Papers and Presentations Employing Data from the North Carolina Education Research Data Center

Presentations and publications since March 2007 are in bold text; the most recent are marked with *.

**Minority Achievement Gap**


*Tyson, Karolyn, William Darity, Jr., and Victor Wang. 2008. “Giftedness and
Black-White Achievement Gap.” Where was this presented/published?


**Teacher Quality and Student Outcomes**


Teachers.” Presented at the National Board for Professional Teaching Standards National Conference and Exposition.


Goldhaber, Dan. 2006. “National Board Teachers are More Effective, but are they in the Classrooms Where They’re Needed the Most?” *Education Finance and Policy* 1(3): 372-383.


School Accountability and Choice


Jones-Sanpei, Hinckley A. 2006. “Racial and Socioeconomic Segregation in a District with Controlled School Choice.” Paper presented at the Association for Public Policy Analysis and Management Fall Research Conference, Madison, WI.

Ladd, Helen F. 2003. “School Vouchers and Student Achievement: What We Know So Far.” Center for Child and Family Policy, Policy Brief, 3(1).


The Academic Performance of At-Risk Children


Problem Behavior in Schools


Linking Data and Policy


Other Studies


Using detailed administrative data for the public K-12 schools of North Carolina, we measure racial segregation in the public schools of North Carolina. With data for the 2005/06 school year, we update previously published calculations that measure segregation in terms of unevenness in racial enrollment patterns both between schools and within schools. We find that classroom segregation generally increased between 2000/01 and 2005/06, continuing, albeit at the slightly slower rate, the trend of increases we observed over the preceding six years. Segregation increased sharply in Charlotte-Mecklenburg, which introduced a new choice plan in 2002. Over the same period, racial and economic disparities in teacher quality widened in that district. Finally, we compare our basic measure to two alternative measures of segregation.


Extant literature, while sparse, suggests that the relationships between such peer evaluations and status-relevant behaviors such as aggression and academic involvement and achievement may not be invariant across racial-ethnic groups. Studies have demonstrated that preference is associated with both concurrent and later academic achievement among elementary school children but that this relation changes as youth transition into middle school and early adolescence. Too, several studies suggest that peer-perceived popularity is a risk factor for adolescent academic disengagement, especially among the subset of popular youth who are also aggressive. However, in the few studies that have examined these constructs among homogenous minority-group samples or among heterogeneous samples that also allow for cross-group comparisons, the relationships between popularity, aggression and academic disengagement are not as clear cut. The proposed study utilizes the racially-balanced Program II school-based sample of grade 7-9 students to examine peer-perceived popularity and social preference, or liking, aggression, and academic involvement/achievement. Whereas the prog II data set is rich in peer nomination and network data, it does not have a consistent measure of academic achievement and we currently rely upon participation in academic subject clubs as our measure of academic involvement. Working with the North Carolina Education Research Data Center will allow the authors to construct a measure of academic achievement at several time-points with the use of EOG scores for math and English and to more accurately operationalize academic involvement for the purposes of the study.


The current study is an attempt to investigate the racial achievement gap by focusing on two popular school programs: gifted programs, advanced placement (AP) courses. Our goal is to understand the role of these programs in the context of the racial gap in academic achievement by examining the performance of students from 3rd grade to 12th grade. In this study, we focus on four specific steps where these school programs can influence students’ academic performance.


This paper reports descriptive findings on the stability of measured teacher effectiveness.
Using a unique longitudinal dataset from North Carolina that includes the records of virtually all teachers and students in North Carolina, we estimate various measures of teacher effectiveness using different specifications of a value-added education production function model. We then compare these different estimates of teacher effectiveness to one another and use them to assess the extent to which measures of teacher value-added vary over time, and across subjects and teaching contexts. We find average correlations of 0.3 in reading and 0.5 in math in year-to-year estimates of teacher effectiveness, and cross-subject correlation that averages near 0.5. Chi-squared tests support the notion of some stability with these effectiveness measures; however, the year-to-year variation is greater than what is predicted were random error the only unstable component, implying that teacher job performance does vary over time.

Not surprisingly, having more information about teachers in the form of larger classes or additional years of matched teacher-student data increases the precision of estimated teacher effects, but various investigations show the change in rankings that result from introducing more student observations within a class are generally small—fewer than 10 percent of teachers move their relative rankings by more than one quintile equivalent in math. Introducing more information from a successive year of teaching, however, has a considerable impact on relative rankings—in this case, close to 50 percent of teachers change relative rankings by more than one quintile equivalent in math.

We conduct additional investigations into the stability of estimated effectiveness focused around other variations within the context of teaching: before and after obtaining tenure, before and after transferring schools, across various student demographics, and at different points along teachers’ career paths. Generally, we find estimated effectiveness in math is considerably more stable over time than in reading; however, estimates did not support the notion of “stable” performance over time in either subject.


In this paper, we describe the results of a study assessing the relationship between the certification of teachers by the National Board for Professional Teaching Standards (NBPTS) and elementary-level student achievement. We examine whether NBPTS assesses the most effective applicants, whether certification by NBPTS serves as a signal of teacher quality, and whether completing the NBPTS assessment process serves as a catalyst for increasing teacher effectiveness. We find consistent evidence that NBPTS is identifying the more effective teacher applicants and that National Board Certified Teachers are generally more effective than teachers who never applied to the program. The statistical significance and magnitude of the “NBPTS effect,” however, differs significantly by grade level and student type. We do not find evidence that the NBPTS certification process itself does anything to increase teacher effectiveness.


In this paper, we use a unique data set that includes a panel of all teachers in North Carolina over a 4-year period (1996–1997 through 1999–2000) to describe the distribution of teachers certified by the National Board for Professional Teaching Standards (NBPTS) across classrooms, schools, and districts. The sorting of National Board Certified Teachers (NBCTs) across students is an important equity issue both because these teachers are thought to be exceptionally qualified teachers and because in North Carolina (and many other states) state-level financial incentives are provided to NBCTs, creating an implicit subsidy to those districts and schools where they are employed. Our findings on the sorting of NBCTs across districts, schools and students reflects the research on the distribution of teacher credentials across students: the most disadvantaged districts, schools, and students are least likely to have access to those teachers who are recognized by NBPTS as being exceptionally qualified teachers.

Research on teacher attrition has fueled concerns about retaining high quality teachers. Evidence suggests that the most academically proficient teachers are the most likely to leave the profession (Murnane & Olsen, 1989, Podgursky, Monroe, & Watson, 2004). When this is considered in light of the positive correlation between teachers’ academic proficiency and student achievement (Clotfelter, Ladd, & Vigdor, 2007; Goldhaber, 2006), it is tempting to conclude that public schools are losing their best teachers. However, many challenge the value of traditional quality indicators instead favoring teacher value-added measures. Using a variety of teacher value-added measures to explore the mobility of teachers, we found that the most effective teachers tended to stay in teaching and stay despite challenging school contexts.


Certification from the National Board of Professional Teaching Standards (NBPTS) represents a significant policy initiative for the nation’s public school teachers as outlined in the No Child Left Behind Act. This paper analyzes how obtaining NBPTS certification impacts teachers’ career paths. Using a competing risks model on data from North Carolina public schools, we find evidence suggesting that National Board Certified Teachers (NBCTs) exit the school, district, and state more frequently than others. These findings are robust to instrumental variables and other tests for robustness. We also employ regression discontinuity methods that support these conclusions, and use this design for further inquiry into the characteristics of teaching assignments for certified teachers relative to unsuccessful applicants. With these tests, we find only limited evidence that NBCTs might utilize the credential to select into teaching assignments with relatively fewer minorities in the student population.


Virtually all states require teacher candidates to undergo teacher testing as a prerequisite to participation in the public school teacher labor market. This paper analyzes the role of teacher licensure tests in shaping the demographic composition of the workforce and its subsequent effect on student achievement. Using a dataset on public school teachers in North Carolina, we find minorities in the teacher labor market have substantially lower performance on licensure tests, but find mixed evidence on whether these performance differences impact student achievement. It appears that utilizing teacher-testing policies in general screens out disproportionately more minorities from the teaching profession, though their quality as teachers may potentially be higher than their counterparts. Further, holding all other teacher characteristics constant, we find the Praxis II exams, which are utilized heavily in teacher-testing policies, generally under-predict minority (and specifically African American) teachers’ performance. We further analyze and discuss the resulting impacts these policies have on student outcomes.

I propose a generalization to the standard career concerns model and apply it to the public teacher labor market. In particular, this model provides three testable hypotheses: optimal teacher effort levels decline with experience all things equal, optimal effort declines with tenure at a particular school, and teachers shirk as incentives break down at the end of a teacher’s career or tenure. Using administrative data from North Carolina spanning 13 school years through 2007, I find significant changes in teacher absenteeism consistent with the generalized career concerns model. These findings are robust to various empirical specifications, showing consistent within-teacher behavioral changes. I also investigate the effects of career concerns incentives breaking down, and find evidence suggestive of teacher shirking. While the career concerns effect is compounded with a learning curve early in a teacher’s career, I find shirking among exiting teachers is significantly predictive of negative outcomes in student testing.


Growing concerns over the achievement of U.S. students have led to proposals to reward good teachers and penalize (or fire) bad ones. The leading method for assessing teacher quality is "value added" modeling (VAM), which decomposes students' test scores into components attributed to student heterogeneity and to teacher quality. Implicit in the VAM approach are strong assumptions about the nature of the educational production function and the assignment of students to classrooms. In this paper, I develop falsification tests for three widely used VAM specifications, based on the idea that future teachers cannot influence students' past achievement. In data from North Carolina, each of the VAMs' exclusion restrictions are dramatically violated. In particular, these models indicate large "effects" of 5th grade teachers on 4th grade test score gains. I also find that conventional measures of individual teachers' value added fade out very quickly and are at best weakly related to long-run effects.


Using evidence from Durham, North Carolina, we examine the impact of school choice programs on racial and class-based segregation across schools. Theoretical considerations suggest that how choice programs affect segregation will depend not only on the family preferences emphasized in the sociology literature but also on the linkages between student composition, school quality and student achievement emphasized in the economics literature, and on the availability of schools of different types. Reasonable assumptions about how these factors differ for students of different races and socio-economic status suggest that the segregating choices of students from advantaged backgrounds are likely to outweigh any integrating choices by disadvantaged students. The results of our empirical analysis are consistent with these theoretical considerations. Using information on the actual schools students attend and on the schools in their assigned attendance zones, we find that schools in Durham are more segregated by race and class as a result of school choice programs than they would be if all students attended their geographically assigned schools. In addition, we find that the effects of choice on segregation by class are larger than the effects on segregation by race.

Durham, NC, is a large, countywide district that, like many urban districts across the country, combines geographic attendance zones with a variety of parental choice programs. Using administrative data that includes addresses for individual students, we examine whether the likelihood of opting out of one’s geographically assigned school varies across different groups defined by race, parent education level, and student achievement. We also examine how the characteristics of a student’s geographically assigned school and the characteristics of nearby school choice options influence the likelihood of opting out. Finally, we compare the peer composition in neighborhood schools to what the peer composition in those schools would be if all students attended their neighborhood schools. We find that school choice programs in Durham have allowed higher achieving schools to cream-skim educationally advantaged students from many neighborhood schools. Although, cream-skimming has only small effects on the peer composition of non-choosers on average, schools with concentrations of disadvantaged students and schools located near choice schools attractive to high achievers are particularly hard hit by cream-skimming.


Giving parents a choice among schools within their district is one of the most widely used school assignment policies in the United States. Coupled with standardized testing, public school choice is a key component of the school accountability movement and was institutionalized nationwide through the provisions of the 2001 No Child Left Behind Act (NCLB). Three interrelated expectations underlie the policy. First, choice will increase allocative efficiency by encouraging schools to differentiate their products and allowing parents to choose the curriculum and pedagogy most appropriate for their children. Second, choice encourages technical efficiency by forcing schools to compete. This competition pushes schools to adopt more efficient production methods. Third, choice promotes equity by allowing students who reside in areas served by poorly performing schools to enroll in better schools. This paper evaluates the logic and empirical evidence concerning these expectations.


This paper explores the relation between school performance and dropout rates under North Carolina’s accountability system. We evaluate competing hypotheses. The first posits that accountability systems help all students succeed by increasing test performance and decreasing dropout rates. The alternative hypothesis states that accountability systems give schools incentives to encourage difficult students to leave. By “pushing out” these students, schools can increase their overall test performance. Utilizing data on every dropout in the state, we examine the relation between changes in dropout rates and changes in the schools’ academic performance. Using a fixed-effects model clustering schools within years, we find that schools improve test performances when dropout rates rise; they add to their overall composite by subtracting problematic students.


Although the federal No Child Left Behind program judges the effectiveness of schools based on their students’ achievement status, many policy analysts argue that schools should be measured, instead, by their students’ achievement growth. Using a ten-year student-level panel dataset from North Carolina, we examine how school-specific pressure associated with the two approaches to school accountability affects student achievement at different points in the prior-year achievement distribution. Achievement
gains for students below the proficiency cut point emerge in response to both types of accountability systems. In contrast to prior research highlighting the possibility of educational triage, we find little or no evidence that schools in North Carolina ignore the students far below proficiency under either approach. Importantly, we find that the status, but not the growth, approach reduces the reading achievement of higher performing students, with the losses in the aggregate exceeding the gains at the bottom. Our analysis suggests that the distributional effects of accountability pressure depend not only on the type of pressure for which schools are held accountable (status or growth), but also the tested subject.


Using administrative data on public school students in North Carolina, we find that sixth grade students attending middle schools are much more likely to be cited for discipline problems than those attending elementary school. That difference remains after adjusting for the socioeconomic and demographic characteristics of the students and their schools. Furthermore, the higher infraction rates recorded by sixth graders who are placed in middle school persist at least through ninth grade. An analysis of end-of-grade test scores provides complementary findings. A plausible explanation is that sixth graders are at an especially impressionable age; in middle school, the exposure to older peers and the relative freedom from supervision have deleterious consequences. These findings are relevant to the current debate over the best school configuration for incorporating the middle grades. Based on our results, we suggest that there is a strong argument for separating sixth graders from older adolescents.


Childhood lead poisoning remains a critical environmental health concern. Low-level lead exposure has been linked to decreased performance on standardized IQ tests for school-aged children. This study seeks to determine whether blood lead levels in early childhood are related to educational achievement in early elementary school as measured by performance on end-of-grade testing. Educational testing data for fourth grade students from the 2000-2004 NC Education Research Data Center were linked to blood lead surveillance data for seven counties in NC and then analyzed using exploratory and multivariate statistical methods.

The discernible impact of blood lead levels on end-of-grade testing is demonstrated for early childhood blood lead levels as low as 2 μg/dL. A blood lead level of five is associated with a decline in EOG reading (math) scores that is roughly equal to 15% (14%) of the interquartile range, and this impact is very significant in comparison with the effects of covariates typically considered profoundly influential on educational outcomes. Early childhood lead exposures appear to have more impact on performance on the reading rather than the math portions of the tests.

Our emphasis on population level analyses of children who are roughly the same age linked to previous (rather than contemporaneous) blood lead levels using achievement (rather than aptitude) outcome complements the important work in this area by previous researchers. Our results suggest that the relationship between blood lead levels and cognitive outcomes are robust across outcome measures and at low levels of lead exposure.
In a variety of important domains, there is considerable correlational evidence suggestive of what are variously referred to as social norm effects, contagion effects, information cascades, or peer effects. It is difficult to statistically identify whether such effects are causal, and there are various non-causal mechanisms that can produce such apparent norm effects. Lab experiments demonstrate that real peer effects occur, but also that apparent cascade or peer effects can be spurious. A curious feature of American local school configuration policy provides an opportunity to identify true peer influences among adolescents. Some school districts send 6th graders to middle school (e.g., 6th-8th grade “junior high”); others retain 6th graders for one additional year in K-6 elementary schools. Using administrative data on public school students in North Carolina, we have found that sixth grade students attending middle schools are much more likely to be cited for discipline problems than those attending elementary school, and the effects appear to persist at least through ninth grade. A plausible explanation is that these effects occur because sixth graders in middle schools are suddenly exposed to two cohorts of older, more delinquent peers.


This set of two studies investigates the high school and college outcomes of middle school students who participated in a summer residential program for the academically talented, using a control group of qualified students who did not attend such a program. Through their participation in a 7th grade talent search in 1996-97 the students qualified to attend a summer program at Duke University’s Talent Identification Program (TIP). Of the North Carolina students in this group, 141 (72 female) attended at least one summer program in middle school (7th and 8th grades). The control group consisted of 2,649 students from the state of North Carolina who had qualified for but did not attend a summer program at TIP in middle school. The two groups did not differ significantly on gender, parent education level, or ethnicity. For Study 1, the students’ high school end-of-course (EOC) standardized test scores were obtained from state public school records and compared across the two groups in a series of multiple regression analyses by subject area. Results showed that the effects of summer program on high school achievement appear to depend on the subject area and the students’ level of qualification. For Study 2, surveys were mailed to program participants (N= 92) and non-participants (N=184) from the same talent search cohort to assess students’ high-school coursetaking, GPA, college major, and educational aspirations. Some associations were found between program participation and later academic choices.


Longitudinal self-report data from 4,071 students are used to examine the degree to which students’ perceptions of their social environments (people and places) are associated with changes in three school success outcomes: school engagement, trouble avoidance, and grades. Specific variable dimensions within the neighborhood, peer, and family domains had significant effects on one or more of these school outcomes. Implications of the findings for further research and intervention practice are discussed, including the availability of a Web-based resource for linking these findings with evidence-based intervention and prevention strategies.

The Andrew W. Mellon Foundation is trying to understand how low-income students and their parents make decisions about college and how their pre-college characteristics interact with the college environment to shape outcomes, including graduation rates. Please see attached “General Notes” for a fuller description of motivation and guiding questions. The data (including personal identifiers), to which only the individuals specified in the attached document “College & Beyond Database,” below, will have access, will be stored on secure networked drives in Mellon’s offices in accordance with the attached “Information Security Plan.” The project is part of the larger College & Beyond study more fully described in the attachment below. The stripped data will become part of the expanded College & Beyond database. Procedures governing that database are also described in the “College & Beyond” section below.

The project has been ongoing since October 2005. The bulk of the last year was spent collecting data for the project from other universities. Around a quarter of the data was just received in the last few months. Currently, the project is in the preliminary analysis stage. Early results have shown a strong, positive, monotonic relationship between graduation rates and income quartiles. This correlation holds across race, ethnicity, and SAT/ACT scores. Also, some work has been done employing hazard rate analysis to observe the determinants of the probability of students dropping out across semesters.

*Edmunds, Julie, Elizabeth Glennie, and Larry Bernstein. 2008. “Early Results and Methodological Issues from an Experimental Study of Early College High Schools Symposium.”

Funded by a four-year grant from the Institute of Education Sciences, the Study of the Efficacy of the Learn and Earn Early College High School Model is a longitudinal, experimental study that will examine the impact of the Early College High School model on student outcomes and will associate aspects of program implementation with specific outcomes. This session includes four presentations that present early results from the study as well as methodological issues that have been encountered. The four presentations include: an overview of the study and model; a discussion of the development and piloting of an instrument to measure attitudinal and behavioral outcomes; early student outcomes from one school that used random assignment prior to the study; and proposed analysis strategies for dealing with the issue of endogenous outcomes that impact student achievement.


Researchers conducting non-experimental studies of panel data often attempt to remove the potentially biasing effects of individual heterogeneity through the inclusion of fixed effects. I evaluate so-called “Value Added Models” (VAMs) that attempt to identify teachers’ effects on student achievement. I develop falsification tests based on the assumption that teachers in later grades cannot have causal effects on students’ test scores in earlier grades. A simple VAM like those used in the literature fails this test: 5th grade teachers have nearly as large effects on 4th grade gains as on 5th grade gains. This is direct evidence of non-random assignment. I use a correlated random effects model to generalize the test to more complex estimators that allow for tracking on the basis of students’ permanent ability. The identifying restrictions of these estimators are again rejected. Teacher assignments evidently respond
dynamically to year-to-year fluctuations in students’ achievement. I propose models of this process that permit identification. Estimated teacher effects are quite sensitive to model specification; estimators that are consistent in the presence of (some forms of) dynamic tracking yield very different assessments of teacher quality than those obtained from common VAMs. VAMs need further development and validation before they can support causal interpretations or policy applications.


The purpose of this report is to provide the North Carolina Department of Public Instruction (NCDPI) with information about teachers’ responses to School-wide Positive Behavioral Support (PBS) and key educational outcomes on students in North Carolina elementary schools implementing School-wide (PBS). A web-based survey of teachers at eight elementary schools implementing School-wide positive behavior support according to national criteria was administered to assess teacher response to School-wide PBS. Data from the North Carolina Education Data Center was used to assess student outcomes related to academic performance, school suspensions, and teacher turn-over rates in the eight study schools compared with 264 NC elementary schools that had started School-wide PBS.


The Teach for America (TFA) program selects graduates from the most competitive undergraduate institutions and, after a short intensive training program, places them as teachers in the lowest-performing schools in the country. The few studies that have examined the effectiveness of TFA have focused on the elementary and middle school level. The findings have been somewhat mixed by grade level, subject and comparison group, but the studies with the strongest designs show some positive effects on student learning relative to traditional teachers.

The research here is based on the first study that examines TFA effects in high school. We estimate TFA effects with a rich longitudinal dataset from North Carolina that allows us to examine student test performance over time and to link students to their teachers. Looking at years 2001-2006, we focus on 23 school districts that have at least one TFA teacher in any of these years. We conduct a series of student and school fixed-effects models that take advantage of multiple end-of-course exam scores for students.

We find that TFA high school teachers have a positive effect relative to other high school teachers, including other teachers who are certified in-field. The findings are particularly strong for math and science teachers. Moreover, the findings suggest that the TFA effect exceeds the impact of additional years of experience. The findings are informative to policy debates on teacher recruitment and retention, as we discuss in the concluding section of the paper.
Research Projects Employing Data from
the North Carolina Education Research Data Center

Projects accepted since March 2007 are in bold text. Projects accepted since March 2008 are marked with an *.

**Minority Achievement Gap**

Armor, David. “Black Concentration and the Achievement Gap: Revisiting an Old Question in a New Educational Environment.” (George Mason University) Project funded by Smith Richardson Foundation.


Darity, William., Karolyn Tyson, and Domini Castellino. “Effective Schools and Effective Students.” (Duke University) Project funded by the Spencer Foundation.

Mickelson, Roslyn Arlin, Linwood Cousins, and Brian Williams. “Closing the Race Gap in Math and Science Achievement through Improving Parental Involvement in the Course Selection and Placement Process.” (University of North Carolina at Charlotte) Project funded by the National Science Foundation.


**Teacher Quality and Student Outcomes**

* Bosworth, Ryan C. “Class Size, Classroom Heterogeneity, and Teacher Incentives.” (North Carolina State University)

Bruegmann. Elias and Kirabo Jackson. “Teaching Students and Teaching Each Other: The Importance of Peer Learning for Teachers.” (Harvard University)


* Fodchuk, Katy. “Evaluation of Visiting International Faculty Program Teachers.” (Visiting International Faculty Program, Chapel Hill, NC)


Hoxby, Caroline and Hanley Chiang. “Rewarding Teachers for Performance: Getting the Design Right.” (Harvard University)

Jacob, Brian. “The Persistence of Teacher Effectiveness.” (University of Michigan) Project funded by the Spencer Foundation.

Jenkins, Scott; Diana Haywood, and Terry Thompson. “Preparing the Quality Teachers for NC: Aligning Higher Education & K -12 Data Marts to Make Data Driven Decisions.” (University of North Carolina, General Administration)

Ladd, Helen F., Charles T. Clotfelter, and Jacob Vigdor. “Teacher Quality and Student Achievement.” (Duke University) Project funded by the Spencer Foundation.


Bifulco, Robert and Helen Ladd. “Can School Choice Promote Racial Integration?” (Duke University)


Goldhaber, Dan. “Inside Charter Schools; Understanding the Mobility of Charter School Teachers and Leaders.” (University of Washington) Project funded by the US Department of Education.

* Goldin, Claudia. “Student Achievement and Teacher Quality in North Carolina: 1996 to 2006.” (Harvard University)

*Hannaway, Jane, and Zeyu Hu. “Value-Added Analysis of Teachers in Title I and non-Title I Schools.” (The Urban Institute and CALDER)

* Jackson, Kirabo. “Do Charter Schools Skim off Good Teachers from Regular Public Schools?” (Cornell University)


Mickelson, Roslyn Arlin and Bobbie Everett. “Pathways to an Equitable Future or to the Stratified Past? Tracking and Occupational Preparation in CMS.” (University of North Carolina at Charlotte)


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**Academic Performance of At-Risk Children**

Ahn, Thomas and Jacob Vigdor. “Analysis of the Effectiveness of Alternative Schooling in North Carolina.” (Duke University) Project funded by the NIDA Transdisciplinary Prevention Research Center

Bowen, Gary T., et al. “Evaluating the Effectiveness of the School Success Profile (SSP) Evidence-Based Practice Strategy on School- and Student-Level Performance.” (University of North Carolina at Chapel Hill) Project funded by the Knight Foundation and WT Grant Foundation.

Duncan, Dean. “Exploring the Outcomes for Youth Aging Out of Foster Care.” (University of North Carolina at Chapel Hill) Project Funded by the North Carolina Department of Social Services.

Duncan, Dean. “Assessing the Academic Performance of Children on Work First.” (University of North Carolina at Chapel Hill) Project funded by the North Carolina Department of Social Services.


* Gibson-Davis, Christina, Elizabeth O. Ananat, and Anna Gassman-Pines. “The Effects of Plant Closings on Children's Educational Achievement.” Project funded by a grant from the Smith Richardson Foundation and the Sanford Institute of Public Policy, Duke University.


Hannaway, Jane and Sarah Cohodes. “Student Transience in North Carolina: The Effect of Mobility on Student Outcomes Using Longitudinal Data.” Project funded by the Urban Institute.

Jentleson, Barbara. “Evaluation of Project HOPE.” (Duke University) Project funded by the Kellogg Foundation.

Keller, Lisa A., Stephen G. Sireci, Leslie Babinski. “Evaluating Student Achievement in the Schools Attuned Model.” (University of Massachusetts) Project funded by the All Kinds of Minds Institute.


Schulte, Ann C. “School-level Outcomes for Children in Special Education.” (North Carolina State University)

Problem Behavior in Schools


Glennie, Elizabeth and Joel Rosch. “Retention and Suspension: An Analysis of North Carolina Students and Schools.” (Duke University) Seed grant from NIDA Transdisciplinary Prevention Research Center.

Rabiner, David. “Violence Prevention Study for Middle School Students.” (Duke University). Project funded by the Centers for Disease Control.

Other Studies


Bowen, William. “Expanded College and Beyond Database.” Project funded by the Mellon Foundation.

Gipson, Debbie. “Statewide Assessment of Educational Achievement: CKD vs. Population.” (University of North Carolina at Chapel Hill) Project funded by the UNC Kidney Center/ Renal Research Institute.


Jacob, Brian and Jacob Vigdor. “Measuring the Impact of Peer Influence on Student Outcomes.” (University of Michigan) Project funded by National Institute on Drug Abuse.

Matthews, Michael. “Gifted Students Dropping Out: Recent Findings from a Southeastern State.” Project funded by Duke University Talent Identification Program.

Natkin, Jerry and Steven Jurs. “The Effect of Professional Learning Teams on Middle School Reading Achievement.” (SERVE, University of North Carolina at Greensboro)

Smerdon, Rebecca and Jennifer Cohen. “North Carolina Math and Science Pipeline Study.” (Urban Institute) Project funded by the National Science Foundation.


Abstracts of Recently Approved Projects:

Ahn, Thomas and Jacob Vigdor. “Analysis of the Effectiveness of Alternative Schooling in North Carolina.” Project funded by the NIDA Transdisciplinary Prevention Research Center.

Alternative schools are broadly defined as schools of 'second chance,' or 'last resort,' where students who do not perform well or are not accepted into the traditional mainstream academic class room setting, due to prior dropout, suspension, expulsion, pregnancy, substance abuse problems, learning disabilities or other reasons, are offered education and training. Currently there are over 70 such institutions in North Carolina, with each LEA having one to three schools.

Previous studies done on alternative schooling have centered on surveys sent out to school administrators, teachers, and students to gauge their opinions and impressions about the effectiveness of the program. While these provide insight into how persons associated with alternative schooling value these schools, I believe we can benefit from a more detailed look at the operation of these schools and the student outcomes they generate.


Underachievement has been a widely discussed topic in the gifted education literature, but research to date has been primarily qualitative in nature and has focused primarily on intra- and interpersonal characteristics of individual students rather than on the overall extent of the phenomenon in question (Kaskaloglu, 2003; McCoach & Siegle, 2003). Underachievement is “a severe discrepancy...
between expected achievement (as measured by standardized achievement test scores or cognitive or intellectual ability assessments) and actual achievement (as measured by class grades and teacher evaluations)” (McCoach & Siegle, p. 157). This definition suggests that underachievement may be described using evidence of high ability together with evidence of correspondingly lower-than-expected performance in the classroom. Therefore, this study seeks to quantify the prevalence of academic underachievement among a population of students identified as highly academically able, by combining data collected by the Duke University Talent Identification Program (Duke TIP) with student-level data from the North Carolina Education Research Data Center (NCERDC). Duke TIP data will enable prediction of expected achievement, while NCERDC student-level data will provide records of actual achievement as well as additional relevant demographic data. Documenting the prevalence of underachievement among academically able students will help determine future research directions, both at Duke TIP and within the broader field of gifted education. Additionally, information about the scale and scope of this problem may be applicable to future educational policy decisions affecting gifted students.

**Bosworth, Ryan C. Class Size, Classroom Heterogeneity, and Teacher Incentives.**

The goal of this study is to empirically evaluate predictions of recent theoretical advances in the economics of education literature. In particular, to evaluate theoretical predictions about the (1) the relationship between average achievement levels and the or distribution of that achievement within a given group of students, (2) the relationships between classroom size, the distribution of achievement, and classroom heterogeneity and (3) the probable effects of legislation that changes teacher and administration incentives (such as the NCLB Act) on the distribution educational attainment. The basic framework for analysis will be to statistically evaluate various relationships between classroom characteristics, outcomes, student, teacher, school, and district level variables. Two- and three-stage estimations procedures may be employed to mitigate the potential for endogeneity bias in estimation that may occur when variables are jointly determined.

**Bowen, William. “Expanded College and Beyond Database.” Project funded by the Mellon Foundation.**

The Andrew W. Mellon Foundation is trying to understand how low-income students and their parents make decisions about college and how their pre-college characteristics interact with the college environment to shape outcomes, including graduation rates. Please see attached “General Notes” for a fuller description of motivation and guiding questions. The data (including personal identifiers), to which only the individuals specified in the attached document “College & Beyond Database,” below, will have access, will be stored on secure networked drives in Mellon’s offices in accordance with the attached “Information Security Plan.” The project is part of the larger College & Beyond study more fully described in the attachment below. The stripped data will become part of the expanded College & Beyond database. Procedures governing that database are also described in the “College & Beyond” section below. The project has been ongoing since October 2005. The bulk of the last year was spent collecting data for the project from other universities. Around a quarter of the data was just received in the last few months. Currently, the project is in the preliminary analysis stage. Early results have shown a strong, positive, monotonic relationship between graduation rates and income quartiles. This correlation holds across race, ethnicity, and SAT/ACT scores. Also, some work has been done employing hazard rate analysis to observe the determinants of the probability of students dropping out across semesters.
Bruegmann, Elias and Kirabo Jackson. “Teaching Students and Teaching Each Other: The Importance of Peer Learning for Teachers.”

Observation suggests that learning from fellow teachers is an important part of becoming a good teacher. In fact, several states including North Carolina have implemented teacher mentoring as an integral part of education reform. However, it is difficult to identify the effect of learning from fellow educators on teacher effectiveness. The unique size and scope of the North Carolina Education Research Data Center data, allows one to identify high-ability teachers by linking student test score data with teacher personnel records.

The data also allow one to track teachers over time as they move from one school to another. Using the student End of Grade testing data, we hope to observe the effect of their arrival at or departure from a school on the student achievement gains in the classes of their colleagues. Understanding the size of such spillovers between teachers will aid researchers and policy makers in understanding the total importance of good teachers and could have strong implications for the effects on total student achievement of mixing teachers of different ability levels and backgrounds.


The first phase of this project will assess how school staffing patterns influence the labor market decisions and effectiveness of new teachers. This project consists of two parts. The first will use existing data on North Carolina teachers, students, and schools to examine the relationship between school staffing and individual teacher retention and turnover. Specifically, we intend to estimate whether teachers’ retention decisions are influenced by the distribution of their colleagues’ experience, education, and quality, holding constant other characteristics of the students and school environment. The second will estimate the effect of teacher peers on measures of a teachers’ own effectiveness. At least initially, we will restrict our analyses to cohorts of new teachers, in part because the school placement of these teachers is arguably less susceptible to self-selection than the placement of more experienced teachers. Further, given that the most critical decisions regarding retention are made in the first few years of teaching, we expect that the initial school environment plays a particularly important role in teachers’ subsequent career decisions.

The second phase of the project will use the North Carolina matched student and teacher data to examine the long-standing issue of how to estimate and interpret the effect of teacher characteristics, such as experience, licensure, and graduate degrees, on student outcomes. For the past several decades, researchers have been attempting to document the importance of various factors on the educational attainment of students. Early research based on cross-sectional student test score data concluded that teachers and other school inputs were of little importance relative to individual student characteristics such as race and poverty. More recently this finding has been challenged with the availability of large administrative panel data sets and the use of a number of strategies to account for the non-random matching of teachers to students (Hanushek and Rivkin, 2006, and Wayne and Youngs, 2003). While this research continues to expand, with over 400 articles already completed (Hanushek and Rivkin, 2006), the recent findings present a puzzle.


Though clear evidence exists about the sizeable impacts teachers can have on student achievement, relatively little is known about the ability of incentive mechanisms to attract, retain and reward good teachers. The current project proposes examining three incentive programs: the federal Teacher Loan...
Forgiveness Program, the ABC's Pilot Program\(^1\) in North Carolina and the Pilot Pay for Performance Program in the Charlotte-Mecklenberg School District. This project will examine the effectiveness of the incentive programs at improving the following outcomes: i) attracting teachers, specifically high-quality teachers, to high-poverty/low-performing schools; ii) retaining teachers, specifically high-quality teachers, in high-poverty/low-performing schools and iii) increasing student achievement as measured by value-added on end of grade exams. Understanding the effects of such programs is crucial many states and local school districts are considering similar policies and because an incentive program that induces the most effective teachers to enter and remain in low-performing schools has potential to close the achievement gap.

**Fletcher, Jason. “Students with Special Needs: Transitions, Achievement, and Spillovers.”**

The goals of this project are several-fold. First, this project will describe the transitions into and out of special education placements of students over time. Emphasis will be placed on predictors of transitions as well as important differences in transition propensities based on individual, classroom, and school characteristics. These transitions will be examined separately by the different categories of special needs (e.g. learning disability, emotional behavior disorder, etc.). Second, this project will characterize the learning environments in which students with special needs are placed. The description will focus on school characteristics, teacher characteristics, and classmate characteristics. Third, this project will examine the longer-term test score outcomes of students placed in special education environment. Finally, this project will seek to examine the impacts on the educational environments caused by included students with different types of special needs. This final goal will complement research I am currently conducting that has been funded by the American Education Research Association and uses the Early Longitudinal Childhood Study-Kindergarten Cohort. All analysis will use standard and advanced econometric cross-sectional and panel-data techniques, including fixed effects and propensity-score matching estimation.

* Fodchuk, Katy. “Evaluation of Visiting International Faculty Program Teachers.”

The proposed study will examine Visiting International Faculty Program (VIF) teachers’ performance as measured by student test performance outcomes. Analysis of variance is proposed to compare VIF teachers’ student outcomes to student outcomes of American teachers, new graduate/early career American teachers, lateral entry American teachers, and among VIF teachers in years 1, 2, and 3 of their tenure in the U.S. We propose to conduct a higher-order between-subjects \(6 \times 3\) factorial analysis to examine VIF teachers’ region of origin by subject taught. This will include analysis of main effects and two-way interactions. We also propose a stepwise multiple regression to determine whether school report card and growth scores contribute significantly to VIF teachers’ students’ test scores beyond student demographic control variables. This information will primarily be used to inform our selection, training, and support programs for VIF teachers and provide partner institutions (i.e., state departments, district personnel, and schools) with information on VIF teachers’ students’ performance. VIF will independently fund the analysis of this data and comply with confidentiality measures outlined in the “North Carolina Education Research Data Center Confidentiality Agreement for Investigators.”

**Fryer, Roland. “Bad Apples: The Effect of Alternative Schooling on Test Scores.”**

Project funded by the Department of Economics at Harvard College.

Public education, which must be available without cost to all children from roughly age six to age sixteen, presents unique challenges not present within private, tuition-funded schools. One such

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\(^1\) The ABC’s Accountability Program was discontinued by the state of North Carolina but subsequently continued in the Charlotte-Mecklenberg School District under the name the Local Accountability Bonus Program.
The challenge involves how to handle students with frequent disciplinary problems who may inhibit the learning of other students. While private institutions can conceivably expel such students, public schools are required by law to provide such students with educational services. As a possible remedy, an increasing number of public school systems have created special schools for behaviorally-challenged students. Disruptive students are taken out of the regular public schools in the district and placed in such schools, commonly known as alternative schools. Still, the effects of alternative schools on educational outcomes, for students in the alternative schools and the schools the disruptive students were taken out of, are unclear. Many of these schools are relatively new; similarly, research into the topic is still in its infancy.

We ask: what effect does placing students with behavioral problems into special alternative schools have on test scores, dropout rates, and, with sufficient data, future life outcomes, both for students placed in the alternative schools and for the students who remain in the schools these students left behind?

Our research will focus on public school districts within North Carolina. Public school districts in North Carolina specifically (and the United States generally) can be grouped into two categories – districts with alternative schools and districts without them. Because alternative schools are relatively new inventions, all districts with alternative schools used to be districts without them, and this fact will allow us to pursue answers to complex questions.

Gibson-Davis, Christina, Elizabeth O. Ananat, and Anna Gassman-Pines. “The Effects of Plant Closings on Children's Educational Achievement.” Project funded by a grant from the Smith Richardson Foundation and the Sanford Institute of Public Policy, Duke University.

The study investigates the role of localized job losses on children's educational achievement by analyzing the effect of plant closings on the test scores of third- through eighth-graders in all 100 North Carolina counties from 1995 to 2006. Data come from the North Carolina Education Database, which includes test scores of all public school students. By relying on plausibly exogenous variation in job losses induced by international market conditions, we are able to explore the causal relationship between economic conditions and educational achievement.


Positive Behavior Support (PBS) is a school-wide program that consists of positive behavior training and reinforcement of good behavior. Encouraging good behavior is hypothesized to decrease a range of negative school outcomes such as: the number of suspensions; the number of days suspended; the number of arrests for specific reportable offenses; and the amount of teacher turnover. It is also believed that encouraging good behavior will have positive effects on end of year test scores, attendance and teacher work satisfaction.

North Carolina public schools began implementing PBS in 2001, and as of September 2006 it is in use in 249 (14%) of the state’s 1,752 public elementary schools. Eight of these schools have implemented the PBS program using seven major program components that are considered the gold standard for optimal program success: a) an agreed upon and common approach to discipline; b) a positive statement of purpose; c) a small number of positively stated expectations for all students and staff; d) procedures for teaching these expectations to students; e) a continuum of procedures for encouraging displays and maintenance of these expectations; f) a continuum of procedures for discouraging displays of rule-violating behavior; and, g) procedures for monitoring and evaluating the effectiveness of the discipline system on a regular and frequent basis.

The goal of this study is to evaluate outcomes of the PBS program on a selection of elementary schools participating in PBS in North Carolina. We will create reports for all eight schools, and where data permit, we will create an individual report for each school.

Purpose: To conduct an epidemiological study of the educational performance, educational outcomes, and special education needs of school-age children with chronic kidney disease (CKD) in North Carolina. Participants: Fifty school-age children/adolescents with CKD will be matched to controls (N = 250) on age, gender, race, school district, and season of testing. A one to five case/control matching ratio will be used. Data: All student-level data housed in the North Carolina Educational Research Database Center (NCERDC) center will be collected for both cases and controls. Procedure: Participants will be recruited from major medical centers in North Carolina. Once consent is obtained, identifying information will be sent to the NCERDC where cases will be matched to controls. A dataset of school, school testing results, and academic placement will be granted. Identifiers for cases will be linked to unique identification number and stored separate to the school data file. Analysis: Data will be examined both cross-sectionally and longitudinally.

Goldhaber, Dan. “Inside Charter Schools; Understanding the Mobility of Charter School Teachers and Leaders.” Project funded by the US Department of Education.

Charter schools present a unique opportunity to explore such questions and inform the broader teacher policy debate in public education for two important reasons. First, because charter schools are largely located in urban areas, they tend to enroll minority and low-income students. Nationally, over half (58%) of charter school students enrolled in 2005 were racial/ethnic minorities and about half (52%) were eligible for free/reduced-price lunch (Lake and Hill, 2005). Charter schools typically serve just the kids of students who typically face the teacher quality problems in the broader public school system. At the same time, charter schools ostensibly operate outside many of the institutional and organizational constraints traditional public schools face, including human resource constraints. In some states charter teachers (or a percentage thereof) do not have to meet typical teacher certification requirements and are not unionized. In exchange for more operational independence, charters are (theoretically) held more strictly accountable for performance and maintaining a clientele of satisfied parents than traditional schools. With their combination of a high-need student population, operational flexibility, and pressure for results, charter schools make an interesting case for examining what human resource practices look like when schools face different human resource constraints.


Recent evidence has shown that the teacher quality in the United States has decreased over the past four decades, in part due to increased labor market opportunities for women. Decreased teacher quality should negatively impact student outcomes. But if there has also been a diminution in the effect of teacher quality on student outcomes over these years, then the decline in teacher quality will not matter as much. The North Carolina Education Research Data Center’s data will be used to answer the latter half of the question and to examine the change in the impact of teacher quality on student outcomes over 10 years. This data will also be used to examine the impact of the change in teacher quality over time on different subgroups of students, such as those of different races, genders, socioeconomic statuses, and performance levels, which will allow for more detailed understanding of the populations whose outcomes will be most affected by the decline in teacher quality. Finally, conclusions will be drawn about the impact of increased labor market opportunities for women on student outcomes, and suggestions about where the trend is headed will inform policy applications about allocations of teachers, populations with the highest risk of being adversely impacted by the decline in the quality of teachers, and whether new investments need to be made in training and developing higher-quality teachers. The nuanced insight and solid applications about teacher quality afforded by this research will greatly benefit the NCERDC.
*Hannaway, Jane, and Zeyu Hu. “Value-Added Analysis of Teachers in Title I and non-Title I Schools.”

The proposed analysis seeks to use the extensive data available at the North Carolina Education Research Data Center (NCERDC) to compare teacher contributions to student achievement gains in mathematics and reading/language arts in Title I (higher poverty) and non-Title I (lower poverty) elementary and secondary schools and to identify factors that contribute to differences. Our analysis will use a value-added framework which requires that we link students and their teachers. We will refer to a matching method used by Clotfelter, Ladd and Vigdor (2007) and by Xu, Hannaway and Taylor (2008) to establish a link between students and teachers through matching teaching classrooms (by aggregating from End of Grade and End of Course testing) and actual classroom records from School Activity Reports. The analysis will result in at least one paper that will expand the body of research on teacher effectiveness and inform policy makers and school officials about steps likely to improve teacher effectiveness, particularly in high-poverty schools. UI will share these papers with NCERDC and the Department of Public Instruction and will also share merged and cleaned data files if requested.

Hannaway, Jane and Sarah Cohodes. “Student Transience in North Carolina: The Effect of Mobility on Student Outcomes Using Longitudinal Data.”

The proposed analysis seeks to use the extensive data available at the North Carolina Education Research Data Center (NCERDC) to study the effects of student mobility on student achievement and behavioral outcomes. We will focus both on describing mobile students and the schools they move to and from estimating the effect of transience. In order to perform this analysis, the Urban Institute is requesting student-, school-, and teacher-level data from the NCERDC. The focus of the analysis will be on student movement, with the school- and teacher-level data being used as control variables and descriptively. The analysis will result in at least two papers that will expand the body of research on student mobility by utilizing the longitudinal data available from the NCERDC to gain more precise estimates of effects.


The proposed analysis seeks to use the extensive data available at the North Carolina Education Research Data Center (NCERDC) to conduct a study of the effects of Teach For America (TFA) teachers on student achievement. We propose to utilize the longitudinal data on North Carolina students and teachers available from the NCERDC to measure the extent to which TFA teachers are more or less effective at improving student achievement than other teachers in North Carolina. In order to perform this analysis, the Urban Institute (UI) is requesting School Activity Reports and student-, school-, and teacher-level data from NCERDC. The only data customization required will be for the NCERDC to use a dataset of North Carolina TFA teachers, provided by the Urban Institute, to match teachers by social security number and create a flag variable indicating which teachers are TFA. All other merging and cleaning of datasets will be done by the Urban Institute. The analysis will result in at least one paper that will expand the body of research on Teach for America’s effectiveness and the significance of teacher certification and quality. UI will share these papers with NCERDC and the Department of Public Instruction and will also share merged and clean data files.


The Center for Research on Education Outcomes (CREDO), a nonpartisan policy and program evaluation group at Stanford University, is currently conducting The National Charter School Study to
learn more about the effectiveness of charter schools; our aim is to evaluate the impact of charter school attendance on student academic progress.

The charter schools participating in our study have agreed to submit student-level data to CREDO for three years. In order to compose statistically sound answers to many of the questions regarding the effects of charter schools, we are asking the Data Center to provide corresponding student-level data for students attending a number of traditional public schools in North Carolina. We believe that the project will make a significant contribution to the field of knowledge regarding the impact of charter schools on student academic achievement and growth towards state graduation standards and qualification for post-secondary education.

**Hoxby, Caroline and Hanley Chiang. “Rewarding Teachers for Performance: Getting the Design Right.”**

Policymakers are increasingly interested in computing teachers’ effects, defined as teachers’ contributions to their students’ achievement, and rewarding teachers on the basis of these performance measures. Our proposed project undertakes a systematic analysis of teacher effects to investigate an array of issues that policymakers are likely to encounter if they seek to design reward schemes on the basis of teacher effects. We aim to: 1) Demonstrate how the estimation of a large number of teacher effects can be rendered computationally feasible with a multiple-step method; 2) Test the validity of assumptions that underlie common regression specifications for the estimation of teacher effects; 3) Calculate the volatility of teacher effects when effects are estimated from multiple-year periods of varying lengths; 4) Simulate and compare the reward allocations of schemes that reward group performance and those that reward individual teacher performance; and 5) Determine the observable characteristics of rewarded, persistently rewarded, and unrewarded teachers under a variety of simulated reward systems.

* Jackson, Kirabo. “Do Charter Schools Skim off Good Teachers from Regular Public Schools?”

The efficacy of using charter school as a way to improve student outcomes has been fiercely debated. Proponents of charter schools argue that, in addition to the benefits to attending such schools, the increased school choice leads to greater competition that could improve outcomes of students in all schools. However, opponents of such policies argue that charter schools will skim off the most highly motivated peers, the best teachers, and drain resources away from traditional public schools. While the empirical evidence of the effect of charter school on traditional public school students is mixed, there is no evidence on these underlying mechanisms. I aim to use data from North Carolina, to determine if charter schools attract the most qualified teachers, or the most effective teachers away from traditional public schools. Since there is no consensus on the effect of charter schools on traditional public school students, investigating this particular mechanisms should help focus this debate, by identifying one mechanisms through which this could happen. The findings would also have direct policy implications, since the way in which charters are staffed could have a direct effect on whether they are likely to have deleterious effects on traditional public school students.

**Jacob, Brian. “The Persistence of Teacher Effectiveness.” Project funded by the Spencer Foundation.**

The primary objective of this project is to explore whether, and to what extent, teacher “effects” fade out over time. Recent research has demonstrated that there is considerable variation teacher effectiveness, defined as the ability of a teacher to raise student standardized test scores, within districts, and even within schools. For example, the findings of Rockoff (2004) and Hanushek et al (2005) both suggest a one standard deviation increase in teacher quality improves student math scores as much as a 4-5 student decrease in class size.
However, this research has not investigated whether the benefits of having a “good” teacher are persistent, or whether they “fade out” over time. Prior research in other interventions such as early childhood education and class size reductions suggest that there is considerable fade out of program effectiveness. Hence, the goal of this project is to explore the extent of fade out in teacher value-added impacts over time.

**Jenkins, Scott; Diana Haywood, and Terry Thompson. “Preparing the Quality Teachers for NC: Aligning Higher Education & K -12 Data Marts to Make Data Driven Decisions.”**

The purpose of this study is to collect information on undergraduate teacher education program success, retention of graduates/new teachers in the workforce, and how trends effecting the geographic distribution of these graduates can help drive UNC policy decisions and funding allocations among its institutions with teacher education programs to help improve teacher quality for the state of North Carolina.

The North Carolina Education Research Data Center (NCERDC) at Duke University plays an important role in the study by providing data on employment and performance for teachers in the workforce. The data from NCERC will be linked with UNC teacher education program completers using student data files collected by the system office. Using statistical methods, matched data sets will be analyzed to answer a set of core questions. These questions will allow examination of policies designed to address teacher preparation and mentoring in the University of North Carolina system. These policies will help insure the production of more highly qualified teachers to educate the future of North Carolina.


Since 2002, the federal No Child Left Behind (NCLB) Act has required every U.S. public school to test all students annually in grades 3-8 and holds each school accountable for their students’ achievement. An emerging concern about NCLB and the state accountability programs that preceded it is that educators may focus attention on students close to the proficiency targets to the detriment of students at other parts of the test-score distribution. The possibility that high-stakes testing may lead to rationing education rather than to an expansion of opportunity for all students provides the motivation for this study.

This empirical study uses rich student-level achievement data over time from the state of North Carolina to examine how accountability affects student achievement growth at different points in the achievement distribution. The availability of consistent test score data over time allows for careful modeling of student gains in test scores. With the use of student fixed effects that account for time invariant characteristics of students such as their ability, we estimate models to examine whether accountability has lead to higher gains for students in the middle of the pre-test-score distribution than for students at other points of the distribution. The study examines the effects of the accountability policies that affect schools under the national NCLB policy as well as under the state’s accountability program that preceded the federal program. The fact that the two programs rely on different approaches for judging the effectiveness of schools provides a particularly rich policy setting for this study.


Deployments and the accompanying increased pace of military life have placed stresses on Army children and families already challenged by frequent moves and parental absences. North Carolina bears a disproportionate level of this burden as home to one of the largest military complexes in the world. The
Army has asked RAND to examine the impact that parental deployment has on the academic achievement and school behavior of children of deployed Army soldiers, to examine the programs that are available to children and the gaps that currently exist, and to make recommendations on how the Army might improve their support of these children in the future. The research is to include school-age children of Active duty, Reserve and National Guard soldiers and possibly a comparison group of civilian school age children.

Smerdon, Rebecca and Jennifer Cohen. “North Carolina Math and Science Pipeline Study.” Project funded by the National Science Foundation.

This study explores the impact innovative high schools in North Carolina have on students’ progression and persistence through the mathematics and science pipelines as compared with traditional high schools. We propose to use North Carolina’s longitudinal, student-level data available from NCERDC to track rates of end of course proficiency through the mathematics and science pipelines both before and after the implementation of innovative reform efforts. We will determine if three types of high school reform approaches prolific in North Carolina and across the country are more effective at improving underrepresented students’ rates of successful course content mastery than traditional high schools using several rigorous statistical techniques. These high school types are Early College High Schools, replications of model high schools (e.g., Talent Development, High Schools That Work), and high schools transforming into theme-based small learning communities (including Science Technology Engineering and Mathematics [STEM] schools). In addition to analyses of the data available from NCERDC, we plan to administer surveys and conduct site visits in a sample of schools for an in-depth understanding of the policies, programs and practices in place in these schools and how they affect students’ progression through mathematics and science pipelines in these schools.
Student Research Projects Employing Data from the North Carolina Education Research Data Center

Projects approved or completed since March 2007 are indicated in bold text. Projects approved since March 2008 are marked with an *.

Minority Achievement Gap


Teacher Quality and Student Outcomes


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**Academic Performance of At-Risk Children**


**Problem Behavior in Schools**


**School Choice**


* Peterson, Michael. “Longitudinal Effects of Middle College.” Doctoral Thesis, Educational Psychology, University of North Carolina at Chapel Hill. Year?


**Other Studies**


**Abstracts of Recently Approved Student Projects**

**Baxter, Andrew.** “Smart Choices: The Creation of a Decision Support System for Parents Eligible to Exit a Substandard School under No Child Left Behind.”

We seek data to complete a dissertation project that creates, implements, and evaluates a decision support system, SmartChoice, designed to assist parents whose children are eligible to exit a substandard school under provisions of NCLB. This web-based program will use data provided by the Data Center to develop an algorithm to predict which schools in Charlotte-Mecklenburg (CMS) are most likely to maximize the child's academic growth given a parent's preferences and the schools' track record with children with similar demographic characteristics, skills, interests, and needs. Trained volunteers will work with parents in Charlotte's predominantly low-income West Boulevard Corridor to use the system and interpret the results. Data collected during the project will enable us to determine the key factors that predict whether an eligible family will exit the substandard schools, the factors most important for low-income parents in choosing a school, and whether the alternate schools offered by CMS are likely to increase the student's academic growth.

**Carruthers, Celeste.** “Teacher Mobility and Classroom Characteristics.”

Do teachers prefer more homogenous classrooms? How does the distribution of student performance affect teachers’ decisions to change schools? This project will use exceptionally rich data housed at the North Carolina Education Research Data Center to address these questions. A matched panel of North Carolina public school teachers, their classrooms, and their schools will be constructed for several recent years. A multinomial logit model will be used to estimate the probability of different types of teacher transfers, controlling for teacher qualifications, sending school characteristics, and sending classroom characteristics. This study will add to prior work in two ways: (1) the distribution of student performance on state-administered end of grade exams will be controlled for in addition to average student profiles and (2) teachers will be linked to their actual classrooms with reasonable accuracy. The effect of the spread of initial classroom performance on the likelihood of teacher transfers will be interpreted. Some specifications will consider the interaction of binary indicators for a classroom’s average performance (in terms of state deciles) with the variance of classroom performance.

**Carruthers, Celeste.** “Staffing Charter Schools.”

Charter schools are an important dimension of school choice, and their short- and long-term effectiveness has been debated at length in the popular and academic media. These discussions would be complemented by a better understanding of the characteristics of charter teachers and the staffing patterns of charter schools. I examine the qualifications and mobility patterns of charter school teachers, using ten-year panels of North Carolina schools, students, and teachers. Early results suggest that North Carolina's charter schools faced considerable staffing challenges. Teachers who moved to the charter system had on average lower qualifications than teachers who originated in similar schools but moved within the mainstream. New charters were staffed by new teachers at a much higher rate than new mainstream schools, but the difference faded as the schools aged. Finally, charters had persistently high turnover rates relative to mainstream schools.

**Cook, Daniella.** “Breaking the Silence: Models of Effective African American Teachers of Latino Students.”

In the last decade educators have been deeply engaged in a dialogue addressing inequities and discrepancies between Black and White student achievement. Teachers will play a significant role in achieving those laudable goals. Unfortunately, teachers can have either a positive or negative effect on
student outcomes. For example, teacher perception and prejudice may cloud their judgment and impact their behavior towards students (Tatum, 1997; Ladson Billings, 1994; Delpit, 1995). Teachers may make assumptions about students not from what they have been told or what they have seen on television or in books, but rather from what they have not been told (Tatum, 1997). This point is significant because most teachers now in the classroom and in teacher education programs are likely to have students from diverse ethnic, cultural, and racial groups in classrooms, during their careers (Howard, 1999). If teachers make assumptions about the academic potential of students based upon what they have not been told about the students in their classrooms it could result in lowered academic expectations and performance of those students. Both academic and policy-based research suggests that in order to successfully address the achievement gap between Whites and students of color teachers must be prepared to effectively teach an increasingly diverse student body. Thus, all teachers, regardless of their race and ethnicity, will have to examine their prejudices in order to be effective teachers of all students.

While North Carolina has an increasing Mexican immigrant population, the exact opposite is evident in the teaching force where we have witnessed a decline in teachers of color in public schools. According to the Department of Public Instruction (2003), in 2001-02, the total teaching force was 83% White, 15% Black and less than 2% racially classified as other, presumably Asian, Native American and Hispanic. If a student is going to have a teacher of color, that teacher will be more than likely African American. Given the centrality of student-teacher interactions in raising academic achievement, we must create a schooling environment that gives African American teachers the tools necessary to effectively teach Latino students.

The data available from the North Carolina Education Research Data Center will inform a larger dissertation project that seeks to provide useful information about, and practical guidance for, creating models of teaching that are effective for addressing the educational and academic needs of Latino students, with applicability for African American teachers.

* Cook, Jeremy. “The Effect of Previously Developed Peer Groups on Academic Achievement in North Carolina Public Schools.”

The study of peer effects in education is common in the current economic literature, with the majority of these studies focusing on the effects of current peer groups on individual achievement. Little discussion is given to the conceptual composition of these groups, other than race and gender. The relevant psychology literature recognizes that relative academic self-concept of students has an influence on motivation and academic outcomes. Early in grade school students are able to make academic comparisons and develop a concept of ranking amongst current peers. These comparisons may affect their concept of their own potential. This in turn may affect motivation and effort in school. The results from these studies suggest that peers with whom a student has previous shared academic experiences may have stronger influence on the current outcomes of students than other peer groups.

My research will examine how the academic outcomes of current peers with whom a student has had prior academic experiences affect the current academic outcomes for the student. I will use existing data from the NCERDC to identify current classmates with whom a student has shared previous classes.


I propose to use the NCERDC’s North Carolina school administrative data as part of my Master’s Project, which will be completed in April 2007. My master’s project addresses the following policy question: what realistic policy options exist for increasing racial diversity in North Carolina elementary schools?

I would like to use the data to model the effects of adopting a new assignment policy that seeks socioeconomic balance in elementary schools. I will reassign elementary school students within each sample district, with attention so socioeconomic status, proximity, and school capacity; the results of this
reassignment model will demonstrate the effect such a policy would have on racial and ethnic diversity in these schools.


The mathematics success of African-American students at a specialized secondary school depends not only on their mathematical ability, but a host of other factors. Mathematics success and building a strong mathematics identity for African-American students includes feeling confident about self-perceived ability, finding connections to the culture of mathematics, and having examples of successful African-Americans in mathematics. Once enrolled at a specialized secondary school, each student’s mathematics course history at their home school can determine the mathematics courses they are able to enroll in at the school. The proposed data analysis is a portion of a doctoral study highlighting the strategies employed by African-Americans at a specialized, residential high school.


The project attempts to measure the impact of a later start time in terms of increases in standardized test scores, and provide a plausible argument of causality. The dataset for this project will be constructed by merging test score and demographic data from the NCERDC with the start times of the Wake County Public School System. My empirical approach will utilize student level fixed effects which will allow me to identify the start time effect solely from changes in test scores of individual students. The data center’s role in this project would be to provide access to existing datasets that contain test score and demographic information.

Ewing, Katherine. “Estimating the Effectiveness of Special Education using Large-Scale Assessment Data.”

Concern over the quality of education provided for children with disabilities has been present for centuries. However, a lack of sufficient evidence exists to determine whether current special education programs result in academic achievement gains for students with disabilities. For my doctoral dissertation, I will utilize a new methodology for examining outcomes for such students.

The broad goal of the proposed study is to estimate the effectiveness of special education programs in the state of North Carolina by examining the scores of students with disabilities on large-scale assessments of academic achievement. The specific aims of the proposed study are two-fold. First, the proposed study will replicate the study conducted by Hanushek, Kain, and Rivkin (1998, 2002), which found that students with disabilities who transitioned out of special education programs demonstrated significantly greater gains on large-scale assessments of mathematics and reading comprehension than did students with disabilities who transitioned into special education programs. Second, this study will expand upon the analyses conducted by Hanushek et al. by: (a) using a more representative sample of students with disabilities, (b) using an alternate method for accounting for regression to the mean as a potential influence on students’ growth scores than the technique used by Hanushek et al., and (c) conducting additional analyses to estimate the extent to which the provision of test accommodations to students in special education could account for any positive effects found for special education programming.

Harris, Michael. “Implications of Segregation in Public High Schools.”

This study will aim to present information on enrollment trends and interracial interaction in public high school classrooms in Durham, Chapel Hill, and Wake County (Raleigh) in North Carolina and discuss racial segregation issues, specifically in schools using a tracking system. Tracking, at its core, is
the separation of students into different education sequences based upon their desire and capacity to learn. One of the main goals is to provide a classroom setting that caters to specific student needs and enhances their academic performances to best prepare them for what lies ahead after high school graduation. In most public high schools, tracking occurs in all major subject areas, including English, mathematics, social studies, and sciences.

While much prior research has focused on how tracking decisions are made and who is tracked, little has been studied regarding enrollment trends in tracked public high schools, and whether the segregation so salient in these schools is declining, continuing, or even increasing. This paper aims to combine this prior research and look at minority assignment in certain tracked and untracked high school subjects and classrooms.

Hanawalt, Emily. “Teacher Bonuses at Hillside and Southern High Schools.”

This project is being conducted for the Durham Public School (DPS) Office of Teacher Attraction and Retention, and aims to provide guidance regarding teacher incentives at Hillside and Southern High Schools. In part, this project will explore the relative importance of monetary and specific non-monetary factors on teacher satisfaction and teacher retention. Access to the Working Conditions Survey 2002 data will allow me to understand which school traits are identified as problem areas by Hillside and Southern teachers, and to examine how these perceptions differ by teachers’ educational experience. This information is particularly valuable as it allows schools such as Hillside and Southern to target their retention policies toward teachers with particular characteristics. Similarly, the survey data of teachers who received state-issued $1,800 bonuses will allow me to examine the relative (self-reported) importance of such incentives to teachers that Hillside and Southern may be particularly anxious to retain (e.g. experienced teachers, teachers in particular subject areas, etc). Finally, I hope to use data from the Public School Universe and School Report Card data for Durham’s Hillside and Southern High Schools. As I examine existing literature surrounding factors that influence teacher attraction and retention, data concerning the state of affairs (e.g. characteristics such as academic performance, pupil-teacher ratios, count of students by race, etc) at Hillside and Southern High Schools will help to contextualize existing and potential teacher retention policies.

Hatcher, Gabriel. “An Unintended Consequence: Are High Performing Students Being Negatively Impacted by No Child Left Behind?”

Under pressure from No Child Left Behind (NCLB), states have a strong incentive to address the academic performance of low performing students. To comply with NCLB, a school’s students must make adequate yearly progress, as determined by the state. Students are categorized by ethnicity, socioeconomic status, disability, and Limited English Proficiency, and each subgroup must reach proficiency on end of grade reading and math tests. As North Carolina works to meet the needs of these students, individual schools have implemented new programs and practices designed to foster student and teacher success within the new system of accountability. This study will focus on End of Grade reading scores in grades 3, 5 and 8 from 2001-2005 to examine whether these initiatives have focused so narrowly on the advancement of low performing students that the achievement of already academically successful students has been compromised. If so, we would expect to find that decreases in the proportion of low performing students is also matched by a decrease in the proportion of students performing at the highest level.


Identifying the determinants of teacher mobility and retention has been difficult for researchers due to the fact that teacher mobility decisions are affected by characteristics of the neighborhoods that
surround schools, and determined by teachers residential decisions. In order to break the link between school demographic characteristics and neighborhood characteristics I exploit the fact that Charlotte-Mecklenburg changed its school assignment policy in 2001 leading to changes in school demographics over time that are unrelated to changes in the demographics of the neighborhoods that surround the schools. Using teacher data to compare the change in teacher mobility and retention experienced by schools in Charlotte-Mecklenburg to those experienced by other high schools, one can isolate the changes in teachers’ mobility and retention changes that are solely due to changes in student demographic characteristics. Unlike estimates based on correlations between student characteristics and teacher mobility, using estimates derived from this source of variation can be used to predict how teachers will react to policies that change student demographics in schools such as school busing, school vouchers, and district consolidation. The North Carolina data is particularly rich, allowing one to look at the differences in response for different subpopulations of teachers, and also allows one to make predictions on the effect policies will have on teacher quality.


The initiation of substance use is a significant public health problem in adolescence, which peaks during the middle school years. Several theoretical frameworks offer explanations for such use among this age group, and empirical evidence suggests an inverse, bi-directional link between academics and substance use. The purpose of this study is to examine factors (parenting practices and ethnic identity) that may moderate these relations. These factors may be particularly salient for African American youth. I first will run a pilot study to examine these relations using NIDA Program II data through the Transdisciplinary Prevention Research Center. The current Program II data have self report of grades as a measure of academic achievement. In order to utilize a more objective measure of academic achievement, I would like to link the existing dataset with seventh and eighth grade reading level scores from the North Carolina Education Research Data Center. By using these data, I will be able to determine if parenting practices related to academics and ethnic identity serve as a buffer in the relations between achievement and substance use. I then will use this knowledge to develop questions addressing academic motivation and engagement, to determine if this same moderation can occur.

* King, Geoff. “Did North Carolina Local Education Agencies that offered at least one Learn and Earn High School improve student outcomes?”

North Carolina’s Learn and Earn Program, which was started in 2005, authorized community colleges, some four-year institutions, and local school boards to jointly establish innovative new high schools on college campuses. These new schools, modeled after others in the United States known as Early College High Schools (ECHSs), blend high school and college curriculum. There are currently a nation-leading 60 ECHSs in North Carolina, which are part of over 160 in 24 states nationwide. ECHSs provide a challenging curriculum, with a goal of having all students obtain both a high school diploma and two years of university transfer credit or an associate’s degree. Students enter ECHSs in 9th grade, are expected to complete coursework in 4-5 years, and are provided with a tuition free education. The program focuses on non-exceptional students, prioritizing those from disadvantaged backgrounds.

Despite promising objectives and innovative methods, there is little empirical evidence available to determine how these schools are performing. My research looks to provide a preliminary performance indicator for the program, which can help inform state officials and other researchers conducting more thorough long-term analyses. My analyses will attempt to assess the effects of offering the option to apply for admission to at least one Learn and Earn ECHS on overall LEA outcomes for 9th graders, utilizing a difference in difference model for statewide English I End of Course test scores.
During the past decade, school accountability has been a central focus of educational policy in the United States. In an effort to increase the public’s faith in the education system and improve student learning, policymakers have embraced a variety of reforms, including standardized testing and monetary incentives for teachers and schools. Yet such reforms may create distortions which undermine their effectiveness. Under a stronger accountability regime, teachers may become de-motivated, they may focus their attention on those students expected to improve the most while neglecting others, and they may migrate to schools with the highest perceived payoff, leading to allocative inefficiencies and more unequal outcomes within the education system.

In this research, we will explore the ways that accountability reforms affect the behavior of teachers, with a view to identifying possible refinements to existing policy. Specifically, we will focus on the high-stakes testing environment that North Carolina established and implemented for the 1996-97 school year. Under this accountability system, each teacher who works at a school satisfying specified growth targets in terms of student achievement receives a monetary bonus. Using North Carolina data on teachers, schools and students, our goal is to assess the impact of these performance based payments on the decision of teachers to remain in a given school and on their effort choice across classes and within the classroom. Unlike much of the prior literature that analyzes the consequences of high-stakes testing, we will construct a measure of teacher quality (or motivation) based on the effect individual teachers have on their students’ performance pre-reform. With this measure in hand, we will then analyze the effect of the introduction of high-powered incentives on the sorting of teachers of different qualities across schools, both in the short- and long-term. We will also assess whether bonuses reduce the intrinsic motivation of teachers and result in certain teachers shifting effort toward specific students in their classroom.

The preliminary goal of this project is to simultaneously estimate the preferences of both teachers for public schools and public schools for teachers using an equilibrium model of the teacher labor market. The broader goal is to use the model, once estimated, to gain insight into a number of outstanding questions in education research. Among them are: (1) What is the least costly way for the state to attract more teachers to the profession? (2) How quickly can a school change the quality of its teaching personnel? (3) Can student test scores on state standardized tests be a useful tool in school hiring decisions? (4) Is there preventable inefficiency in the hiring and transfer procedures used to match teachers to schools? To accomplish these goals, I must be able to observe equilibrium outcomes in each year (which teachers, with which characteristics, are teaching at which schools, with which characteristics). Furthermore, I need to observe a large labor market, so that when I do not observe a given teacher teaching in a given year, I can safely assume he/she has either quit teaching in the public schools or moved. Finally, I must be able to match student test scores to teachers in order to estimate an individual teacher’s ability to increase test scores (at least relative to other teachers at his/her school). This allows me to examine how quickly a teacher’s ability could be learned, and how well observable characteristics proxy for that ability.

The proposed study “Using Test Score Data to Project High School Graduation Rates” will explore the potentially causal link between ninth and tenth grade mathematics achievement and high school graduation, and how well mathematics test scores predict graduation. The study will be based on a 2004 ninth grade student cohort from North Carolina public schools, and follow the students until graduation in 2007. It will investigate if high school graduation rates and test score performance are

*Macartney, Hugh. “Motivated Agents in Education: The Impact of Accountability Reforms on Teacher Effort and Sorting.”


* Mischner, Stephanie. “Using Test Score Data to Project High School Graduation Rates.”
driven by the same school or student factors, what measureable student characteristics can be used as indicators to predict dropout, as well as how well graduates and non-graduates are set apart. To best simulate the hierarchical social structure of the student, family, classroom, school, school district and state, in which each individual student is embedded. I will use a generalized hierarchical linear model with three nested levels representing the student, student characteristics, and school characteristics.

Murray, Robert. “Age at School Entry – A Predictor of Student Outcomes.”

Much concern and soul searching goes into a parent’s decision when to start his or her child in school. This is especially true for children born between August 1 and October 15. Among the many factors influencing the success young children experience during their early years of schooling are the social and economic background of the child’s family and personal characteristics such as age, sex, race, degree of academic readiness, and degree of maturity. The educational theories and policies that have been developed over time have also changed public schooling. So as parents search for the best decision for their children they face many of the same questions that have been asked in early childhood education for years. After reviewing the history of kindergarten, after a look at the various theories, after a look at the curriculum changes over the years and after a look at school readiness, a parent may be no closer to making a better decision. Parents who decide to wade through the multitude of contradictory research on age and schooling may find that making a decision becomes even more difficult. Hopefully, the results of this dissertation will guide parents in making a more informed decision about when to start their child in school. This dissertation will attempt to determine if a problem exist when a child’s birth date falls close to the cut-off date for entry into kindergarten. North Carolina has a cut-off date of October 16 for entry into kindergarten and legislation will not allow most North Carolina counties to start school before August 25.

* Nash, Willette. “Multicultural Efficacy and Student Achievement.”

This study examines principal leadership, teacher multicultural efficacy and student achievement. It is argued that principals and teachers who are not only able to examine their beliefs with respect to multiculturalism, but also able to understand how their actions, associated with their belief systems, impact student achievement, will be in a better position to engage in more effective practice that results in positive student learning outcomes. In addition, the study hypothesizes that transformational principals operate out of levels of moral authority to achieve social justice and effect achievement for marginalized groups of students. The study also looks at the importance of organizational learning to the development and sustainability of multicultural efficacy and student achievement. Specifically, this study argues that multicultural efficacy is the result of the visionary leadership of transformational principals who establish learning environments which help their teachers become critically reflective practitioners. Efficacy, transformational leadership, and organizational learning, when taken together have the potential to develop multicultural efficacy, which in turn, can influence the achievement of poor black, brown, and linguistically diverse students. Multiple regression coefficients are calculated to examine achievement at the gateway years of 3rd and 5th grades across predictor variables of transformational school leadership, educators’ multicultural efficacy, student and educators’ race, class, gender, parents’ level of education, educator’s age, and educators’ years of experience; all of which are hypothesized to be predictive of student achievement. Results are subjected to the rigors of critical race theory through the method of autoethonography to bring more comprehensive insight to the overall inquiry. As a multicultural educator, a particular lens will be applied to the findings relative to the presence or absence of multicultural efficacy in schools and transformational leadership.

Nobles, Audrey. “Grade Configuration and the Achievement of 8th Grade Student on the NC EOG Tests in Reading and Mathematics.”
This study will examine the relationship between grade configuration and the achievement of eighth grade students on the North Carolina end of grade tests in reading and mathematics. A key issue is how to determine the organizational grade span structure that will improve and maximize student achievement. Specifically, the developmental scale scores in reading and mathematics of eighth grade students who attended a K-8 or 6-8 grade configured school from 2003 to 2005 is the focus of this study. Schools are held accountable for the performance of their students on the end of grade tests. Therefore, group mean developmental scale scores are important to educators for this reason. Student progress is measured based on the increases or decreases in mean developmental scale scores.


Teacher turnover rates in North Carolina have ranged from 10-14% annually over the past decade. With so many teaching positions needing to be filled annually, teacher turnover places a burden on administrators and school systems to find, attract and integrate large numbers of qualified replacements annually without a loss in the quality of services provided. Additionally, turnover leads to a loss of experience and lower returns on investment, in the form of teacher training, recruitment bonuses and mentoring.

The decision to leave a school or the teaching profession is a complex and personal one. Past research has sought to identify factors relating to both individual teachers and schools that can best predict whether a teacher is likely to make the decision to leave. Determining to what extent the influence of student demographic factors, such as race and family income, can be separated from non-pecuniary factors is a critical issue for policymakers and an avenue of much research related to teacher turnover. In 2001, a study found that 30% of teachers that chose to leave the teaching profession and 18% of those teachers who switched schools cited “student discipline problems” as one of their reasons for dissatisfaction (Ingersoll 2001). However, very few studies have examined school safety as a predictor of teacher turnover. The purpose of my research is to conduct secondary analysis of existing education data to determine to what extent changes in school safety conditions predict changes in teacher retention rates in North Carolina public secondary schools.

* Peterson, Michael. “Longitudinal Effects of Middle College.”

Purpose: To determine the impact of the Middle College High School (MCHS) in the Guilford County School District on student academic achievement, educational attainment, and postsecondary transitions. Participants: Records of six Middle College High School programs enrolling approximately 900 9th to 12th grade students in Guilford County, NC. Procedures: Secondary analysis of retrospective school district data (grade 3 through entry into Middle College High School) on the current cohort of MCHS students to examine the impact of program entry on academic achievement, attendance, disciplinary incidents, and course enrollments.


This proposal discusses estimation of peer effects, with a focus on Limited English Proficient Students (LEP) and the different effects they have on educational outcomes of natives. Specifically, the goal is to test if LEP students affect certain groups, based on race and gender, in a heterogeneous way. The immediate obstacle with identification is the sorting behavior of natives across schools that make casual indifference difficult. The source of “exogenous variation” used to identify these effects is the changing composition of LEP students with a school across adjacent grade levels. Beyond looking at a black-box effect, I will also identify an “endogenous” effect, which refers to the behavioral adjustment of an individual to the behavior of another social group. I will test if these endogenous effects are also
different for race and gender groups. This focus will increase our understanding of the mechanism through which peer effects are taking place, thus aiding policy makers with the integration of LEP students into public schools and the optimization of school resources. This is of particular importance to North Carolina and the South due to the continuing surge in immigrant population.

Scott, Elizabeth. “Preliminary Evaluation of Student U.”

For my Master’s Project, I will conduct a preliminary evaluation of the first year of an ongoing program called Student U. Student U. is a learning initiative designed to improve educational opportunities for disadvantaged students in Durham. The program has two missions. The first is to empower Durham middle school students to believe they can excel in an academic environment. The second is to motivate high school and college students (the program instructors) to pursue careers in public education or become advocates for children.

The main purpose of the preliminary evaluation of Student U. will be to determine which aspects of Student U. were successful. I will operationalize success in the first year by examining how well the program worked toward its mission. The second purpose of the evaluation will be to determine which components of Student U. were not successful. I will use this information to recommend changes to the program. In addition to conducting the preliminary evaluation, I will determine how Student U. should plan ahead in order to conduct more rigorous evaluations in future years.

Silver, Keith. “The Effect of the National Board for Professional Teaching Standards on Successful Candidates’ Teaching Effectiveness: Does Achieving Certification Make a Difference in Student Achievement?”

This study is a longitudinal investigation examining the effect of teachers obtaining National Board Certification has upon student achievement. Teachers from grades three through five who obtained certification in the Middle Childhood Generalist area will be studied over a three year period comprising the year before, the year during and the year after certification to examine the trend in student achievement as measured by North Carolina End-Of-Grade tests. The purpose of the longitudinal design is to concentrate on the professional development component of National Board Certification. Based on the premise that National Board Certification enhances teacher effectiveness (as measured by student achievement), this design examines the extent to which teachers become more effective at increasing student achievement as they move through the certification process. Using a matched pairs design, a similar group of non-certified teachers (based upon degree, certification, and teaching assignment) will be compared to certified teachers to examine the student achievement trends of non-certified teachers in relation to certified teachers. It is hypothesized that that certified teacher group’s student achievement scores will trend upward at a greater rate than the non-certified group.

Turner, Hollyene Celeste. “Predictors of Teachers’ Job Satisfaction in Urban Middle Schools.”

This study assessed the influences of certain school, teacher, and student characteristics on middle school teachers’ job satisfaction in the four largest urban school systems in North Carolina. The focus was on the influence of school variables (student achievement on end-of-grade reading and math tests, school size, and teacher turnover rates); teacher variables (years of teaching experience, licensure status, educational level, and attendance patterns); and student variables (percent of minority and percent of economically disadvantaged students proficient in reading and math) on teachers’ job satisfaction. The main hypothesis was that school, teacher, and student variables influenced teachers’ job satisfaction. This research utilized Frederick Herzberg’s motivation-hygiene theory wherein the context and the content of a teacher’s job determines his or her job satisfaction. This theoretical framework guided the selection of the North Carolina Teacher Working Conditions Survey (2002) as the instrument to examine middle school teachers’ perceptions of their work environments: time to plan lessons and work with colleagues,
principal leadership style, participation in professional development, condition of facilities and resources, meaningful inclusion in school decisions, and leadership’s acknowledgement of teacher’s decision-making skills. Based on Herzberg’s motivation-hygiene theory, the satisfaction of school employees provide information on the organizational effectiveness of the middle schools. Middle school teachers were chosen as the population for this study because of the trend of lower middle school achievement on state end-of-grade tests in reading, writing, and math (North Carolina School Report Cards, 2002). Also, very few middle schools in the four school districts chosen for this study made Adequate Yearly Progress (AYP) in 2002-03. In reviewing the aggregate results of the North Carolina Teacher Working Conditions Survey (2002), a higher percentage of middle school teachers were less satisfied with several aspects of their working conditions: school leadership, time, and facilities.


The use of ability grouping is prevalent in United States’ public schools, but the impact of this practice on student achievement is still hotly debated. Proponents of ability grouping argue that placing students in relatively homogenous classes allow teachers to present level-appropriate instruction for all students. In addition, supporters of ability grouping contend that having peers of similar ability positively impacts a student’s self esteem because it allows them to “fit in”. Opponents of ability grouping argue that the practice is detrimental to low-achieving students who would benefit from being placed in courses with their high-level peers. Using North Carolina education data, combined with data from the Advancement Via Individual Determination (AVID) program, I aim to evaluate the impact of intensified tracking on low-achievement students in regular-level courses. The AVID program is currently implemented in over 15% of North Carolina middle and high schools and works by providing motivated students a supported move from the academic middle to rigorous courses. After AVID implementation, the middle-level classes become more homogenized, centered at a lower level, because they have lost the more motivated students. In this context, I will evaluate the effect of intensified grouping on low-achieving students. Understanding the consequences and benefits of ability grouping is extremely important because, despite the lack of conclusive evidence, it is currently standard practice to group students by ability.


The achievement gap between minority and white students has become a major policy issue because of the No Child Left Behind Act. Charter school programs aim to better serve and raise achievement scores of students who are failing in the public school system. However, current research is inconclusive as to whether charter schools raise achievement and help minorities more than whites. This research uses achievement scores over several years to test whether charter schools in North Carolina, California, Florida and Texas are more effective than regular schools at closing the achievement gap. The results of the lag and gain score analyses show that the charter school effect varies by state. The charter school effect is positive for Hispanic reading achievement in California, positive for Hispanic math achievement in Florida, negative for white and Hispanic reading achievement in Texas and non-significant in North Carolina.

White, Carol. “The Effect of Teacher Certification on Student Achievement in High School Algebra 1 in North Carolina.”

This study examined the effect of highly qualified teachers on student achievement in high school Algebra 1 in North Carolina as measured by mean scores on the End-of-Course (EOC) Examination. The purpose of the study was to determine if there is a significant difference between achievement levels of
students with a highly qualified teacher and the achievement levels of students with a non-highly qualified teacher in high school Algebra 1 in North Carolina. The two years of this study, 2003-2004 and 2004-2005, were prior to the June, 2006 deadline under No Child Left Behind which required that school systems hire highly qualified teachers. During the years of this study both highly qualified and non-highly qualified teachers were permitted emergency, temporary, lateral entry and provisional licenses to teach. After June 2006 provisional, temporary and emergency licenses were granted.

In this study an analysis of variance was conducted to determine if the achievement levels of students with highly qualified teachers were statistically different than students with a non-highly qualified teacher. All data relating to teachers highly qualified status and student’s academic achievement was collected from the database at the North Carolina Education Research Data Center (NCERDC) at Duke University after seeking and obtaining approval from East Carolina University’s Institutional Review Board.

* Zajonc, Tristan. “Dynamic Treatment Regimes in Education.”

Education policy can be viewed as a dynamic treatment regime—an adaptive set of policies that determines “treatment” in each period. Educators seek to assign children the optimal course of study, conditional on their past coursework and observed progress. This focus on dynamic policies contrasts sharply with the static “treatment effect” framework that dominates the education program evaluation literature. Empirical analysis of treatment sequences poses difficulties for standard program evaluation techniques because time-varying covariates are simultaneously confounders and intermediate outcomes. Using data from North Carolina, this proposal—Dynamic Treatment Regimes in Education: Evidence from North Carolina—seeks to explore strategies for estimating the impact of dynamic treatment regimes from observational administrative data. Research questions include the dynamic effect of teachers and optimal teacher assignment, optimal dynamic grade retention policies, and optimal special education (IEP) policies, among others. By demonstrating empirical techniques for estimating the effect of treatment sequences and regimes, this proposal has the potential to widen the domain of research that can be conducted on NCERDC data.

* Zota, Rita. “Do Ninth Grade Academies Improve Achievement and Attendance?”

Research shows that a critical juncture for a high school student occurs in ninth grade as he transitions to high school (Reents 2002). Sixty percent of students identified as “at-risk” upon entering high school, drop out or do not graduate on time (Mizelle and Irwin 2000). Although dropout occurs at every grade level, most students who drop out make the decision to do so in ninth grade (Morrison and Legters 2001). Ninth graders have the highest failure rate and the highest risk of dropping out due to that academic failure. Furthermore, ninth graders have the lowest grade point averages and the highest number of discipline referrals (Reents 2002).

Due to the critical nature of transition from middle to high school and the long-term implications of maladjustment during ninth grade, it is imperative that education leaders seek solutions to deal with this problem. One strategy that many educators are experimenting with is the use of ninth grade academies, a type of small learning community (SLCs). An SLC is a form of school structure that subdivides a large population of students into smaller autonomous groups of students that share the same group of teachers. The purpose of my research is to determine the effect of ninth grade academies on student achievement and attendance.
APPENDIX D

Papers and Presentations Employing Data from the North Carolina Education Research Data Center

Presentations and publications since March 2007 are in bold text; the most recent are marked with *.

**Minority Achievement Gap**


**Tyson, Karolyn, William Darity, Jr., and Victor Wang. 2008. “Giftedness and Black-White Achievement Gap.”** Where was this presented/published?


**Teacher Quality and Student Outcomes**


Goldhaber, Dan. 2006. “National Board Teachers are More Effective, but are they in the Classrooms Where They’re Needed the Most?” Education Finance and Policy 1(3): 372-383.


**School Accountability and Choice**


Jones-Sanpei, Hinckley A. 2006. “Racial and Socioeconomic Segregation in a District with Controlled School Choice.” Paper presented at the Association for Public Policy Analysis and Management Fall Research Conference, Madison, WI.

Ladd, Helen F. 2003. “School Vouchers and Student Achievement: What We Know So Far.” *Center for Child and Family Policy, Policy Brief*, 3(1).


*The Academic Performance of At-Risk Children*


**Problem Behavior in Schools**


**Linking Data and Policy**


**Other Studies**


Abstracts of Recent Papers and Publications


Using detailed administrative data for the public K-12 schools of North Carolina, we measure racial segregation in the public schools of North Carolina. With data for the 2005/06 school year, we update previously published calculations that measure segregation in terms of unevenness in racial enrollment patterns both between schools and within schools. We find that classroom segregation generally increased between 2000/01 and 2005/06, continuing, albeit at the slightly slower rate, the trend of increases we observed over the preceding six years. Segregation increased sharply in Charlotte-Mecklenburg, which introduced a new choice plan in 2002. Over the same period, racial and economic disparities in teacher quality widened in that district. Finally, we compare our basic measure to two alternative measures of segregation.


Extant literature, while sparse, suggests that the relationships between such peer evaluations and status-relevant behaviors such as aggression and academic involvement and achievement may not be invariant across racial-ethnic groups. Studies have demonstrated that preference is associated with both concurrent and later academic achievement among elementary school children but that this relation changes as youth transition into middle school and early adolescence. Too, several studies suggest that peer-perceived popularity is a risk factor for adolescent academic disengagement, especially among the subset of popular youth who are also aggressive. However, in the few studies that have examined these constructs among homogenous minority-group samples or among heterogeneous samples that also allow for cross-group comparisons, the relationships between popularity, aggression and academic disengagement are not as clear cut. The proposed study utilizes the racially-balanced Program II school-based sample of grade 7-9 students to examine peer-perceived popularity and social preference, or liking, aggression, and academic involvement/achievement. Whereas the prog II data set is rich in peer nomination and network data, it does not have a consistent measure of academic achievement and we currently rely upon participation in academic subject clubs as our measure of academic involvement. Working with the North Carolina Education Research Data Center will allow the authors to construct a measure of academic achievement at several time-points with the use of EOG scores for math and English and to more accurately operationalize academic involvement for the purposes of the study.


The current study is an attempt to investigate the racial achievement gap by focusing on two popular school programs: gifted programs, advanced placement (AP) courses. Our goal is to understand the role of these programs in the context of the racial gap in academic achievement by examining the performance of students from 3rd grade to 12th grade. In this study, we focus on four specific steps where these school programs can influence students’ academic performance.


This paper reports descriptive findings on the stability of measured teacher effectiveness.
Using a unique longitudinal dataset from North Carolina that includes the records of virtually all teachers and students in North Carolina, we estimate various measures of teacher effectiveness using different specifications of a value-added education production function model. We then compare these different estimates of teacher effectiveness to one another and use them to assess the extent to which measures of teacher value-added vary over time, and across subjects and teaching contexts. We find average correlations of 0.3 in reading and 0.5 in math in year-to-year estimates of teacher effectiveness, and cross-subject correlation that averages near 0.5. Chi-squared tests support the notion of some stability with these effectiveness measures; however, the year-to-year variation is greater than what is predicted were random error the only unstable component, implying that teacher job performance does vary over time.

Not surprisingly, having more information about teachers in the form of larger classes or additional years of matched teacher-student data increases the precision of estimated teacher effects, but various investigations show the change in rankings that result from introducing more student observations within a class are generally small—fewer than 10 percent of teachers move their relative rankings by more than one quintile equivalent in math. Introducing more information from a successive year of teaching, however, has a considerable impact on relative rankings—in this case, close to 50 percent of teachers change relative rankings by more than one quintile equivalent in math.

We conduct additional investigations into the stability of estimated effectiveness focused around other variations within the context of teaching: before and after obtaining tenure, before and after transferring schools, across various student demographics, and at different points along teachers’ career paths. Generally, we find estimated effectiveness in math is considerably more stable over time than in reading; however, estimates did not support the notion of “stable” performance over time in either subject.


In this paper, we describe the results of a study assessing the relationship between the certification of teachers by the National Board for Professional Teaching Standards (NBPTS) and elementary-level student achievement. We examine whether NBPTS assesses the most effective applicants, whether certification by NBPTS serves as a signal of teacher quality, and whether completing the NBPTS assessment process serves as a catalyst for increasing teacher effectiveness. We find consistent evidence that NBPTS is identifying the more effective teacher applicants and that National Board Certified Teachers are generally more effective than teachers who never applied to the program. The statistical significance and magnitude of the “NBPTS effect,” however, differs significantly by grade level and student type. We do not find evidence that the NBPTS certification process itself does anything to increase teacher effectiveness.


In this paper, we use a unique data set that includes a panel of all teachers in North Carolina over a 4-year period (1996–1997 through 1999–2000) to describe the distribution of teachers certified by the National Board for Professional Teaching Standards (NBPTS) across classrooms, schools, and districts. The sorting of National Board Certified Teachers (NBCTs) across students is an important equity issue both because these teachers are thought to be exceptionally qualified teachers and because in North Carolina (and many other states) state-level financial incentives are provided to NBCTs, creating an implicit subsidy to those districts and schools where they are employed. Our findings on the sorting of NBCTs across districts, schools and students reflects the research on the distribution of teacher credentials across students: the most disadvantaged districts, schools, and students are least likely to have access to those teachers who are recognized by NBPTS as being exceptionally qualified teachers.
Research on teacher attrition has fueled concerns about retaining high quality teachers. Evidence suggests that the most academically proficient teachers are the most likely to leave the profession (Murnane & Olsen, 1989, Podgursky, Monroe, & Watson, 2004). When this is considered in light of the positive correlation between teachers’ academic proficiency and student achievement (Clotfelter, Ladd, & Vigdor, 2007; Goldhaber, 2006), it is tempting to conclude that public schools are losing their best teachers. However, many challenge the value of traditional quality indicators instead favoring teacher value-added measures. Using a variety of teacher value-added measures to explore the mobility of teachers, we found that the most effective teachers tended to stay in teaching and stay despite challenging school contexts.


Certification from the National Board of Professional Teaching Standards (NBPTS) represents a significant policy initiative for the nation’s public school teachers as outlined in the No Child Left Behind Act. This paper analyzes how obtaining NBPTS certification impacts teachers’ career paths. Using a competing risks model on data from North Carolina public schools, we find evidence suggesting that National Board Certified Teachers (NBCTs) exit the school, district, and state more frequently than others. These findings are robust to instrumental variables and other tests for robustness. We also employ regression discontinuity methods that support these conclusions, and use this design for further inquiry into the characteristics of teaching assignments for certified teachers relative to unsuccessful applicants. With these tests, we find only limited evidence that NBCTs might utilize the credential to select into teaching assignments with relatively fewer minorities in the student population.


Virtually all states require teacher candidates to undergo teacher testing as a prerequisite to participation in the public school teacher labor market. This paper analyzes the role of teacher licensure tests in shaping the demographic composition of the workforce and its subsequent effect on student achievement. Using a dataset on public school teachers in North Carolina, we find minorities in the teacher labor market have substantially lower performance on licensure tests, but find mixed evidence on whether these performance differences impact student achievement. It appears that utilizing teacher-testing policies in general screens out disproportionately more minorities from the teaching profession, though their quality as teachers may potentially be higher than their counterparts. Further, holding all other teacher characteristics constant, we find the Praxis II exams, which are utilized heavily in teacher-testing policies, generally under-predict minority (and specifically African American) teachers’ performance. We further analyze and discuss the resulting impacts these policies have on student outcomes.
I propose a generalization to the standard career concerns model and apply it to the public teacher labor market. In particular, this model provides three testable hypotheses: optimal teacher effort levels decline with experience all things equal, optimal effort declines with tenure at a particular school, and teachers shirk as incentives break down at the end of a teacher’s career or tenure. Using administrative data from North Carolina spanning 13 school years through 2007, I find significant changes in teacher absenteeism consistent with the generalized career concerns model. These findings are robust to various empirical specifications, showing consistent within-teacher behavioral changes. I also investigate the effects of career concerns incentives breaking down, and find evidence suggestive of teacher shirking. While the career concerns effect is compounded with a learning curve early in a teacher's career, I find shirking among exiting teachers is significantly predictive of negative outcomes in student testing.

Growing concerns over the achievement of U.S. students have led to proposals to reward good teachers and penalize (or fire) bad ones. The leading method for assessing teacher quality is "value added" modeling (VAM), which decomposes students' test scores into components attributed to student heterogeneity and to teacher quality. Implicit in the VAM approach are strong assumptions about the nature of the educational production function and the assignment of students to classrooms. In this paper, I develop falsification tests for three widely used VAM specifications, based on the idea that future teachers cannot influence students' past achievement. In data from North Carolina, each of the VAMs' exclusion restrictions are dramatically violated. In particular, these models indicate large "effects" of 5th grade teachers on 4th grade test score gains. I also find that conventional measures of individual teachers' value added fade out very quickly and are at best weakly related to long-run effects.

Using evidence from Durham, North Carolina, we examine the impact of school choice programs on racial and class-based segregation across schools. Theoretical considerations suggest that how choice programs affect segregation will depend not only on the family preferences emphasized in the sociology literature but also on the linkages between student composition, school quality and student achievement emphasized in the economics literature, and on the availability of schools of different types. Reasonable assumptions about how these factors differ for students of different races and socio-economic status suggest that the segregating choices of students from advantaged backgrounds are likely to outweigh any integrating choices by disadvantaged students. The results of our empirical analysis are consistent with these theoretical considerations. Using information on the actual schools students attend and on the schools in their assigned attendance zones, we find that schools in Durham are more segregated by race and class as a result of school choice programs than they would be if all students attended their geographically assigned schools. In addition, we find that the effects of choice on segregation by class are larger than the effects on segregation by race.
Durham, NC, is a large, countywide district that, like many urban districts across the country, combines geographic attendance zones with a variety of parental choice programs. Using administrative data that includes addresses for individual students, we examine whether the likelihood of opting out of one’s geographically assigned school varies across different groups defined by race, parent education level, and student achievement. We also examine how the characteristics of a student’s geographically assigned school and the characteristics of nearby school choice options influence the likelihood of opting out. Finally, we compare the peer composition in neighborhood schools to what the peer composition in those schools would be if all students attended their neighborhood schools. We find that school choice programs in Durham have allowed higher achieving schools to cream-skim educationally advantaged students from many neighborhood schools. Although, cream-skimming has only small effects on the peer composition of non-choosers on average, schools with concentrations of disadvantaged students and schools located near choice schools attractive to high achievers are particularly hard hit by cream-skimming.


Giving parents a choice among schools within their district is one of the most widely used school assignment policies in the United States. Coupled with standardized testing, public school choice is a key component of the school accountability movement and was institutionalized nationwide through the provisions of the 2001 No Child Left Behind Act (NCLB). Three interrelated expectations underlie the policy. First, choice will increase allocative efficiency by encouraging schools to differentiate their products and allowing parents to choose the curriculum and pedagogy most appropriate for their children. Second, choice encourages technical efficiency by forcing schools to compete. This competition pushes schools to adopt more efficient production methods. Third, choice promotes equity by allowing students who reside in areas served by poorly performing schools to enroll in better schools. This paper evaluates the logic and empirical evidence concerning these expectations.


This paper explores the relation between school performance and dropout rates under North Carolina’s accountability system. We evaluate competing hypotheses. The first posits that accountability systems help all students succeed by increasing test performance and decreasing dropout rates. The alternative hypothesis states that accountability systems give schools incentives to encourage difficult students to leave. By “pushing out” these students, schools can increase their overall test performance. Utilizing data on every dropout in the state, we examine the relation between changes in dropout rates and changes in the schools’ academic performance. Using a fixed-effects model clustering schools within years, we find that schools improve test performances when dropout rates rise; they add to their overall composite by subtracting problematic students.


Although the federal No Child Left Behind program judges the effectiveness of schools based on their students’ achievement status, many policy analysts argue that schools should be measured, instead, by their students’ achievement growth. Using a ten-year student-level panel dataset from North Carolina, we examine how school-specific pressure associated with the two approaches to school accountability affects student achievement at different points in the prior-year achievement distribution. Achievement
gains for students below the proficiency cut point emerge in response to both types of accountability systems. In contrast to prior research highlighting the possibility of educational triage, we find little or no evidence that schools in North Carolina ignore the students far below proficiency under either approach. Importantly, we find that the status, but not the growth, approach reduces the reading achievement of higher performing students, with the losses in the aggregate exceeding the gains at the bottom. Our analysis suggests that the distributional effects of accountability pressure depend not only on the type of pressure for which schools are held accountable (status or growth), but also the tested subject.


Using administrative data on public school students in North Carolina, we find that sixth grade students attending middle schools are much more likely to be cited for discipline problems than those attending elementary school. That difference remains after adjusting for the socioeconomic and demographic characteristics of the students and their schools. Furthermore, the higher infraction rates recorded by sixth graders who are placed in middle school persist at least through ninth grade. An analysis of end-of-grade test scores provides complementary findings. A plausible explanation is that sixth graders are at an especially impressionable age; in middle school, the exposure to older peers and the relative freedom from supervision have deleterious consequences. These findings are relevant to the current debate over the best school configuration for incorporating the middle grades. Based on our results, we suggest that there is a strong argument for separating sixth graders from older adolescents.


Childhood lead poisoning remains a critical environmental health concern. Low-level lead exposure has been linked to decreased performance on standardized IQ tests for school-aged children. This study seeks to determine whether blood lead levels in early childhood are related to educational achievement in early elementary school as measured by performance on end-of-grade testing. Educational testing data for fourth grade students from the 2000-2004 NC Education Research Data Center were linked to blood lead surveillance data for seven counties in NC and then analyzed using exploratory and multivariate statistical methods.

The discernible impact of blood lead levels on end-of-grade testing is demonstrated for early childhood blood lead levels as low as 2 μg/dL. A blood lead level of five is associated with a decline in EOG reading (math) scores that is roughly equal to 15% (14%) of the interquartile range, and this impact is very significant in comparison with the effects of covariates typically considered profoundly influential on educational outcomes. Early childhood lead exposures appear to have more impact on performance on the reading rather than the math portions of the tests.

Our emphasis on population level analyses of children who are roughly the same age linked to previous (rather than contemporaneous) blood lead levels using achievement (rather than aptitude) outcome complements the important work in this area by previous researchers. Our results suggest that the relationship between blood lead levels and cognitive outcomes are robust across outcome measures and at low levels of lead exposure.
In a variety of important domains, there is considerable correlational evidence suggestive of what are variously referred to as social norm effects, contagion effects, information cascades, or peer effects. It is difficult to statistically identify whether such effects are causal, and there are various non-causal mechanisms that can produce such apparent norm effects. Lab experiments demonstrate that real peer effects occur, but also that apparent cascade or peer effects can be spurious. A curious feature of American local school configuration policy provides an opportunity to identify true peer influences among adolescents. Some school districts send 6th graders to middle school (e.g., 6th-8th grade "junior high"); others retain 6th graders for one additional year in K-6 elementary schools. Using administrative data on public school students in North Carolina, we have found that sixth grade students attending middle schools are much more likely to be cited for discipline problems than those attending elementary school, and the effects appear to persist at least through ninth grade. A plausible explanation is that these effects occur because sixth graders in middle schools are suddenly exposed to two cohorts of older, more delinquent peers.


This set of two studies investigates the high school and college outcomes of middle school students who participated in a summer residential program for the academically talented, using a control group of qualified students who did not attend such a program. Through their participation in a 7th grade talent search in 1996-97 the students qualified to attend a summer program at Duke University’s Talent Identification Program (TIP). Of the North Carolina students in this group, 141 (72 female) attended at least one summer program in middle school (7th and 8th grades). The control group consisted of 2,649 students from the state of North Carolina who had qualified for but did not attend a summer program at TIP in middle school. The two groups did not differ significantly on gender, parent education level, or ethnicity. For Study 1, the students’ high school end-of-course (EOC) standardized test scores were obtained from state public school records and compared across the two groups in a series of multiple regression analyses by subject area. Results showed that the effects of summer program on high school achievement appear to depend on the subject area and the students’ level of qualification. For Study 2, surveys were mailed to program participants (N= 92) and non-participants (N=184) from the same talent search cohort to assess students’ high-school coursetaking, GPA, college major, and educational aspirations. Some associations were found between program participation and later academic choices.


Longitudinal self-report data from 4,071 students are used to examine the degree to which students’ perceptions of their social environments (people and places) are associated with changes in three school success outcomes: school engagement, trouble avoidance, and grades. Specific variable dimensions within the neighborhood, peer, and family domains had significant effects on one or more of these school outcomes. Implications of the findings for further research and intervention practice are discussed, including the availability of a Web-based resource for linking these findings with evidence-based intervention and prevention strategies.

The Andrew W. Mellon Foundation is trying to understand how low-income students and their parents make decisions about college and how their pre-college characteristics interact with the college environment to shape outcomes, including graduation rates. Please see attached “General Notes” for a fuller description of motivation and guiding questions. The data (including personal identifiers), to which only the individuals specified in the attached document “College & Beyond Database,” below, will have access, will be stored on secure networked drives in Mellon’s offices in accordance with the attached “Information Security Plan.” The project is part of the larger College & Beyond study more fully described in the attachment below. The stripped data will become part of the expanded College & Beyond database. Procedures governing that database are also described in the “College & Beyond” section below.

The project has been ongoing since October 2005. The bulk of the last year was spent collecting data for the project from other universities. Around a quarter of the data was just received in the last few months. Currently, the project is in the preliminary analysis stage. Early results have shown a strong, positive, monotonic relationship between graduation rates and income quartiles. This correlation holds across race, ethnicity, and SAT/ACT scores. Also, some work has been done employing hazard rate analysis to observe the determinants of the probability of students dropping out across semesters.

*Edmunds, Julie, Elizabeth Glennie, and Larry Bernstein. 2008. “Early Results and Methodological Issues from an Experimental Study of Early College High Schools Symposium.”

Funded by a four-year grant from the Institute of Education Sciences, the Study of the Efficacy of the Learn and Earn Early College High School Model is a longitudinal, experimental study that will examine the impact of the Early College High School model on student outcomes and will associate aspects of program implementation with specific outcomes. This session includes four presentations that present early results from the study as well as methodological issues that have been encountered. The four presentations include: an overview of the study and model; a discussion of the development and piloting of an instrument to measure attitudinal and behavioral outcomes; early student outcomes from one school that used random assignment prior to the study; and proposed analysis strategies for dealing with the issue of endogenous outcomes that impact student achievement.


Researchers conducting non-experimental studies of panel data often attempt to remove the potentially biasing effects of individual heterogeneity through the inclusion of fixed effects. I evaluate so-called “Value Added Models” (VAMs) that attempt to identify teachers’ effects on student achievement. I develop falsification tests based on the assumption that teachers in later grades cannot have causal effects on students’ test scores in earlier grades. A simple VAM like those used in the literature fails this test: 5th grade teachers have nearly as large effects on 4th grade gains as on 5th grade gains. This is direct evidence of non-random assignment. I use a correlated random effects model to generalize the test to more complex estimators that allow for tracking on the basis of students’ permanent ability. The identifying restrictions of these estimators are again rejected. Teacher assignments evidently respond
The purpose of this report is to provide the North Carolina Department of Public Instruction (NCDPI) with information about teachers’ responses to School-wide Positive Behavioral Support (PBS) and key educational outcomes on students in North Carolina elementary schools implementing School-wide (PBS). A web-based survey of teachers at eight elementary schools implementing School-wide positive behavior support according to national criteria was administered to assess teacher response to School-wide PBS. Data from the North Carolina Education Data Center was used to assess student outcomes related to academic performance, school suspensions, and teacher turn-over rates in the eight study schools compared with 264 NC elementary schools that had started School-wide PBS.


The Teach for America (TFA) program selects graduates from the most competitive undergraduate institutions and, after a short intensive training program, places them as teachers in the lowest-performing schools in the country. The few studies that have examined the effectiveness of TFA have focused on the elementary and middle school level. The findings have been somewhat mixed by grade level, subject and comparison group, but the studies with the strongest designs show some positive effects on student learning relative to traditional teachers.

The research here is based on the first study that examines TFA effects in high school. We estimate TFA effects with a rich longitudinal dataset from North Carolina that allows us to examine student test performance over time and to link students to their teachers. Looking at years 2001-2006, we focus on 23 school districts that have at least one TFA teacher in any of these years. We conduct a series of student and school fixed-effects models that take advantage of multiple end-of-course exam scores for students.

We find that TFA high school teachers have a positive effect relative to other high school teachers, including other teachers who are certified in-field. The findings are particularly strong for math and science teachers. Moreover, the findings suggest that the TFA effect exceeds the impact of additional years of experience. The findings are informative to policy debates on teacher recruitment and retention, as we discuss in the concluding section of the paper.