



# Identifying Most Effective Teaching Practices

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## High School Studies

### ■ COMPLETED

- Biology
- Algebra I
- U.S. History

### ■ In Progress – Analyzing Data

- English I

## PROJECT GOALS

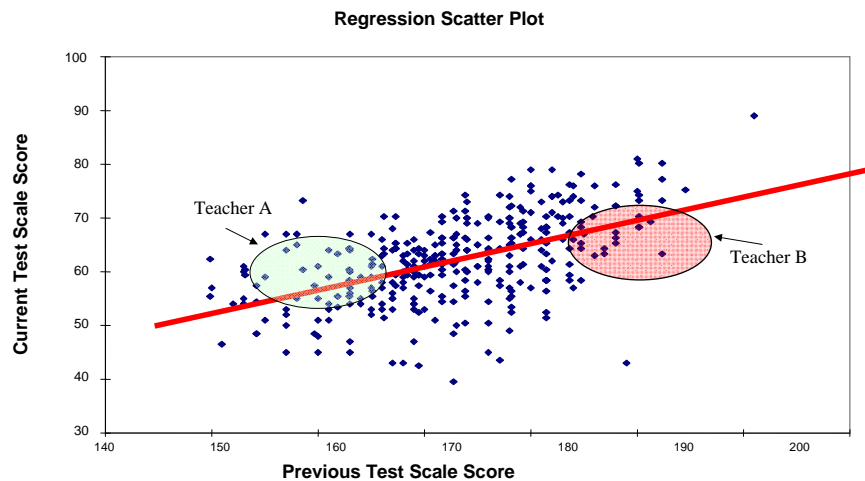
- **Study, Improve, and Implement a WCPSS Value-Added Instructional Improvement Analysis Model**
  - Collect WCPSS specific data that will help teachers, school, and district leadership understand their current practices in required courses that are state tested.
  - Identify and share best teaching practices.
  
- **Contribute to a series of studies that identify targets for overall systemic improvement**
  - Identify the role of teachers, academic departments, principals, schools, and central services' administrators in the school improvement process.
  - Identify the practices of effective improvement.

## WCPSS EFFECTIVENESS INDICES

# Student Residuals

- A student residual is the difference between a student's EOC scale score and the expected scale score of 'like' **WCPSS** students. It is a result of a regression analysis that uses previous test scores and controls for factors such as special program services, AG status, and free or reduced lunch status.
- $> + 1$  standard deviation (+5.89 in 2005-06 U. S. History) is significantly higher than other 'like' **WCPSS** students.
- $< - 1$  standard deviation (-5.89 in 2005-06 U. S. History) is significantly lower than other 'like' **WCPSS** students .
  - NOTE: Standard deviation is at bottom of student residual roster and varies by subject and year.

## RESIDUALS SHOW VALUE ADDED BY TEACHERS and SCHOOLS



## School EOC Effectiveness Indices

- A School EOC Effectiveness Index is a z-score calculated by averaging all of the student residual scores for a particular test (e.g. U.S. History EOC) at a particular school and standardizing on the z scale. It can be used to compare a school's performance with other school's in the **district**.
- $> + 1$  is significantly higher than other **WCPSS** schools
- $< - 1$  is significantly lower than other **WCPSS** schools

## Defining Teacher Effectiveness

## Subjects in Studies

- 43 teachers that taught Biology in 2001-02, 2002-03, 2003-04, and were teaching in 2004-05.
- 41 (26% of the 157 teachers of Algebra 1 in 2005-06) teachers that taught Algebra 1 in 2002-03, 2003-04, 2004-05 and were teaching in 2005-06.
- 29 2006-07 teachers of US History (32% of the 90 from 2005-06) that taught US History in 2001-02, 2002-03, 2005-06 and were teaching in 2006-07.
- 42 2007-08 teachers of English I (31% of the 134 from 2007-08) that taught English I in 2004-05, 2005-06, 2006-07 and were teaching in 2007-08. 31 teachers returned surveys and became final subjects.

- Calculated the average student residual across all years and classes for each teacher.
- Ranked teacher effectiveness from highest to lowest.
- Labeled top 7 to 10 teachers as top and bottom 7 to 10 teachers as bottom. These teachers became the focus of analysis.



## Data Collection

- Teacher Survey
- Classroom Observations
- School Focus Groups
- Teacher Focus Groups



## Main Findings

## Top teachers had high academic expectations of **all** students.

- TOP Biology teachers focused **all** student effort toward the Standard Course of Study (SCS) and resisted distractions from this effort.
- TOP Algebra teachers created a classroom culture in which **all** students were free to ask questions, contribute, or offer explanations. They emphasized problem solving over rote memorization.
- TOP U.S. History teachers expected **all** students to learn to read, take and organize notes, make connections, analyze, and respond to higher-order thinking skill questions.

**Top teachers believed that their students could succeed. The acquisition of facts happened within a sense-making context. Concepts were stressed.**

## Time Management

- Top Biology teachers focused class time in lecture and lab. While most bottom Biology teachers used little lecture and more projects and/or partner activities than top teachers.
- Top Algebra I teachers averaged much more class time on new material than did bottom teachers (68% compared to 36%). They remediated within material with a spiraled curriculum.
- Top U.S. History teachers taught bell to bell, used an invigorated delivery rate, and used an effective Lecture/Discussion method.

**Top teachers used materials and class time thoughtfully**

## Student-Centered not Self-Centered

- Top Biology teachers placed meeting with students before or after school ahead of all meetings in importance.
- In focus group interviews, top Algebra teachers responded with systemic concerns, sought to learn of others' programs, and shared their ideas for improvement. Bottom Algebra teachers responded with personal and management concerns
- Top U.S. History teachers connected the content to current events and student's lives, taught students to be historians, and built positive relationships with kids.

**Top teachers focused on student success, while bottom teachers often focused on classroom problems.**

## Planning

- Top Biology teachers studied and planned with the SCS and each other. They designed a year at a glance document and conducted frequent assessments.
- Top Algebra teachers actively participated in developing and using an instructional plan aligned to SCS, and planned with other teachers. Their number one concern during planning was pacing.
- Top U.S. History teachers developed many of their own materials rather than relying solely on publisher-supplied materials. They had efficient focused planning times with colleagues.

**Top Teachers invested a significant amount of time in planning. They made the curriculum their own.**



## TOP SCHOOL BEHAVIORS

- ❑ **Strong experienced course leader**
  
- ❑ **School-wide plan consistent across classes aligned to standard course of study**
  - ❑ Materials ready for the entire year
  - ❑ Support structures for teachers with special consideration of new teachers
  - ❑ Materials used thoughtfully
  - ❑ Assessment plan
  
- ❑ **Focus on an Attitude of Success for ALL**



## Motivating School Improvement

- Teachers and schools receive their residual averages and effectiveness indices and a guide to where they stand.
  
- Trainings and presentations use the findings and reports.
  
- School PLCs are expected to use their data.

**These data and reports are about our teachers and schools. It becomes personal.**



# References

- **Biology**

- <http://www.wcpss.net/evaluation-research/reports/2006/0528biology.pdf>
- [http://www.wcpss.net/evaluation-research/reports/2005/0511bio\\_sum\\_att.pdf](http://www.wcpss.net/evaluation-research/reports/2005/0511bio_sum_att.pdf)

- **Algebra I**

- [http://www.wcpss.net/evaluation-research/reports/2008/0610algebra\\_full\\_study.pdf](http://www.wcpss.net/evaluation-research/reports/2008/0610algebra_full_study.pdf)
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- **U.S.History**

- [http://www.wcpss.net/evaluation-research/reports/2008/0705effective\\_us\\_history.pdf](http://www.wcpss.net/evaluation-research/reports/2008/0705effective_us_history.pdf)