

Projects Using Longitudinal Data

Tim Sass

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School Choice

- *Charter Schools and Student Achievement in Florida*
 - Impact of charter school attendance on achievement
 - Effects of charter schools on achievement in nearby traditional public schools
- *The Effects of Charter High Schools on Educational Attainment*
 - Impact of charter high school attendance on high school graduation and college attendance

School Choice

- *Charter High Schools' Effects on Long-Term Attainment and Earnings*
 - Impact of charter high school attendance on persistence in college and earnings at age 25

Teacher Training

- *Teacher Training, Teacher Quality and Student Achievement*
 - The effects of graduate degrees and in-service professional development on teacher value-added
 - The relationship between teacher pre-service characteristics and teacher value-added
- *What Makes Special-Education Teachers Special? Teacher Training and Achievement of Students with Disabilities*
 - The effects of teacher pre-service training and in-service professional development on the achievement of students with disabilities

Teacher Training

- *Where You Come From or Where You Go? Distinguishing Between School Quality and the Effectiveness of Teacher Preparation Program Graduates*
 - When evaluating the performance of preparation program graduates, is it important to account for the school in which they are placed
 - Is it feasible to distinguish the effects of teacher preparation programs from the effects of the schools in which graduates are placed and what are the potential problems in doing so?

Teacher Training

- *Licensure and Worker Quality: A Comparison of Alternate Routes to Teaching*
 - Are alternatively certified teachers as effective at promoting student achievement as traditionally prepared teachers?
 - Do different types of alternative certification programs produce teachers of varying effectiveness?

Measuring Teacher Performance

- *Value-Added Models and the Measurement of Teacher Productivity*
 - Do commonly estimated value-added models satisfy the assumptions used to derive them from theoretical models of student learning?
 - Do different value-added specification produce different teacher rankings and if so, how much do they differ?

Measuring Teacher Performance

- *The Inter-temporal Variability of Teacher Effect Estimates*
 - How much do value-added measures of a teacher's effectiveness vary over time?
 - Do value-added estimates based on multiple years of data provide more precise estimates of teacher effectiveness?

Measuring Teacher Performance

- *Skills, Productivity and the Evaluation of Teacher Performance*
 - Can principals distinguish between high and low-performing teachers?
 - What is the correlation between observational and value-added scores?
 - Do value-added and observational scores capture the same teacher traits?
 - Do principal observations help predict future value-added of teachers?

Measuring Teacher Performance

- *The Effects of NBPTS-Certified Teachers on Student Achievement*
 - Effectiveness of NBPTS certified teachers vs. non-NBPTS certified teachers

Teacher Mobility

- *Teacher Quality and Teacher Mobility*
 - How does teacher mobility vary across the distribution of teacher value-added?
 - How do the characteristics of colleagues effect the likelihood a teacher will change schools or leave the profession?
- *School Accountability and Teacher Mobility*
 - How do changes in accountability pressure effect the likelihood a teacher changes schools or leaves the profession?
 - Are more effective teachers more likely to leave when a school faces increased accountability pressure?

Distribution of Teacher Quality

- *Comparison of the Value Added of Teachers in High-Poverty Schools and Teachers in Lower Poverty Schools*
 - What is the distribution of teacher quality across schools and what factors affect the distribution?

Peer Effects

- *Classroom Peer Effects and Student Achievement*
 - The effects of classroom peers of varying abilities on student achievement

K-12 Education and College Major Choice

- *Understanding the STEM Pipeline*
 - To what extent do differences in math achievement across race and gender in elementary school predict the likelihood of taking STEM courses in college and obtaining a degree in a STEM major?
 - Do racial or gender matching of teachers and students impact the likelihood of STEM course taking and major choice in college?
 - To what extent does the educational background of high school math and science teachers affect the likelihood that their students take STEM courses in college and major in a STEM field?

GA Education Data Symposium

Daniel Kreisman
Assistant Professor of Economics
AYSPS

December 9, 2014

Interests:

- [Workforce preparation](#) → CTE and community college.
- [School finance](#) → K-12 funding systems and student loans.

Background:

- Former NOPS high school teacher (English).
- Degree is in Public Policy.
- Goal is to help policymakers make good choices by providing them with [actionable information from empirical research](#).

K-12 research in Michigan

Began with a meeting between UM researchers and the MI Dept. of Education.

- Question: What research questions are of [interest to you](#)?
- Answer: What are the effects of switching to The Michigan Merit Curriculum?

Joint IES proposal, “The Impact of the Michigan Merit Curriculum on Student Outcomes.”

- IES grant #R305E1000008 awarded [\\$6,000,000](#) over 5 years.
- [Hire post-docs](#), build a database, conduct evaluations, build toward future research.

October 2012



A PARTNERSHIP FOR EDUCATION RESEARCH AMONG THE STATE OF MICHIGAN, UNIVERSITY OF MICHIGAN, AND MICHIGAN STATE UNIVERSITY

Impacts of the Michigan Merit Curriculum on Student Outcomes: Preliminary Findings from the First Cohort

AUTHORS:

Susan M. Dynarski
University of Michigan

Kenneth Frank
Michigan State University

Brian A. Jacob
University of Michigan

Barbara Schneider
Michigan State University

www.michiganconsortium.org

Community colleges in Michigan

Community colleges in MI

Building on this success, we approached community college leaders in MI to ask [what questions they had?](#)

- Grant: “Educational Pathways and Employment Outcomes of Community College Students.”
- Partnership between [UM](#), [community colleges](#) and [MI-DOL](#).

Research questions of [interest to all parties](#) -

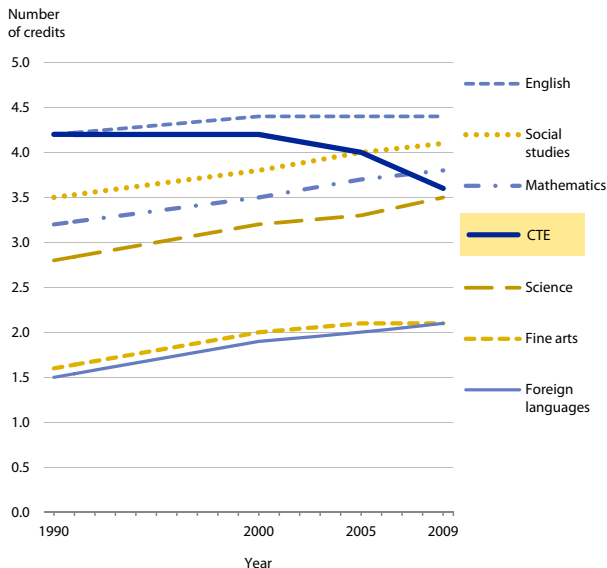
- State: Do students go into high-need occupations?
- Us: Do online students have similar outcomes as face-to-face students?
- Colleges: Do graduates earn more than dropouts? In any particular fields?

Ongoing and future research:

- When schools (K-12 or CC) roll out programs, we ask to **set up an evaluation**.
- E.g. Providing **information** on college costs and returns (K-12).
- E.g. Introducing an **online advising app** (CC).

Career and Tech Education

Another interest: CTE programs



Building partnerships to evaluate CTE

Nationally representative data suggests positive earnings gains for CTE students -

- About 1% per year of CTE for non-college graduates.

We've now partnered with the [Office of Career and Tech Ed.](#) in the MDE to evaluate the success of CTE programs in:

- Preparing students for the [college and the workforce.](#)
- What makes effective CTE instructors.
- Which programs are most successful?

Combining data:

OCTE + K-12 + CC + UI = [Lots of answers...](#)

Conclusion: Black boxes aren't good for policy

Student-level longitudinal data allows us to peer into black-boxes to see **how** things work, **why** they work, and **whom** they work for.



School finance

Does money matter? Evidence from Texas.

Texas has a really large *sparsity adjustment* in its funding formula.

- Districts larger than 300 sq. mi. get about 10% more money per-pupil!
- This artifact allows me to compare similar districts who receive vastly different funding levels.

Two questions:

- How well do districts spend additional discretionary funds?
- Does increasing funding improve student achievement?

Here's what I find...

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Does money matter? Evidence from Texas

Finding 1: Districts don't target money.

- An 10% increase in per-pupil funding leads to roughly an 10% in all major funding areas (Admin, Extra curr. Teaching, Plant, etc...)

Finding 2: Test score gains are modest at best (zero at worst).

- Only about .05 of a standard deviation.

Conclusion:

- Districts don't have good information on how to effectively spend money, or they might not have as much discretion as we think.
- Similar ongoing research in Pennsylvania.

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David L. Sjoquist
Professor of Economics
Sweat Chair of Educational & Community Policy

Andrew Young School of Policy Studies
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Data:

Student level data from the University System of Georgia

Projects:

- **Does HOPE affect the probability of remaining in Georgia after completing schooling?**
- **Does HOPE affect college attainment?**
- **Does HOPE affect the choice of college major?**
- **Does HOPE affect the probability of going to an elite school out-of-state?**

Longitudinal Data



C. Kevin Fortner
December 9, 2014



Categories

- Programs
- Teachers
- Kindergarten



Programs

- North Carolina's Disadvantaged Student Supplemental Fund (DSSF)
 - Determine the impact on student achievement of a state funded program to provide additional funding to schools in North Carolina's most disadvantaged districts



Programs

- Urban Debate League
 - Used data from Atlanta, Boston, and Milwaukee to determine the relationship between program participation and a variety of student academic outcomes



Teachers

- Teacher Preparation 'Portals'
 - Examine the relationship between the characteristics of teachers when they first entered the classroom and student test score outcomes



Teachers

- Teacher Preparation Programs
 - North Carolina administrative data and data from the UNC-GA (Board of Regents)
 - Estimate the relationship between teacher preparation programs (by institution) and student test score outcomes - across various subjects and grades



Teachers

- Teacher Effectiveness Growth
 - How does teacher effectiveness change over time for new teachers and does it differ for those who will stay in teaching versus those who leave teaching?
 - Does teacher effectiveness change over time in different high school subjects?



Teachers

- Teacher Attrition
 - How does teacher attrition vary across different types of teacher preparation?



Kindergarten

- Redshirting - Voluntary Delayed Kindergarten Entry
 - What factors predict redshirting in a statewide data sample?
 - Do student outcomes differ for redshirting vs. normal entry students - test scores, program identification?



Kindergarten

- Enrollment Date Cutoff Change
 - How did an enrollment into kindergarten age cutoff change impact student achievement and outcomes for 3rd grade students?



Examples of Using Administrative Data to Analyze Public Education in Georgia

Ben Scafidi

Kennesaw State University

CPI Files from the GaDOE

- **Race, Poverty and Teacher Mobility (with D. Sjoquist and T. Stinebrickner)**
 - New teachers move from schools that are more African-American, poorer, and lower test scores to schools that are less African-American, richer, and higher test scores
 - Race seems to be the strongest correlate of teacher mobility between schools
 - Similar results from NY, CA, NC, and TX
 - Subsequent research by others analyzed the effectiveness of teachers who moved
- **Accurate and Complete Picture of Teacher Attrition (for GOSA)**
 - 50% of teachers do not leave teaching in the first 5-6 years
 - Some teachers leave and quickly come back, and other teachers move into other jobs within public education

CPI Files from the GaDOE – Part II

- **Do Teachers Really Leave for Higher Paying Jobs in Alternative Occupations? (with D. Sjoquist and T. Stinebrickner)**
 - **Not many**
 - **Merged CPI data with Georgia Department of Labor ES 202 data – shows value of merging state databases**

Student Achievement in High School Economics

- **Do Georgia Council of Economic Education training courses for teachers improve student performance on the Economics EOCT?**
 - **Small positive benefits at a very low cost**
- **Prior achievement in math is a strong predictor of success in economics**
- **Peer effects in high school economics are rather large**
- **AP Economics seems to lead to higher student achievement, all else equal**
- **Access to AP Economics seems to be a bit higher for minority students and students eligible for FRL**

Differential Grading

- **Chris Clark at Georgia College in a study for GOSA showed there were enormous differences in the relationship between course grades and EOCT scores across Georgia high schools**
- **In a follow-up study for GOSA we found that students with higher high school course grades relative to corresponding EOCT scores had less success in their first year of college**

School Funding Lawsuit

- **Produced about 200 charts showing resource levels in Consortium districts relative to the rest of the state.**
 - **Many results were surprising to some**
 - **The lawsuit was withdrawn before it had a full trial hearing**

Empirical studies in the economics of education

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David B. Mustard
Department of Economics
University of Georgia



Georgia Education Data Symposium
9 December 2014

Merit scholarship enrollment effects



- State-level panel data from IPEDS covering the 1988-97 period
- Compared enrollments in GA with similar states, pre and post-HOPE
- Main findings
 - HOPE increased freshmen enrollment by about 6 percent
 - 4-year colleges account for most of the gain
 - 4-year-school effect explained by fewer students leaving state and more moving up from 2-year schools
 - Increase amounted only 15 percent of freshmen scholarship
- What about those HOPE-eligibles that do not enroll in college (at least initially)?

Stratification of enrollments



- Institution-level panel data from IPEDS and Peterson's covering the 1989-2001 period
- Compared the "quality" of freshmen at Georgia colleges to their out-of-state counterparts, pre and post-HOPE
- Main findings
 - At more selective institutions, HOPE raised all measures of student quality and reduce their variance
 - At less-selective institutions HOPE had no effect
 - Overall, HOPE increased stratification by ability in Georgia institutions

Merit scholarship incentives



- Pooled cross-section and panel data on UGA undergrads from 1989-97
- Compared [academic choices](#) of GA residents with their out-of-state counterparts pre and post-HOPE
- Main findings
 - HOPE decreased full-load enrollments and increased course withdrawals among resident freshmen
 - Effects concentrated on students whose predicted freshmen GPAs place them on or below the scholarship-retention margin
 - HOPE substantially increased summer-school credits.
- Other findings
 - HOPE reduced the number of credit hours completed in math and science core curriculum courses during the first year
 - Effect persisted into the second year
 - HOPE increased likelihood of that student would major in Education

Predictive value of the “new” SAT



- Individual data from 2006 UGA entering class (first “exposed” cohort)
- Examined the predictive value of the “new” SAT on freshman academic performance
- Main findings
 - On the margin, SATV and SATM add little to the prediction of first-year college GPA and earned hours
 - SATW matters a little, contributing to the prediction of Whites’ performance
 - For Blacks, none of the tests matter
 - What matters for everyone is high-school GPA, and to a lesser degree, AP credits
 - Prediction of first-year performance is significantly enhanced by controlling for where a student attended high school, especially for Blacks

Importance of non-cognitive skills

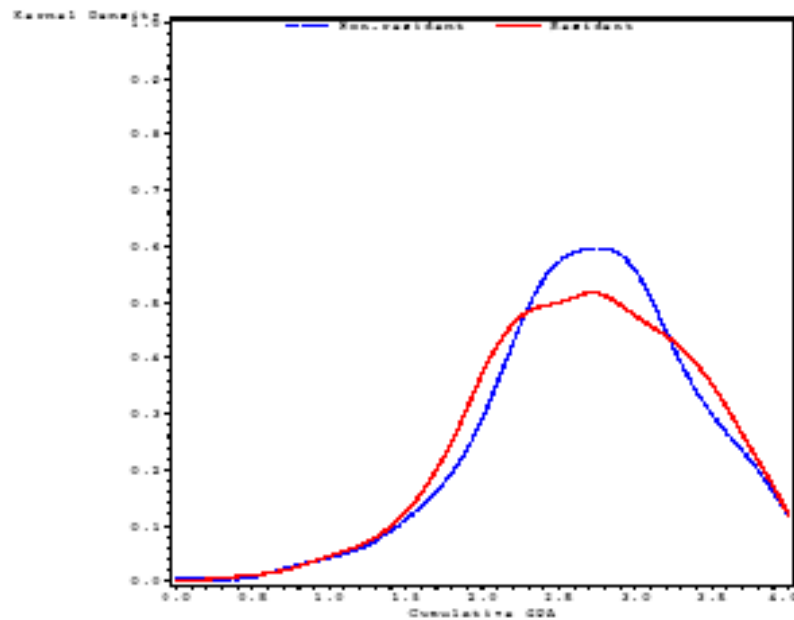


- Panel data from the 1998-99 ECLS-K cohort, following students from K through 5th grade
- Examined role non-cognitive skills play in gender achievement gaps
- Main findings
 - Girls in every racial category outperform boys on reading tests, while boys score at least as well on math and science tests as girls
 - Boys in all racial categories across all subject areas are not represented in grade distributions where their test scores would predict
 - Boys who perform equally as well as girls on reading, math and science tests are graded less favorably by their teachers
 - Non-cognitive skills explain the grades/test score disparity
 - Some evidence of a grade “bonus” for boys with test scores and behavior like their girl counterparts

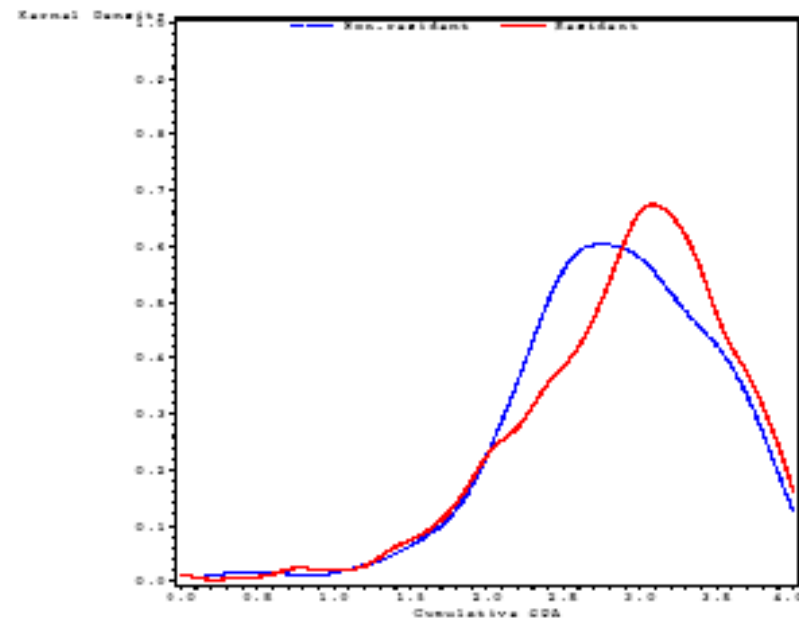


QUESTIONS?

Cumulative UGA freshmen GPA distributions residents vs non-residents



(a) CGPA: 1992 Class



(b) CGPA: 1995 Class