CONNECTICUT STATE DEPARTMENT OF EDUCATION

CSDE's Learning Agenda

Performance Matters Forum
October 2019

Agenda

- Introduction
- Highlights from the Past
- Planned Studies
- Discussion/Feedback

A Learning *Agenda*

What is it?

- A systematic and intentional prioritization of the questions that need investigation in order to support and inform the realization of an organization's mission/goals.

Why do we need it?

- To learn and improve continuously, to frame our own narrative, to mobilize resources, and to foster organizational alignment

At the Connecticut State Department of Education, students are at the core of everything we do.

OUR PROMISE TO OUR STUDENTS

- **Ensuring their non-academic needs are met so they are healthy, happy, and ready to learn.** (Mental health, nutrition, after-school programs)
- **Supporting their school and district in staying on target with learning goals.** (Education Cost Sharing - ECS, Alliance Districts, Commissioner's Network, School Choice)
- **Giving them access to great teachers and school leaders.**
- **Making sure they learn what they need to know to succeed in college, career, and life.**

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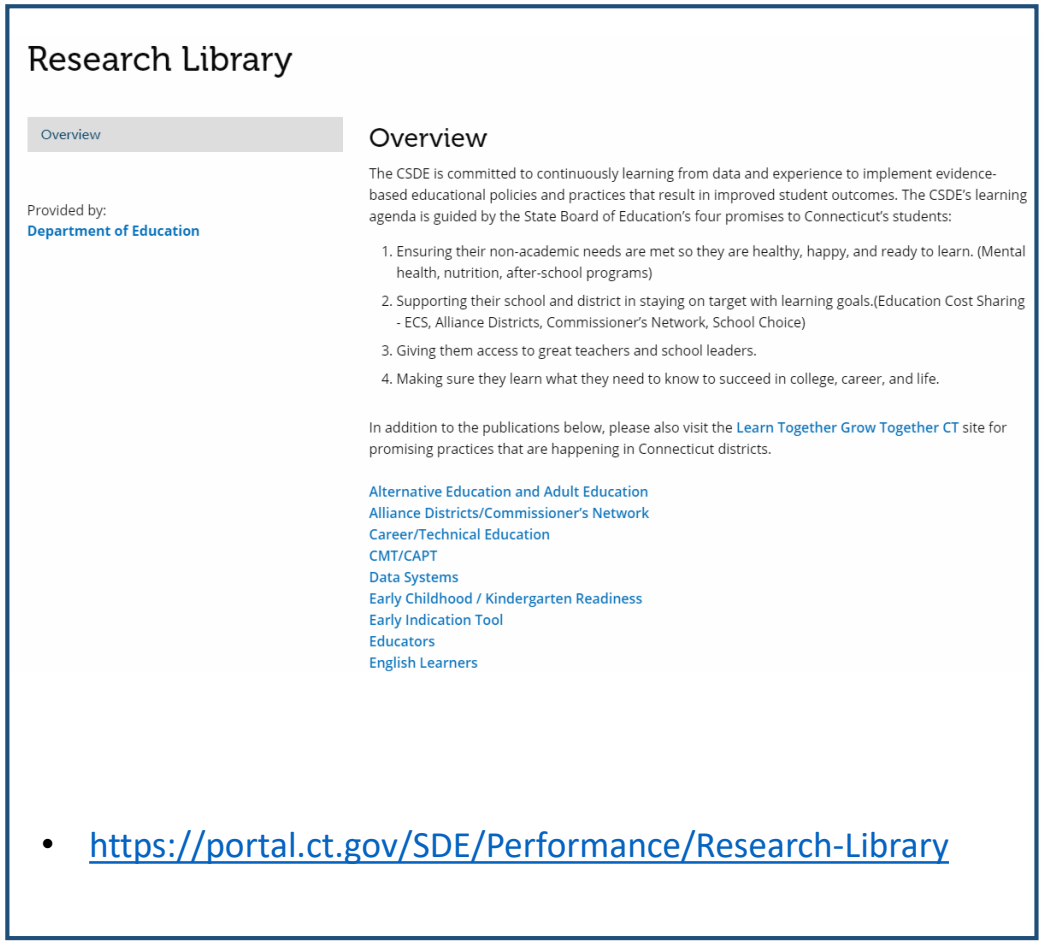
https://portal.ct.gov/-/media/SDE/Board/Five_year_Comprehensive_Plan_for_Education.pdf

New Research Library!



Research Library

Overview

Provided by:
Department of Education

Overview

The CSDE is committed to continuously learning from data and experience to implement evidence-based educational policies and practices that result in improved student outcomes. The CSDE's learning agenda is guided by the State Board of Education's four promises to Connecticut's students:

1. Ensuring their non-academic needs are met so they are healthy, happy, and ready to learn. (Mental health, nutrition, after-school programs)
2. Supporting their school and district in staying on target with learning goals.(Education Cost Sharing - ECS, Alliance Districts, Commissioner's Network, School Choice)
3. Giving them access to great teachers and school leaders.
4. Making sure they learn what they need to know to succeed in college, career, and life.

In addition to the publications below, please also visit the Learn Together Grow Together CT site for promising practices that are happening in Connecticut districts.

Alternative Education and Adult Education
Alliance Districts/Commissioner's Network
Career/Technical Education
CMT/CAPT
Data Systems
Early Childhood / Kindergarten Readiness
Early Indication Tool
Educators
English Learners

- https://portal.ct.gov/SDE/Performance/Research-Library


Learn Together,
Grow Together CT
Innovative Promising Practices
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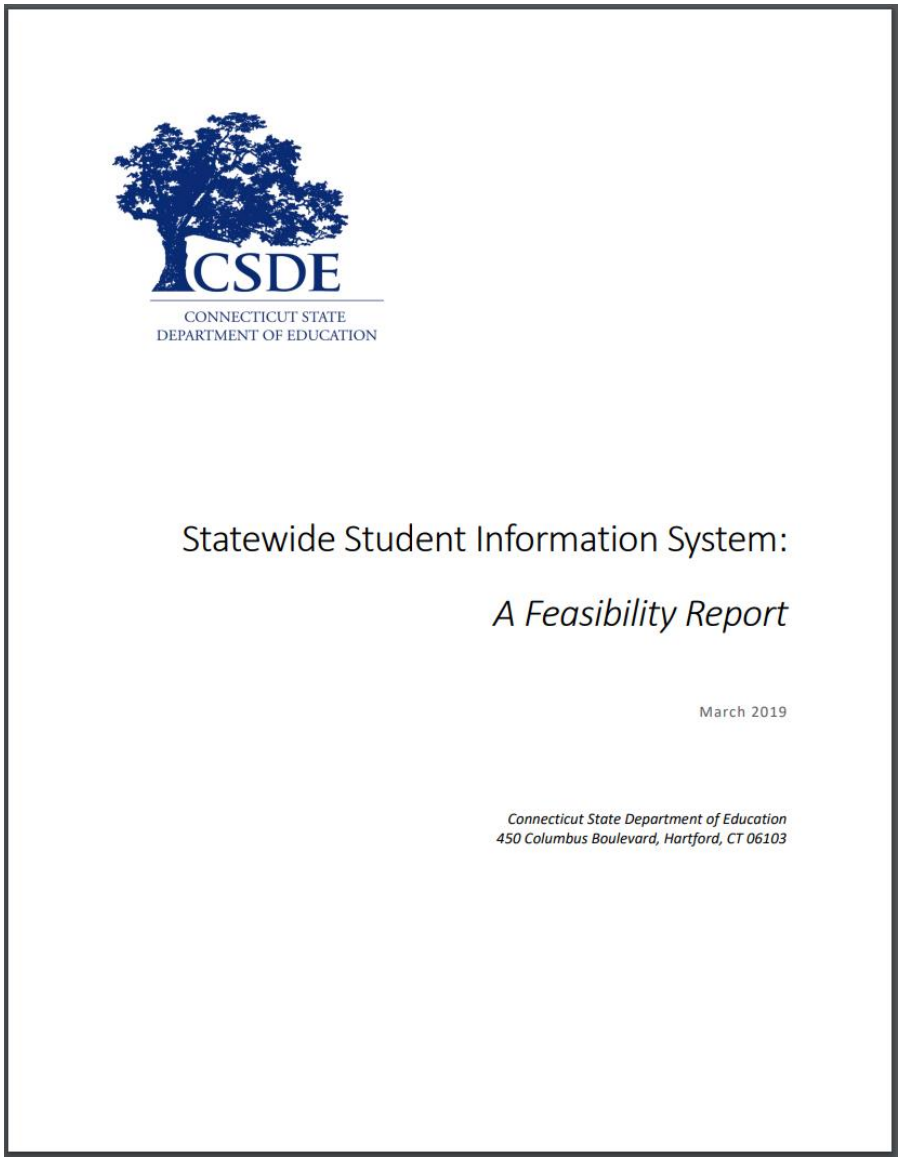
Highlights from Past Studies

- Data Sources: SIS workgroup; district survey; superintendent discussion; North Carolina perspective
- There are advantages and disadvantages to a statewide SIS
- Snapshot data still required for reporting
- Needs dedicated annual appropriation ($ million)
- EdSight Secure allows for data sharing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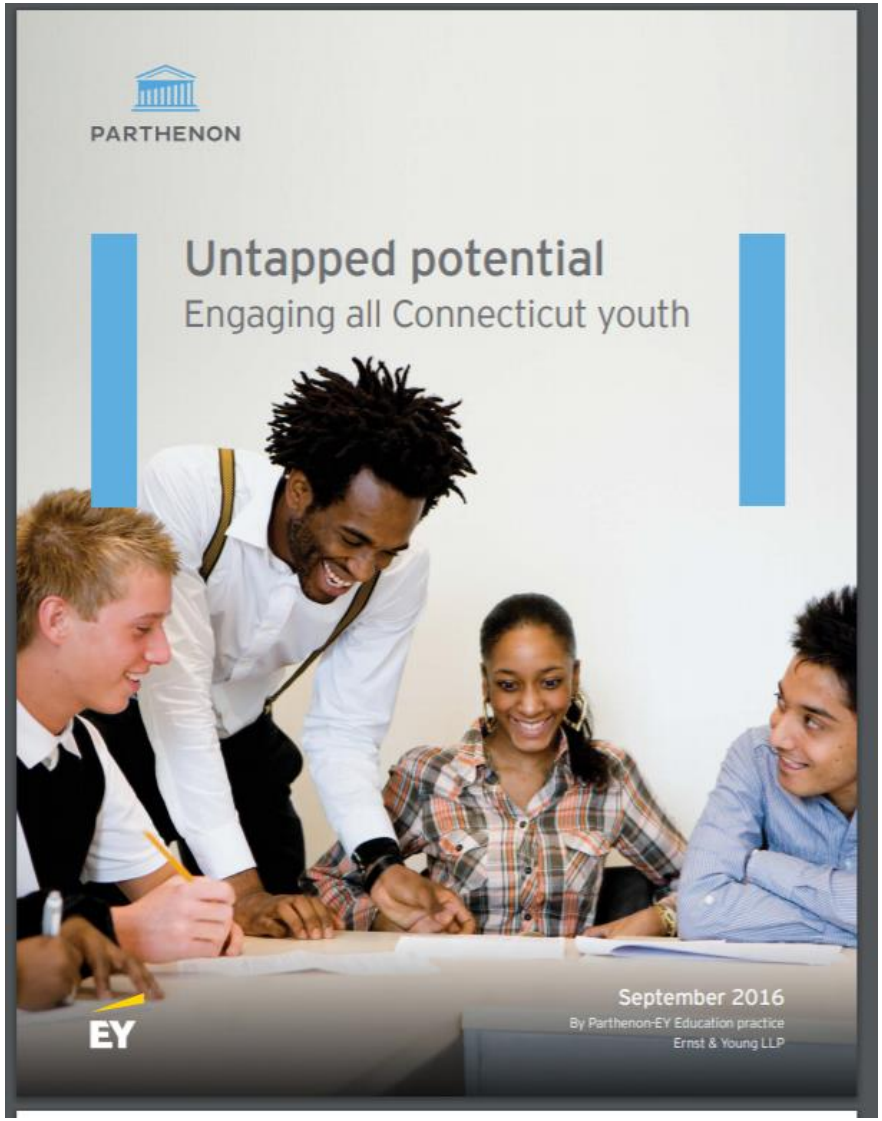
Statewide Student Information System:

A Feasibility Report

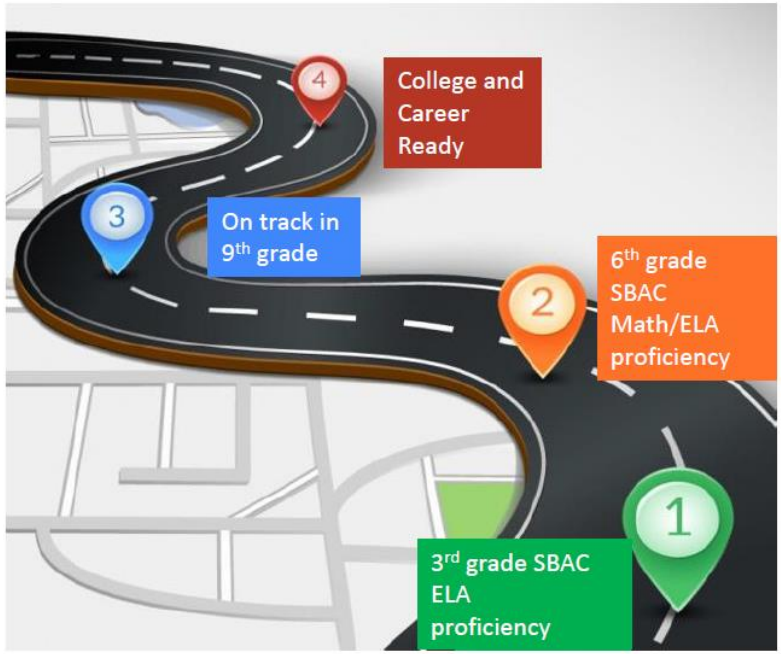
March 2019

Connecticut State Department of Education
450 Columbus Boulevard, Hartford, CT 06103

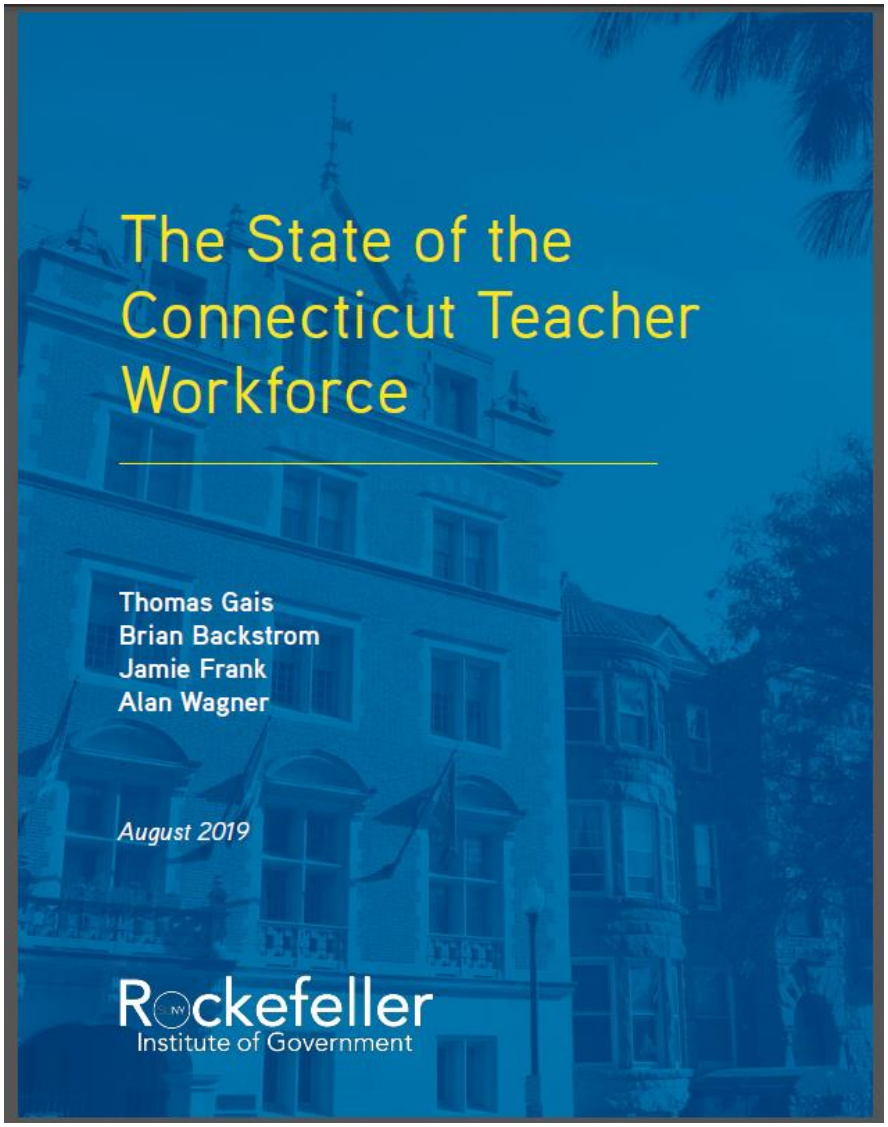


- Used Attendance, Behavior, and Course performance (ABCs) and mobility to identify students who were *disengaged* and then subsequently *disconnected*
- Promising point of intervention is 9th grade (and 2nd year in HS)

Mile Marker Approach

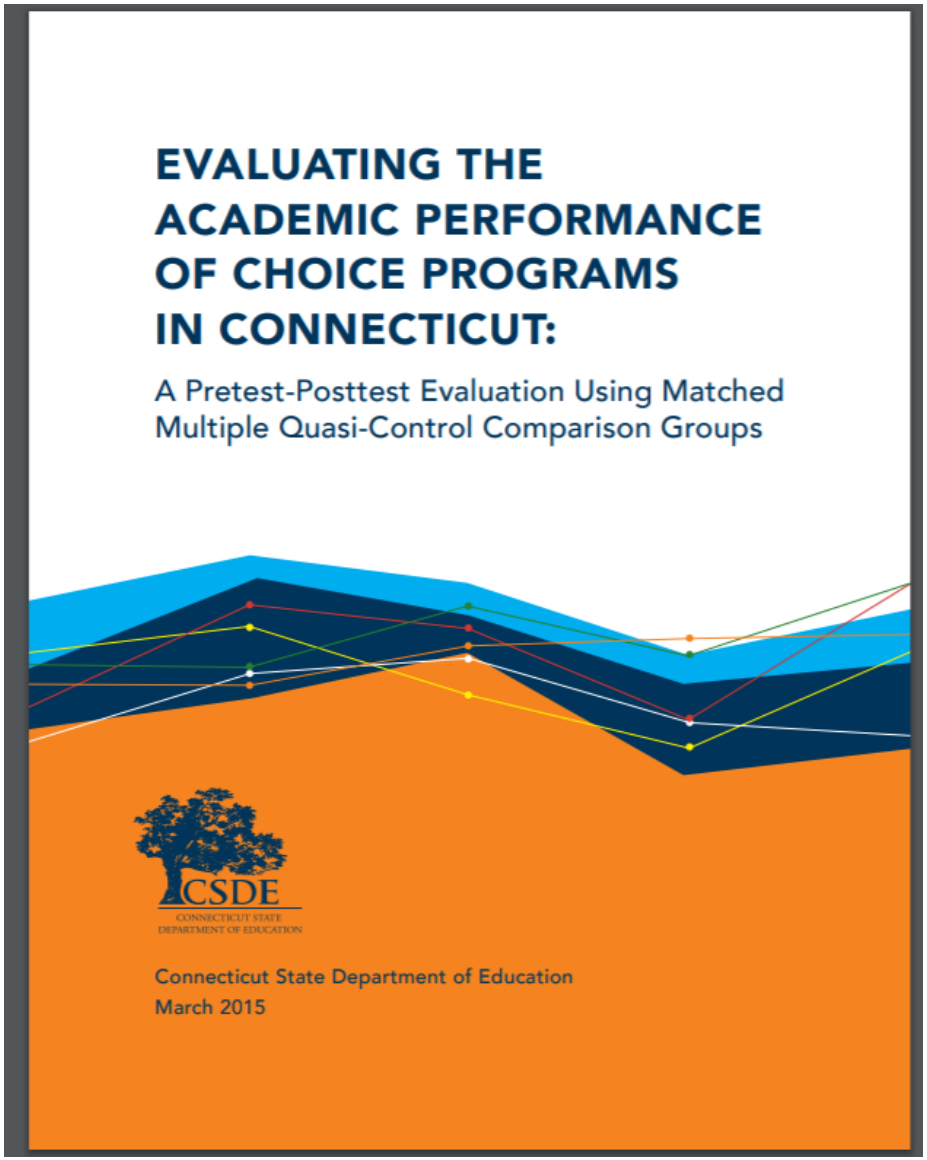


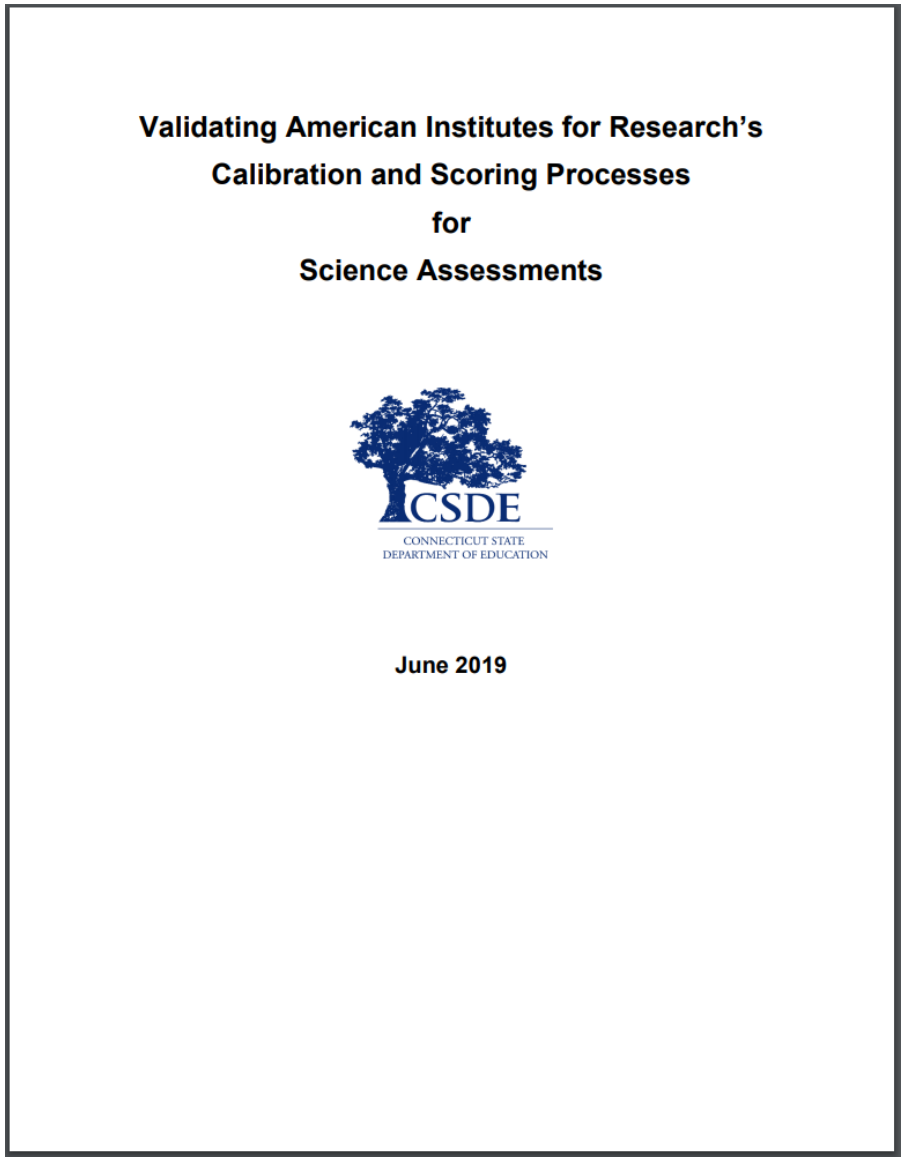
- Beyond regression and binary flag predictors to apply clustering and machine learning methods
- Variables used go beyond ABCs to include mobility, special education, grade repeating, assessment, demographics, and district/school variables



- Overall student-teacher ratios are not much higher in high-poverty districts
- However, the ratios in subject and service areas where statewide shortages exist are much greater, typically by a two-to-one ratio.

- Four “treatments”
  - IMS – RESC; IMS – Host; Open Choice; and Charter
- Control
  - 30 stratified random samples of quasi-controls from co-present population of CMT test-takers who were matched with their respective Choice program “treatment group” on baseline test performance as well as on student background characteristics
- Outcome Measure
  - Growth on CMT achievement for two cohorts
  - Grade 3 in 2010 to Grade 5 in 2012 2. Grade 6 in 2010 to Grade 8 in 2012
- Results
  - 3 to 5 – Improvement among IMS – RESC
  - 6 to 8 – Improvement among Charters





Validating American Institutes for Research's
Calibration and Scoring Processes
for
Science Assessments

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June 2019

- **Item Calibration**: Item parameters estimated by AIR using custom procedures (written in MATLAB) are comparable to those generated by CSDE using commercially available IRT software (FlexMIRT).
- **Scoring**:
  Simulation studies affirmed that AIR's marginal maximum likelihood estimator is optimal for minimizing bias in proficiency estimates.

- Reanalyzed Smarter Balanced Math Claim 1 Target Score and expressed as an effect size *(to get more nuanced information from summative test)*
- Allowed for identification of statewide strengths and challenges that can drive professional learning
- Potential for replication in ELA

DRAFT

Re-Analyzing Smarter Balanced Target Results to Inform Instructional Improvement

Connecticut State Department of Education

August 12, 2019

Purpose

The Connecticut Board of Education adopted the Connecticut Core Standards in 2010. In the 2018-2019 school year, Connecticut completed its fifth yearly administration of the Smarter Balanced Assessments. These summative assessments are built from assessment targets that tap specific learning objectives – for example; third graders should "multiply and divide within 100", and 6th graders should "reason about and solve one-variable equations and inequalities" (Smarter Balanced Assessment Consortium (SBAC), 2017). Though the students receive only an overall score, the response data include information at the assessment target level for individual students, and allow us to connect performance for students or districts over time on the target level. How is the state of Connecticut doing on the assessment targets? We analyzed this target level data to describe state and district performance over the past four years.

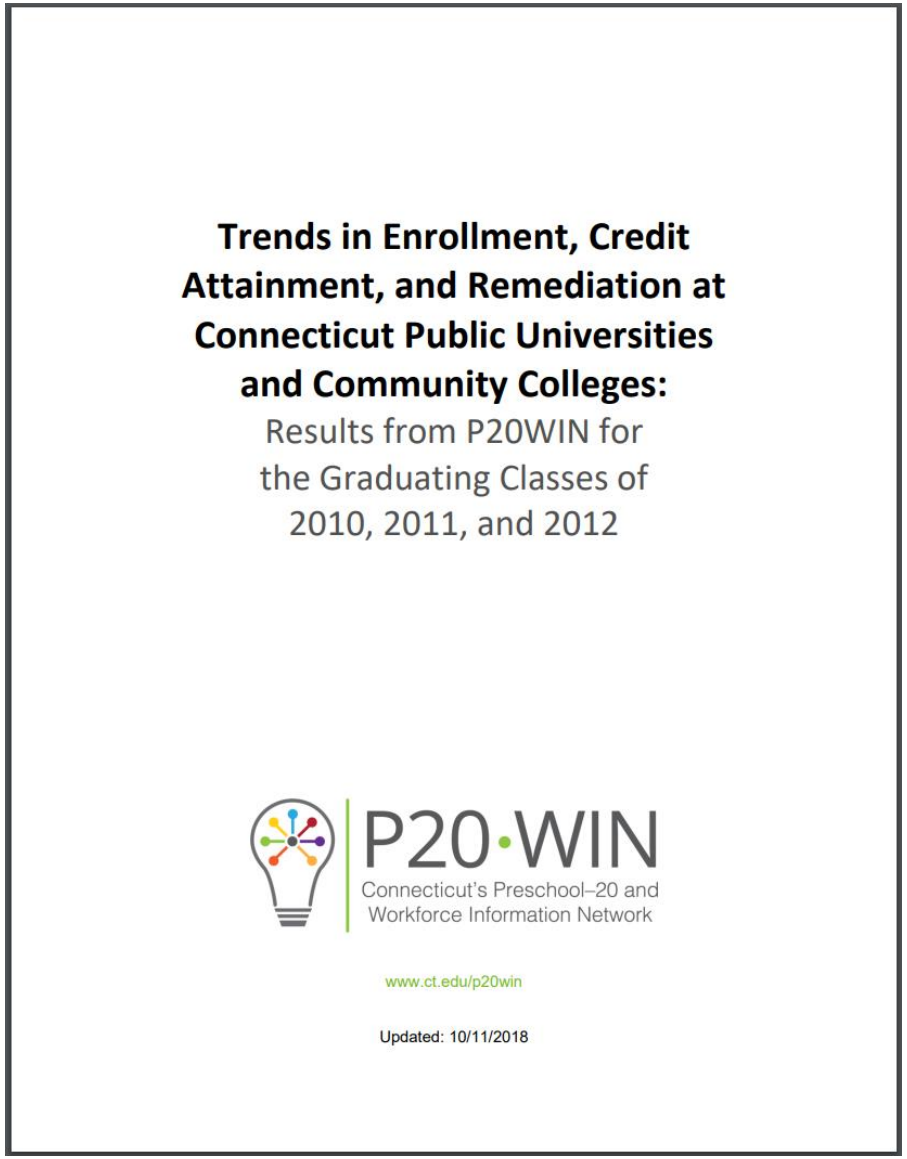
The primary purpose of yearly summative testing is to determine each students' academic performance (Connecticut State Department of Education, 2016). This testing has the potential to be used for "continuous school improvement" and long term sustainable change that improves student achievement (Sparks, 2018). The Smarter Balanced summative assessments provide one reliable estimate of each student's overall performance, however the scores based on subsets of items (targets) are not reliably estimated at the individual level (Smarter Balanced Assessment Consortium, 2017). At the aggregate (district or state) level however, the state assessment has the potential to provide greater insights into the subdomains and thus prove useful for program and curriculum evaluation and professional learning (Connecticut State Department of Education, 2016). The more fine-grained analysis at the district level will enable districts to engage in design-based implementation research which allows for consideration of the context while reflecting on student performance results (Sparks, 2018). We demonstrate one method of data analysis, visualization and communication that could be used to help local education agencies and district leaders reflect on student performance.

Methods

We analyzed anonymized item level data from four years (2016-2019) of Smarter Balanced testing data from Connecticut. Students in 3rd through 8th grade took the computer adaptive test in each spring of each school year. This analysis focused on "Claim 1" (Concepts and Procedures) portion of the Mathematics assessment, though additional analysis was also done on claims 2, 3 and 4. The Item Response Theory (IRT) item parameters were provided by the SBAC on the 2 parameter logistic (2PL) model for dichotomous items and the generalized partial credit model (GPCM) for polytomous items. The SBAC technical report also provided the cut off scores for performance levels (SBAC, 2017). We used the Tidyverse packages (Version 1.2.1; Wickham, 2017) in R for data analysis and graphical displays.

Student Inclusion

All students who had a scaled score were included in analysis. Some analysis were broken down by race/ethnicity, English Proficiency status, gender and economic disadvantage



- 40 percent enrolled in a CT public university or community college; two-thirds of those earned 24 credits in two years
- Greater percentage of students from low-income families enrolled but fewer earned 24 credits and more of them needed remediation
- Includes data for each district and school

Planned Studies

- How do social emotional learning data gathered from student surveys as well as early reading assessments administered in Grades K through 2, improve the prediction of student proficiency on the Smarter Balanced ELA assessment in Grade 3? Partner: Meriden Public Schools
- What is the relationship between student participation in the Smarter Balanced interim assessment blocks and their performance on the corresponding assessment target on the summative assessment?
- How effective are evidence-based text messaging campaigns in reducing "summer melt" and improving enrollment persistence in Connecticut so that students are more successful in completing their postsecondary education? Partners: American Institutes for Research, Connecticut State Colleges and Universities
- What is the relationship between the number of years a student attends a particular school and the amount of growth that is achieved on Connecticut's Smarter Balanced growth model in Grades 4 through 8?
- What are the long-term educational outcomes of children with and at-risk for developing reading and writing difficulties? What are the antecedents in the schooling process of children who later develop reading and/or writing disabilities? Partner: University of Houston

Planned Studies

- What should be Connecticut's operational definition of college and career readiness (e.g., first year college GPA, # of credits earned in first two years, self-sufficiency wage)? What factors in high school (e.g., high school course work, test scores, attendance, mobility, discipline, grade repetition) best predict college and career readiness? Partners: P20WIN members including CSCU, UCONN, CT Conference of Independent Colleges, DOL (see P20WIN data request)
- How can student performance and persistence in middle school serve to predict potential for participating in rigorous coursework (e.g., advanced placement, international baccalaureate, dual enrollment) during high school?
- How does the long-term academic achievement of former English learners who participated in bilingual education programs (transitional and/or dual language programs) compare to that of other former ELs who received ESL instruction?
- What is the relationship between a parent's participation in adult education programming and their child's outcome in school?

What else should CSDE study?

- What are you wondering about with respect to teaching, learning, growth, engagement, college/career readiness, etc. that state data could shed some light on?
- What is an issue or challenge that recurs every year, in spite of your varied and repeated attempts to address it?
- Is there a technique/strategy/approach that works for you, that could be tested more broadly using state data?