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C-SAIL Year 2 Convening: Longitudinal Outcomes Study Presentation

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The Center on Standards, Alignment, Instruction, and Learning (C-SAIL), funded from July 2015 through 2020 by the Institute of Education Sciences, examined how college- and career-readiness (CCR) standards were implemented, if they improved student learning, and what instructional tools measured and supported their implementation.

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C-SAIL Year 2 Convening: Longitudinal Outcomes Study Presentation

Abstract

Mengli Song presents Year 1 findings from the Longitudinal Outcomes Study at C-SAIL's first annual "A Conversation on College- and Career-Readiness Standards" in Washington, D.C. on November 18, 2016. This PowerPoint presentation corresponds to a presentation video available at c-sail.org/videos.

Keywords

college and career-ready standards, implementation, curriculum, professional development, assessment, students with disabilities, english learners

Disciplines

Education | Educational Assessment, Evaluation, and Research

Comments

The Center on Standards, Alignment, Instruction, and Learning (C-SAIL), funded from July 2015 through 2020 by the Institute of Education Sciences, examined how college- and career-readiness (CCR) standards were implemented, if they improved student learning, and what instructional tools measured and supported their implementation.

Longitudinal Outcomes Study

Mengli Song

C-SAIL Co-Principal Investigator
American Institutes for Research

Context

- All 50 states and DC adopted college and career-ready (CCR) standards in math and ELA/literacy between 2007 and 2015.
- The Longitudinal Outcomes Study is intended to assess the effects of states' adoption of CCR standards and aligned assessments on key student outcomes, both for all students and for important student subgroups such as ELLs and SWDs.

Questions Driving This Study

- Does the adoption of CCR standards and aligned assessment result in increases in students' college and career readiness?
- How does the effect of adopting CCR standards and aligned assessments vary by student subgroup (including ELLs and SWDs), subject, and grade?
- Is the effect of adopting CCR standards and aligned assessments on student learning moderated by the specificity, consistency, authority, power, and stability of state implementation?

Data & Measures

- State-Level student outcome data from NCES
 - State-level NAEP scores in math and reading for grades 4 and 8

Measures of math achievement	Measures of reading achievement
Math composite score	Reading composite score
<i>Subscale 1: algebra</i>	<i>Subscale 1: gaining information</i>
<i>Subscale 2: data analysis</i>	<i>Subscale 2: literary experience</i>
<i>Subscale 3: geometry</i>	
<i>Subscale 4: measurement</i>	
<i>Subscale 5: number properties</i>	

» 9 ~ 11 waves

- High school graduation
- College enrollment

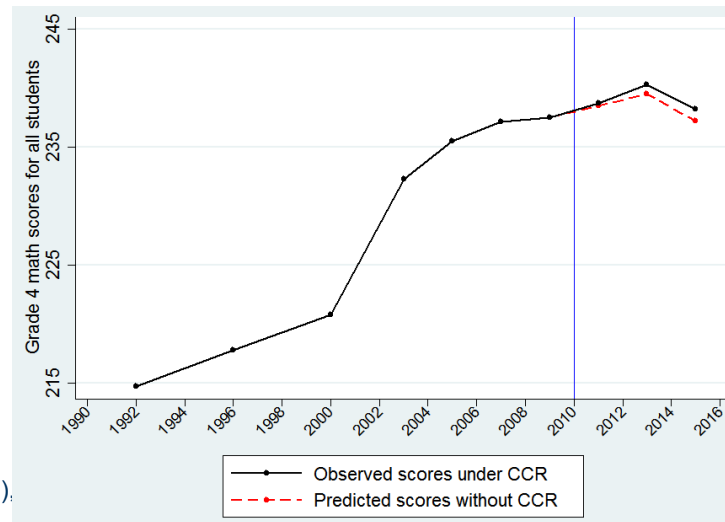
Comparative Interrupted Time Series

(CITS) Analyses

- **Approach:** Effects of the adoption of CCR standards were assessed by comparing the change in the student outcome trend from before to after CCR adoption between “treatment” states and “comparison” states
 - Treatment states: states with lower prior proficiency standards
 - Comparison states: states with higher prior proficiency standards
 - Rigor/stringency of different states’ prior proficiency standards was measured on a common metric -- the NAEP scale equivalent score.
- **Assumption:** the new CCR standards represent a stronger form of “treatment” for states with lower prior proficiency standards in place than for states with higher standards prior to CCR
- **Statistical model:** state-year-level regression controlling for state and year fixed effects and time-varying covariates

Effects on Achievement in Grade 4 Math

Figure 1. Observed NAEP grade 4 math scores of all students for states with lower prior proficiency standards and their predicted scores in the absence of CCR standards

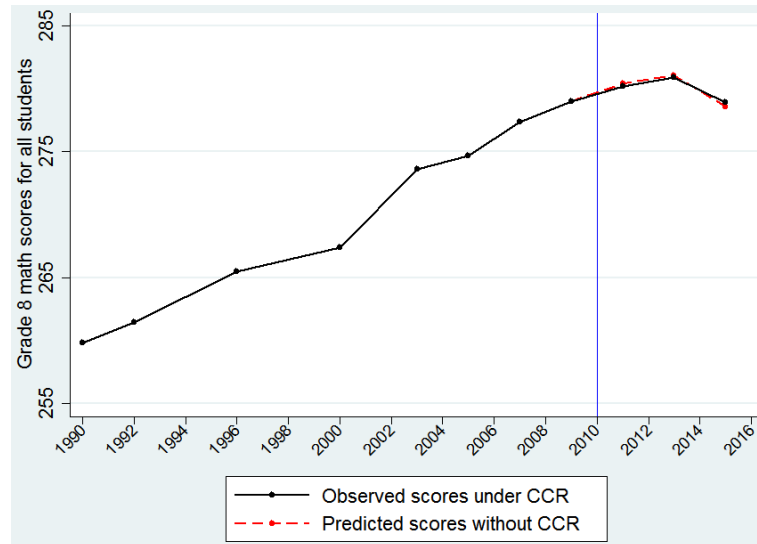


1-year effect = 0.22 points (0.01 SD),

5-year effect = 1.01 points (0.03 SD), $p = 0.494$

Effects on Achievement in Grade 8 Math

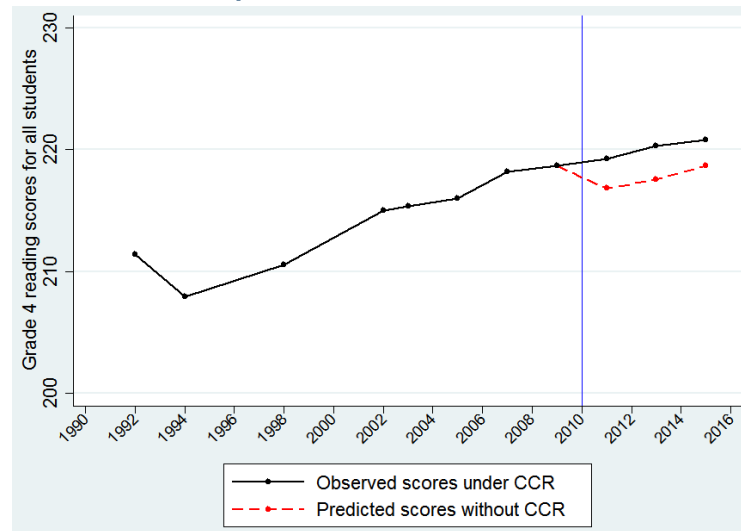
Figure 2. Observed NAEP grade 8 math scores of all students for states with lower prior proficiency standards and their predicted scores in the absence of CCR standards



1-year effect = -0.23 points (-0.01 SD), $p = 0.850$; 3-year effect = -0.14 points (-0.004 SD), $p = 0.929$;
5-year effect = 0.31 points (0.01 SD), $p = 0.840$

Effects on Achievement in Grade 4 Reading

Figure 3. Observed NAEP grade 4 reading scores of all students for states with lower prior proficiency standards and their predicted scores in the absence of CCR standards

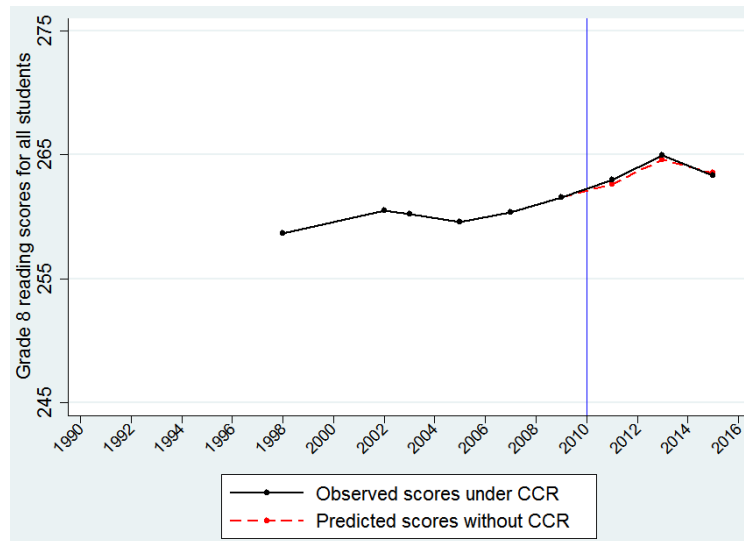


1-year effect = 2.42 points (0.07 SD), $p = 0.011^*$; 3-year effect = 2.76 points (0.07 SD), $p = 0.011^*$;

5-year effect = 2.12 points (0.06 SD), $p = 0.136$

Effects on Achievement in Grade 8 Reading

Figure 4. Observed NAEP grade 8 reading scores of all students for states with lower prior proficiency standards and their predicted scores in the absence of CCR standards



1-year effect = 0.33 points (0.01 SD), $p = 0.644$; 3-year effect = 0.36 points (0.01 SD), $p = 0.675$;
5-year effect = -0.18 points (-0.005 SD), $p = 0.830$

Potential Reasons for Limited Evidence for

Significant Effects

- CCR standards may be no more effective at improving student achievement than prior standards.
- CCR standards may not have been well implemented.
 - Challenges in implementing CCR standards
 - Extended timeline of implementation
- Study limitations may have led to conservative estimates of the effects of CCR standards.
 - Lack of a true “no-treatment” comparison group given the timing of CCR adoption across states
 - Definition of treatment and comparison states based on the rigor of states’ prior proficiency standards as a proxy for the rigor of their prior content standards
 - Less-than-perfect alignment between NAEP and CCR standards