislature directed the Comptroller, Susan Combs, to “identify school districts and campuses that use resource allocation practices that contribute to high academic achievement and cost-effective operations”
- In response, the Comptroller’s office created FAST to examine district and campus resource allocation – and the relationship between these allocations and student achievement
- FAST looked at academic, financial and demographic data and identified school districts and campuses that produced high academic achievement while maintaining cost-effective operations





Texas Smart Schools

- TXSmartSchools.org is built on the foundational work of the FAST (better, stronger, up-to-date.....)
- This online resource—scheduled to launch early this summer—will empower school districts to benchmark themselves against their peers and enable parents (and taxpayers) to assess the quality of education their children are receiving compared to its cost
- The goal is to improve education by
 - identifying Smart Schools that are both effective and efficient then
 - highlighting their successful practices





The Core Philosophy: Apples-to-Apples Comparisons

- Raw data seldom provide sufficient insight for effective decision-making
- Differences in educational context have to be taken into consideration to transform data into information
- Two key dimensions for comparison
 - Academic progress
 - Real expenditures



Measuring Academic Progress

- Our goal: “identify school districts and campuses that ...contribute to high academic achievement”
- Our approach: Value added measure of student gains on the Texas accountability instruments
 - STAAR exams
 - End of Course (EOC) exams



Academic Progress Measures

- Level the playing field by accounting for student characteristics
- Augment current Texas measures
 - Accountability Rating
 - Campus comparable improvement
- Rely on the same underlying data used in accountability calculations



Measuring Real Expenditures

- Our goal: “identify school districts and campuses that contribute to ...cost-effective operations”
- Our approach: Use propensity score matching to identify similarly situated schools/districts and measure spending relative to those fiscal peers
 - Each school or district has a unique set of fiscal peers that are its nearest-neighbor matches on key dimensions of educational cost



The Real Spending Index

- Measures operating expenditures per pupil in core educational functions
 - Core spending excludes food and transportation
 - No construction costs
 - Adjusted for shared service expenditures
 - Payroll components of core spending adjusted for differences in labor cost
- Three-year moving average to limit the influence of one-time spending anomalies



A Deeper Focus: The Academic Progress Measures

- The model selection process
- Data and selection rules
- Distribution of annual measures by grade span
- Comparison with TEA's Index 2 (Student Progress)



Model Selection

- Considered widely used value added methods:
 - Dallas model – HLM
 - EVAAS
 - Fixed effects
- Chose the Dallas Model based on:
 - Used for many years with Texas data
 - Cost
- Combined first step (fairness adjustment regressions) into one simultaneous calculation



The Model

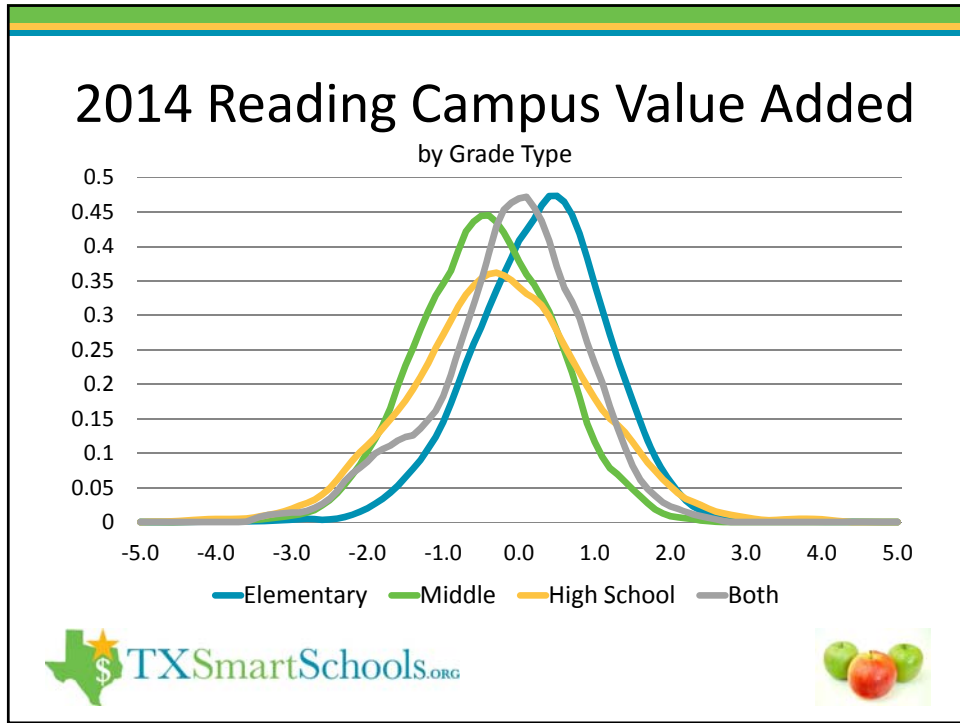
- Three level campus model, two level district model
 - Level 1 (student level) controls for prior math and reading scores (and their squares) and student characteristics (and interactions), test grade
 - Level 2 (district level)—no additional aggregate controls
 - Level 3 (campus level)—campuses nested within districts
- Reliability adjustment
- Separate models for reading and math
- Capture campus and district random effects



The Data



- Combined statewide data by year (2+ million students)
- STAAR reading and math scores for current and prior year
- EOC exams in English and Algebra, prior test in prior grade and year or 2 grades back two years ago...
 - STAAR tests are the prior tests for the first EOC in each subject
- Only includes scores used in accountability system
- Student attends same campus in fall and spring
- No missing values for test score or control variables





Comparisons with TEA's Student Progress Index

| | Index 2 Student Progress | FAST/Smart Academic Progress |
|-----------------------|---|------------------------------|
| Scores? | Scale Score | z-score |
| Demographic Controls? | Subgroup Analysis | Yes |
| Test Subjects? | All Subjects | Math and ELA/Reading |
| Time Frame? | Three-year average | Three-year average |
| Metric? | Meet/exceed | Continuous measure |
| Reporting? | Ratio of points awarded when a student met/exceeded progress, relative to total possible points | Percentile rank |

Conclusions

- Our Academic Progress Measure augments the extensive Texas accountability system with value added measures of student academic progress
- Different approach in three ways:
 - Controls for student demographic characteristics
 - Math and ELA/Reading only
 - Three year average and continuous measure
- Three year average measures are quite stable over time
- Correlated with other measures of campus/district success
 - Houston ISD EVAAS, Dallas ISD School Effectiveness Index
- Our biggest challenge: changing testing regime – particularly for high schools

