



Office of the District of Columbia Auditor

Evaluation of the DC Public Education Reform Amendment Act (PERAA)

July 15, 2013

The Education Consortium for Research and Evaluation (EdCORE)



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Report No. 1: School Year 2010-2011
Submitted to the DC Auditor
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The Education Consortium for Research and Evaluation (EdCORE) is led by the Graduate School of Education and Human Development at the George Washington University, in partnership with American Institutes for Research, Mathematica Policy Research, Policy Studies Associates, Quill Research Associates, and RAND.

About EdCORE

EdCORE is a consortium led by the Graduate School of Education and Human Development of the George Washington University in partnership with American Institutes for Research (AIR), Mathematica Policy Research, Inc. (MPR), Policy Studies Associates (PSA), Quill Research Associates, and RAND.

EdCORE was established in 2012, in response to the National Research Council's recommendation for a sustainable program of independent research and evaluation.* Our mission is to provide objective and reliable evidence to inform continuous improvement of public education, at all levels, in the District of Columbia.

The current EdCORE portfolio, of which this PERAA report series is a part, includes research on changes in special education policies; and science, technology, engineering, and mathematics (STEM) course taking in DC schools. Future studies of teaching, learning, and school governance are planned.

* See: National Research Council, *A Plan for Evaluation the District of Columbia's Public Schools: From Impressions to Evidence*, Washington: National Academies Press, 2011.

Foreword

This report is the first in a new series responding to the mandate for independent evaluation included in the District of Columbia's Public Education Reform Amendment Act (PERAA) of 2007. In accordance with a request from the DC Auditor on behalf of the DC government, as specified in its contract with the National Academy of Sciences (NAS), the report pertains primarily to the 2010-2011 school year.

The report was prepared by EdCORE under a subcontract to the NAS, and is organized according to the four broad topics mentioned in PERAA and further refined by the DC Auditor:

- *Business practices and strategies*, including organizational structure and roles, financial management, operations management, facilities and maintenance; resource allocations; public accountability; interagency collaboration; and stakeholder engagement and responsiveness.
- *Human resources operations and human capital strategies*, including the number (and percentage) of highly qualified teachers; retention rate for effective teachers; schools and wards served by effective teachers; length of time principals and administrators serve; types of leadership strategies used; and responsibilities of central office versus school level leadership.
- *Academic plans*, including integration of curriculum and program specific focus into schools and grade progression and credit accumulation.
- *Student achievement*, including a description of student achievement that includes academic growth; proficiency; and other (non-academic) educational outcomes.

The scope of the auditor's information request indicates the variety of ways to evaluate the district's progress. The 2010-2011 snapshot, along with a description of selected indicators of student achievement between 2006-2007 and 2010-2011, though informative, is not sufficient to fully describe PERAA implementation or infer trends or their causes. Because this report is the first of a series, and focuses primarily on a single year of data, we include Questions for Further Analysis.

Subsequent reports will cover other periods: each one will provide a snapshot of selected events and indicators for a given school year along with a trend analysis of one or more of the topics mentioned in PERAA. A summative report that will look across the years covered in this series will be prepared by the NAS Committee for the Five Year (2009-2013) Summative Evaluation of the District of Columbia Public Schools and released in 2014.

Although this report includes achievement data from prior years, it would be imprudent to assume any linear trends or to attribute observed differences between 2007 and 2011 to the enactment and implementation of PERAA. Causal inferences of this sort cannot be established without substantially more information and statistical analysis. The report will emphasize this caution to avoid misunderstandings or premature interpretations.

In addition, it is important to note that as this first report was being drafted, questions arose about the validity and reliability of student achievement test scores in the District, because of alleged breaches of test security. *These questions make it imperative to view results that pertain to student achievement with caution.*

In addition to the direct support of the DC government through the NAS, the work reported here was supported indirectly by funds from a combination of public and private organizations that have helped create and build the EdCORE consortium. The National Science Foundation, an early supporter of the consortium as an innovation in the evaluation of urban education reform, provided a grant for general support and in-depth analysis of STEM course taking (which is not part of the PERAA mandate and is not covered in this report). We are grateful to Janice Earle and her colleagues for their enthusiastic help.

We also wish to thank GW Vice President for Research, Leo Chalupa, and Provost Steven Lerman, for their institutional support, without which it would not have been possible to fulfill the demands of the PERAA evaluation and related activities. Current and past faculty of the Graduate School of Education and Human Development (GSEHD), including Rebecca Thessin, Sam Steen, Josh Glazer and Marian Robinson provided important input at various stages of the consortium's development. Taunya Nesin has been an extraordinary graduate research assistant.

In addition, we thank the American Institutes for Research (AIR), and David Myers, its President, for unwavering support—through grants and in-kind contributions to the new enterprise. Former AIR President Sol Pelavin was an enthusiastic supporter of the concept and early work of the National Research Council study, and contributed human and financial resources, for which we continue to be grateful. We thank also Katherine Bradley (CityBridge Foundation), and Judy and Peter Kovler for their generous financial support. Other members of the GSEHD National Council, in particular Elizabeth Perry, Ed Vest, and Gene Rotberg, are avid supporters of all our work.

We are especially grateful to our colleagues at the NAS – Stuart Elliott, Alix Beatty, and committee co-chairs Lorraine McDonnell, and Carl Cohn – for their confidence in EdCORE to conduct the mandated analyses and for their wise counsel on matters technical and stylistic. Their comments on earlier drafts of the report contributed to its improvement, but EdCORE remains solely responsible for its contents.

Finally we wish to thank DC Auditor Yolanda Branche and Deputy Auditor Lawrence Perry for their consummate professionalism and gracious management of the contracting process.

This report was written by a team from EdCORE. Brenda Turnbull, Principal of Policy Studies Associates, with researchers Erikson Arcaira, Stephen Coleman, Jaclyn MacFarlane, and Andrea Palmiter, led the analysis of business practices and strategies (section 1) and academic plans (section 3). Elias Walsh, Researcher at Mathematica Policy Research, with Steven Glazerman, Senior Fellow, took the lead on human resources operations and human capital strategies (section 2). Umut Ozek and Erin Dunlop, researchers at the AIR/National Center for Analysis of Longitudinal Data in Education Research (CALDER), with Jane Hannaway, Vice President, analyzed the student test data (section 4). Beatrice Birman (AIR) and Jennifer Steele (RAND) provided invaluable commentary and editorial contributions. Maxine Freund and Taunya Nesin (GW) provided technical, logistical, and conceptual support at all phases of the work. The deft handling of contractual matters by Viola Horek (of the NRC) and Christine Tomasik and Charles Maples (of GW) is much appreciated.

We thank the EdCORE partners for their patience, perseverance, and extraordinary contributions of time and energy. They are exemplars of the very finest and most generous traditions of social scientists coming together for the public good.

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Section I

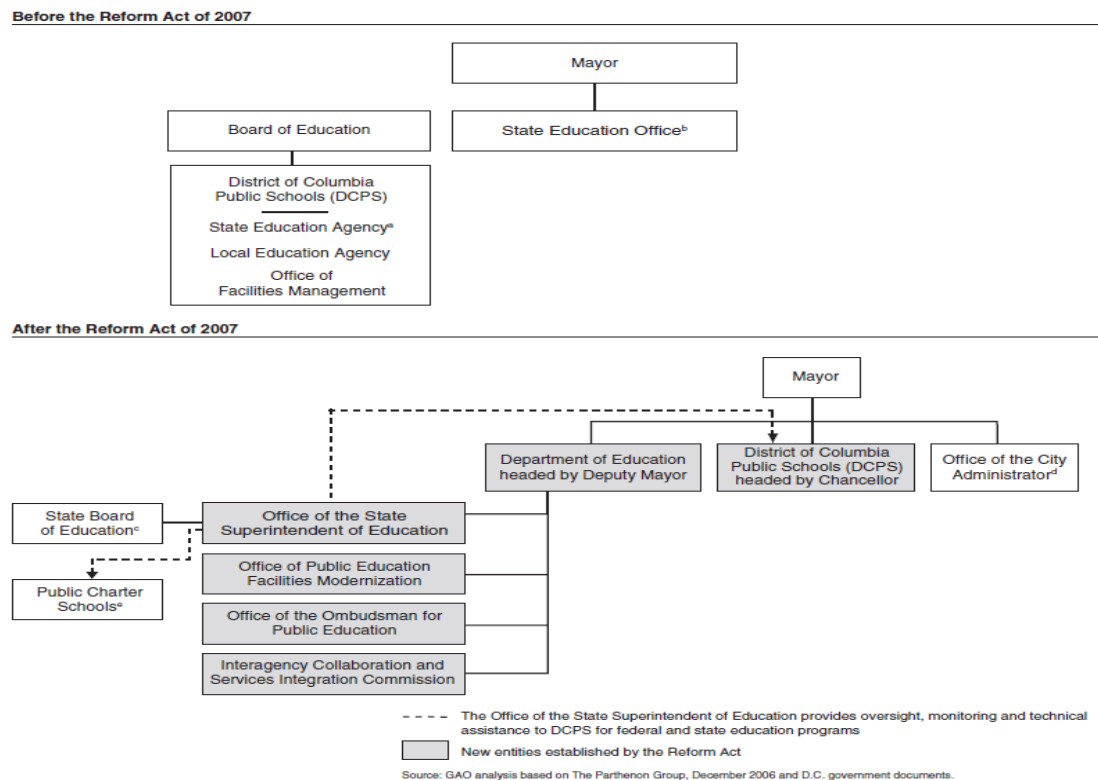
Business Practices and Strategies: School Year 2010-2011

Organizational Structure and Roles

Much of the language in PERAA is devoted to the reorganization of structures and roles in DC's educational governance. The law abolished existing entities, such as the Board of Education that previously held authority over the DC Public Schools (DCPS), and established new ones (Exhibit 1). Here, we describe PERAA's specifications and the ways in which organizational responsibilities and procedures carried out during 2010-2011 did or did not conform to PERAA requirements.

Exhibit 1

Figure 1: D.C. Public Schools Governance Structure, prior to the 2007 Reform Act and after the Reform Act



Source: Government Accountability Office, (2009, p. 7).

PERAA Specifications and 2010-2011 Activities

One of the most significant changes under PERAA was placing the governance of traditional public schools under the Mayor rather than the former Board of Education. Under PERAA, the Mayor chooses the Chancellor of DCPS, and DCPS becomes a cabinet agency with the Chancellor reporting directly to the Mayor. PERAA also directs the Mayor to appoint a Deputy Mayor for Education, who heads the Department of Education (but does not have authority over DCPS).

Prior to appointing a chancellor, PERAA calls on the Mayor to “Establish a review panel of teachers, including representatives of the Washington Teachers Union, parents, and students ("panel") to aid the Mayor in his or her selection of Chancellor..... [and] convene a meeting of the panel to hear the opinions and recommendations of the panel..... The Mayor shall consider the opinions and recommendations of the panel in making his or her nomination and shall give great weight to any recommendation of the Washington Teachers Union” (§105).

A chancellor search took place in 2010-2011, and it was conducted in accordance with PERAA’s procedural requirements. In October 2010, the need for a chancellor search arose when Michelle Rhee resigned as chancellor, after Vincent Gray won the Democratic nomination for Mayor. A panel was convened in February 2011, and it included parents, teachers, administrators, and local education elders. The name of Kaya Henderson, then serving as interim chancellor, was the only one Mayor Gray submitted to the panel. On March 15, 2011, Mayor Gray released a report detailing the findings of the Advisory Panel, saying, “As the authorizing legislation requires, I have given careful consideration to the panel’s feedback” (Executive Office of the Mayor, 2011). Henderson’s appointment was reviewed by the DC Council, as required by PERAA, and confirmed unanimously on June 21, 2011 (Turque, 2011).

Another new entity created by PERAA was the Office of the State Superintendent of Education (OSSE), which replaced the State Education Agency and acts as the equivalent of a state department of education. OSSE is headed by the State Superintendent, who reports to the Deputy Mayor for Education, and it has responsibilities for developing standards, policies, and data systems for all local educational agencies (LEAs) in the District, including DCPS as well as charter LEAs. (Some charter LEAs consist of a single school, while others comprise multiple campuses.)

During 2010-2011, together with the Deputy Mayor’s office, OSSE coordinated the successful application for federal Race to the Top (RTT) funding in 2011. OSSE secured the participation of a broad swath of the DC public and charter school sector, including 35 LEAs (nearly two-thirds of all LEAs), 201 schools (87 percent), 5,800 teachers (90 percent), and 65,734 students (91 percent) (District of Columbia Race to the Top Phase II Application, 2010).

OSSE works with a State Board of Education, which has eight members elected from DC's eight wards and one elected at large. The state board's functions are listed as follows in PERAA:

- (1) Advise the State Superintendent of Education on educational matters; (2) Approve state academic standards, following a recommendation by the State Superintendent of Education;
- (3) Approve high school graduation requirements;
- (4) Approve standards for high school equivalence credentials;
- (5) Approve a state definition of "adequate yearly progress," to be applied to all local education agencies, standards for "highly qualified teachers,"... and [a definition of] "proficiency" that ensures an accurate measure of student achievement;
- (6) Approve standards for accreditation and certification of teacher preparation programs of colleges and universities;
- (7) Approve the state accountability plan for the District of Columbia developed by the chief state school officer, [ensuring that all local education agencies make adequate yearly progress and are held accountable for student achievement]...;
- (8) Approve state policies for parental involvement;
- (9) Approve state policies for supplemental education service providers operating in the District;
- (10) Approve the rules for residency verification;
- (11) Approve the list of charter school accreditation organizations;
- (12) Approve the categories and format of the annual report card, pursuant to NCLB Act;
- (13) Approve the list of private placement accreditation organizations...;
- (14) Approve state rules for enforcing school attendance requirements; and
- (15) Approve state standards for home schooling (§403 (a)).

The state board held regular meetings on topics consistent with these prescribed responsibilities during 2010-2011. Meeting topics were: (a) Update on the DC CAS scores; (b) Briefing on Race to the Top and a Science update; (c) Global Education; (d) Teacher Evaluation Systems; (e) Health and Wellness Programs in Public Schools; (f) Preparing students in the District of Columbia to enter the workforce; (g) graduation requirements for District of Columbia High School Seniors; and (h) Race to the Top Award.

The board's approval of new academic standards set the stage for considerable activity aimed at the gradual implementation of these standards, as discussed in this report's section on Academic Plans.

PERAA called for the creation of an Interagency Collaboration and Services Integration Commission "to address the needs of at-risk children by reducing juvenile and family violence through a comprehensive integrated service delivery system" (§503). Operations of this commission, renamed the Statewide Commission

on Children, Youth & their Families, are described below in the Interagency Collaboration subsection of this part of the report. The commission's annual report for 2010-2011 is not available, although PERAA required it to issue one.

The Office of the Ombudsman for Public Education was created by PERAA, reporting to the Deputy Mayor for Education. **This office remained vacant throughout 2010-2011,** having lost its funding earlier, in 2009.

PERAA replaced the Office of Facilities Management, formerly part of DCPS, with a new Office of Public Education Facilities Modernization (OPEFM). This office was to report to the Deputy Mayor for Education.

In April 2011, with the release of the fiscal 2012 budget, Mayor Vincent Gray announced a reorganization affecting OPEFM: the establishment of a new agency, the Department of General Services (DGS), that would combine the Department of Real Estate Services and OPEFM. The reason given for the merger was that it would streamline operations and reduce redundancies. A dissenting view was expressed by DC Councilmember, Tommy Wells (D-Ward 6), on the grounds of public accountability: "I'm afraid putting [OPEFM] under a large government entity is creating a bureaucracy that will lose accountability and transparency" (Wilson, 2011).

PERAA placed full responsibility for chartering, reviewing, and closing public charter schools under the DC Public Charter School Board (PCSB), which had been created in 1996 as a second, independent authorizer alongside the DC Board of Education (BOE). The BOE relinquished its authorizing role in 2006, and PERAA, along with abolishing the BOE, transferred oversight responsibility for existing BOE-chartered schools to the PCSB in the following year. PERAA also specified the grounds for exercise of a major chartering responsibility, that of revoking a charter "...if the eligible chartering authority determines that the school (1) committed a violation of applicable law or a material violation of the conditions, terms, standards, or procedures set forth in the charter, including violations relating to the education of children with disabilities; or (2) has failed to meet the goals and student academic achievement expectations set forth in the charter" (§802 (e)).

Actions taken by the PCSB with respect to charter renewal and revocation during 2010-2011 are described in the sub-section below on Public Accountability and the later section on Academic Plans.

Questions for Further Analysis

The focus in this subsection of the report has been on the extent of adherence during 2010-2011 to the organization that PERAA created. Although most of the major structures mandated by PERAA were in place in 2010-2011, some changes were made before and after that year, and the perceived results of these changes

can be addressed in a more comprehensive report. Future reports, taking a multi-year perspective, will address such questions as:

- Did other offices carry out the functions that PERAA assigned to the Ombudsman? How and to what extent do stakeholders believe that the absence of an ombudsman may have made a difference in public accountability or engagement over time?
- Did the consolidation of OPEFM into a larger agency, announced in spring 2011 and planned for later that year, appear to lessen its transparency as Councilmember Wells warned that it could?
- What are the perceived effects of the somewhat complicated reporting arrangements for DCPS and OSSE? (OSSE is charged with developing standards and policies for DCPS along with other LEAs but reports to the Deputy Mayor of Education, while DCPS reports directly to the Mayor).

Financial Management and Resource Allocations

Although PERAA prescribed very few specific procedures with respect to finances, it was enacted amid persistent dissatisfaction with the opacity of DC education budgets and spending. Previous DC superintendents, superintendents from other districts, and local stakeholders described DC budget development as “complicated and burdensome” and “difficult to navigate” in a 2006 Parthenon Group Report on DCPS. Here we describe the Fiscal Year 2011 (FY11) budget, the process leading up to its enactment, and issues raised during 2010-2011 about the budget process and resource allocations.

PERAA Specifications and 2010-2011 Activities

PERAA requires the Mayor to submit the DCPS budget to the Council of the District of Columbia, which can modify it with a 2/3-majority vote. PERAA also requires the Mayor to submit (1) actual expenditures for the prior school year; (2) estimated expenditures for the current school year; and (3) projected expenditures for the following school year (§104). Under the Home Rule Act, DC’s budget is also subject to review and approval by the President and the U.S. Congress.

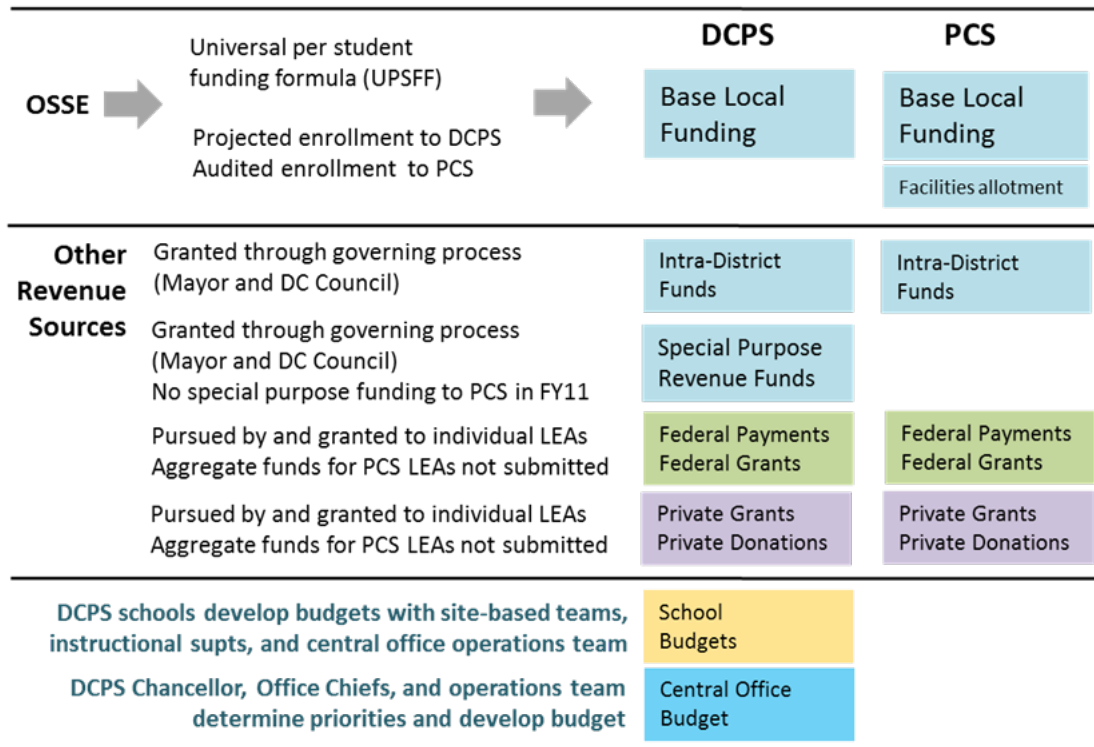
PERAA made only one major change in authority over the education budget: by removing authority from the Board of Education, it eliminated one step in the approval process. Thus, unlike past superintendents who submitted a proposed budget to the board before submission to the Mayor, the chancellor submits the budget proposal directly to the Mayor. However, PERAA did not change the role of the Office of the Chief Financial Officer (OCFO) in relation to DCPS: nominally, DCPS does not control its own budget; budgets are submitted to the OCFO-appointed deputy financial officer for DCPS. The deputy financial officer for DCPS also advises the Chancellor on budget development and fiscal monitoring.

In developing the FY11 budget, Mayor Fenty's administration complied with the procedural requirements of PERAA; Mayor Gray's administration also complied with these requirements during 2011, in developing the FY12 budget. The process of budget development and the formulas in use for FY11 are described below. *These processes and formulas were specified not in PERAA but in other parts of the DC Code.*

We describe first the steps and formulas governing allocations to DCPS and public charter schools. The school and agency budget development process for FY11 (Exhibit FM-1) started with OSSE's communication in January 2010 of enrollment projections for DCPS and audited enrollments in public charter schools (PCS). These figures and the universal per student funding formula (UPSFF) are key elements in calculating annual payments from the DC general fund to the DCPS and PCS operating budgets. The UPSFF, set by OSSE, provides funding weights for students based on their grade level and "add-on" weights for groups such as special education students and English Language Learners.

■ Exhibit FM1: Budget Development Process

Agency budget development



Other agencies also begin budget development process

Chief Financial Officer (CFO) provides revenue forecast for District

May require mayor to address budget deficits leading to changes in agency budgets

Governing Process

Agency budget and performance oversight hearings

Mayor releases District budget proposal

DC Council hearings on overall budget and agency budget proposals

DC Council budget “mark-up” hearings

DC Council main budget vote (sets appropriation levels for agencies)

CFO releases final revenue forecast for District

May be released before or after DC Council main budget vote

May require revisions to adopted budget if above revenue forecast

May allow additional allocations or proposals if adopted budget is below revenue forecast

DC Council final vote on budget

Final Budget submitted to President and U.S. Congress for approval, as required by Home Rule Act

Sources: 1) Clifton, Larsen, & Allen LLP. *District of Columbia Public Schools: Local Schools and Central Office Budget Process Review Consulting Report #1 – Fiscal Years 2007-2010*. August 8, 2012. 2) DC Fiscal Policy Institute. *Timeline for the FY 2011 DC Budget*.

Over and above the UPSFF, both DCPS and PCS received additional funds. The agency budget for DCPS also included special-purpose revenue funds, federal payments and grants, private grants and donations, and intra-district funds transferred between agencies (e.g., OSSE directing federal funds to DCPS). The agency budget for PCS also contained a facilities allotment for each charter school student, and intra-district funds.

Schools received their enrollment estimates from DCPS and were given a few days to petition the projections to secure additional funds. Administrators met with local school restructuring teams (LSRTs) or school-based committees and submitted their budgets at the end of January. Budgets were then reviewed by the schools' instructional superintendent and the central office operations team.

FY11 was the first year for full implementation of the comprehensive school model (CSM), which identified core-staffing positions that schools must fund (Clifton, Larsen, & Allen LLP, 2012). CSM laid out staff-student ratios that determined the minimum number of full-time equivalents (FTEs) for different staff positions such as art and music teachers.

Schools had authority over their remaining funds, also known as "flexible funds." The DCPS School Budget Guide noted that "the majority of a school's funds are flexible funds...[that] allow schools to tailor the academic program to the specific needs of each school community."

Some schools received additional staffing, materials, or non-formula funds. "School support" staff or resources were distributed to schools but funded in the central office budget. These included dedicated aides, long-term substitutes, security personnel, food services, translation services, athletics, textbooks, and testing materials. In addition, special-purpose funds were awarded to schools that received students as a result of the 2008 school consolidation.

The budget process for FY11 was subject to fiscal and procedural stresses.

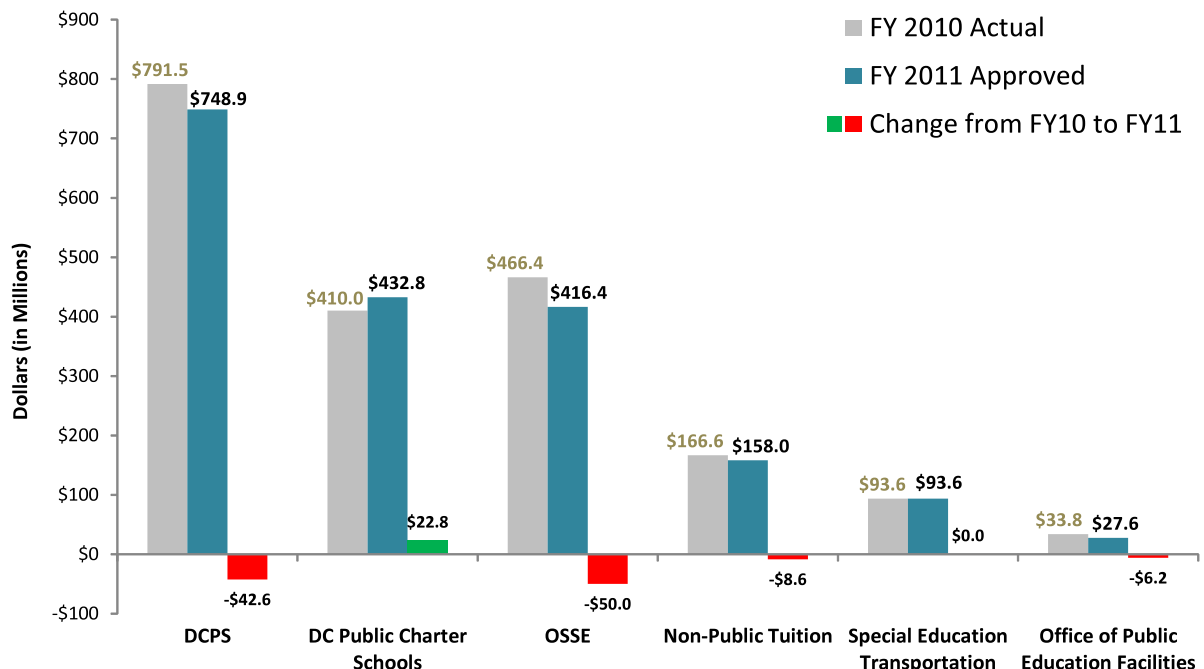
With the continuing recession and the expiration of federal stimulus funds, the CFO announced lower city revenue projections and a corresponding budget deficit that constrained agency initiatives. The CFO's final revenue forecast, issued during the budget development process, required further revisions to individual agency budgets prior to certification.

Both DCPS and PCS projected enrollment increases, which in turn increased the resources needed to meet local base funding. The UPSFF formula was increased by 2 percent to a total of \$8,945 per student. The charter school facilities allotment was increased from \$2,800 to \$3,000.

Performance and budget oversight hearings allowed DC Council members and the public to raise questions and provide feedback on agency strategy and budget priorities. The FY2011 budget approval process was a particularly strained one, however, fueled in part by a primary election in which the DC Council Chairman was challenging the Mayor, public disagreements over budget numbers between DCPS and OCFO, and negotiations over a new teacher contract. Moreover, the DCPS OCFO deputy resigned; he had been the fourth person to hold that position in three years.

Overall spending on public education decreased from \$2.1B in FY10 to \$2.0B in FY11, largely due to the constraints associated with the recession and the expiration of federal stimulus funds. Exhibit FM2 shows the change in the operating budgets of the six highest funded education agencies.

Exhibit FM2: Operating Budgets of Six Highest Funded Education Agencies



Sources: Government of the District of Columbia FY 2011 and FY 2012 Proposed Budget and Financial Plans

- The FY11 approved DCPS budget decreased by 5.4 percent or \$42.6M, largely due to decreases in intra-agency funding (federal stimulus funds directed from other agencies to DCPS) and private grant funds. The city increased local funding by \$27.1M to offset some of the lost stimulus funds.
- The public charter schools (PCS) budget increased by 5.6 percent or \$22.8M including all revenue funds. While PCS also lost funds from the expiration of federal stimulus dollars, charter schools received an additional \$52.0M in local funding. The budget increase was largely due to the 2 percent increase in the

UPSFF, the \$200 increase in charter facilities allotment, and increased student enrollment

- OSSE's budget decreased by 10.7 percent or \$50.0M including all revenue funds. Reductions related to the expiration of federal stimulus funding were largely responsible for the decrease from FY10 to FY11.
- Non-Public Tuition decreased by 5.1 percent or \$8.6M. Reducing the placement of special education students in non-public institutions has been a priority for the District since the passage of PERAA. The expansion of schools using the inclusion model for special education students, state board of education adjustments to non-public tuition rates, and the overall reduction in the number of students in non-public institutions contributed to the decrease from FY10 to FY11.
- Special Education Transportation stayed at the same funding levels from FY10 to FY11
- OPEFM's budget decreased by 18.2 percent or \$6.2M.
- The budget of the Office of the Deputy Mayor for Education decreased by 38.2 percent or \$760K including all revenue funds.
- The Public Charter School Board continued to be funded at \$3.6M.

Private funds also supported education in DC. For example, philanthropic support for Chancellor Rhee's initiatives played a major part in funding the new Washington Teachers Union contract. Teacher pay increases, buy-outs, monetary incentives for participating in the new teacher evaluation system (DC IMPACT), and performance bonuses were financed by \$64M in grants from the Eli and Edythe Broad, Laura and John Arnold, Robertson and Walton Family foundations. Charter schools have also received substantial philanthropic support.

Criticism of the budget process, allocations, and financial controls continued during 2010-2011. A report by the firm Clifton, Larsen, & Allen to the DC Auditor noted that the UPSFF formula used to determine base local funding has not been reviewed to determine whether it is sufficient to meet the needs for educating a DC public school student. The firm was not able to shed light on central office budget development due to poor record keeping, loss of institutional knowledge, and weak internal controls.

The US Department of Education continued to place the school system under "high-risk" designation with respect to the management of federal funds due to poor accounting for those funds. The Government Accountability Office (GAO) released a report in November 2010 saying that DCPS and OSSE lagged in their oversight of federal contracts; between 2004 and 2009, the report said, they received \$190M in federal payments but had not documented exactly how the money was spent.

Advocates for charter schools raised questions about equity in funding for DCPS and PCS in a study commissioned by Friends of Choice in Urban Schools (FOCUS) and the DC Association of Chartered Public Schools, and based on budget figures through FY11. They asserted that although legislation required uniform per pupil spending between DCPS and PCS students, DCPS students received significantly more funds, which this study estimated as being between \$72-127M annually (Levy, 2012). In subsequent years, follow-up analyses have been conducted. Future reports in this series will describe their findings.

Questions for Further Analysis

While the procedures and formulas used in developing public education budgets do not stem from PERAA, they are both consequential and contested. Future analyses will address the arguments about adequacy and equity in funding as well as the continuing critique that budgets and spending lack transparency.

- What have been the trends over time in transparency of the budget itself and of the processes by which budgets are developed? What have been the trends in the use of appropriate internal controls in the education agencies?
- To what extent are the timeline and approval requirements in budget development consistent with best practice for major school systems?
- Under various assumptions and analytic approaches, and based on available data on aggregate spending in public charter schools, what conclusions might reasonably be drawn about adequacy and equity in funding within and across DCPS and PCS over time?

Facilities, Maintenance, and Operations

Before enactment of PERAA, the poor condition of school facilities and issues in basic operations such as issuing textbooks symbolized a public school system in disarray. PERAA established a new agency to deal with facilities. During 2010-2011, as described below, that agency issued a new plan of action and reported on its own success in meeting its benchmarks; and DCPS gathered data on stakeholders' perceptions of facilities, maintenance, and operations.

PERAA Specifications and 2010-2011 Activities

PERAA removed the functions of the former Office of Facilities Management from within DCPS. It created a new Office of Public Education Facilities Modernization (OPEFM), reporting to the Deputy Mayor for Education.

A major event of 2010-2011 was the release of the 2010 Master Facilities Plan (MFP) in November. It was intended to follow up on the completion of an earlier series of OPEFM renovation "blitzes," starting in summer 2007 and continuing during the following summers, as part of a stabilization program (i.e., a program for

alleviating safety, health, security, and accessibility concerns). The 2010 MFP focused on “modernization” (bringing areas and systems into compliance with current standards). The MFP addressed the influence of school facilities on student classroom performance, included an analysis of demographics, and promised funding for green initiatives. Mini-master plans were released for each school site.

The MFP had three phases:

- Phase 1 was to focus on academic components, largely renovated classroom spaces. The MFP would ensure that all schools meet standards in academic spaces within 5 years.
- Phase 2 would address support components such as computer labs, auditoriums, grounds, gymnasiums, and locker rooms.
- Phase 3 would address systems components such as mechanical, electrical, and plumbing.

Phase 2 and phase 3 projects would be coordinated with the work on phase 1 for efficiency.

During FY11, OPEFM reported achieving all of its identified performance initiatives related to school modernization.¹ These included completing three major modernization projects, completing six Phase 1 modernization projects, continuing two full modernization projects, and initiating two full modernization projects.

With respect to maintenance, OPEFM reported meeting two of its three targets. Having set a goal of keeping the backlog of work orders at a level less than 5,000, OPEFM reported that it had met this target. It had also exceeded its target of 17,000 work orders cleared in the year by clearing 27,067 work orders. However, the average number of days to complete non-emergency work orders was at 25 days, exceeding the target of 20 days.

DCPS also registered improvements in operations. During 2010-2011 DCPS surveyed principals twice, within three weeks of the start of each semester, regarding the delivery of textbooks and instructional materials. All principals certified that necessary materials were in place.

Stakeholders responding to surveys reported positive perceptions of the condition of DCPS school buildings and equipment in a number of respects. In May and June 2011 the consulting firm KPMG, under contract to DCPS, conducted surveys of students in grades 5-12, parents, teachers, administrators, and other

¹ Sources for self-reported attainment of performance objectives, cited in several sub-sections of this report, are the Performance Accountability Reports (PARs) that each agency supplied to the DC Council after the end of the fiscal year.

school-based staff. Approximately 24,000 surveys were completed. Response rates are shown in Exhibit FMO1.²

Exhibit FMO1	
Group	Response Rate
Parent	17.4% (paper/online) 30.8% (telephone)
Student (grades 5-12)	58.6%
Teacher	68.4%
Administrator	84.5%
Staff	49.4%

- 78 percent of teachers agreed or strongly agreed that their school was well maintained, 78 percent agreed or strongly agreed that their school was clean, and 76 percent agreed or strongly agreed that their school was in good physical condition.
- 83 percent of teachers always had access to a working computer in school, and 81 percent had access to the Internet, but only 57 percent always had access to a functional copy machine.
- 87 percent of administrators agreed or strongly agreed that their school was clean, 84 percent said their school was well maintained, and 83 percent said that the classrooms in their schools are in good physical condition.
- 83 percent of parents reported that they were satisfied or very satisfied with the physical condition of the classrooms.

However, students reported lower levels of satisfaction with maintenance and equipment in their schools:

- 54 percent of students agreed or strongly agreed their schools were clean and well maintained. Forty-three percent of students usually had access to a working computer at school, 44 percent usually had Internet access at school, and 33 percent usually had access to a working printer at school.

Stakeholders were generally satisfied with the level of safety inside DCPS schools.

- 89 percent of students felt mostly or very safe in classes; 77 percent felt safe in the hallways and bathrooms. Fewer, 63 percent, felt safe outside around the school.

² Uncorrected for potential response bias.

- 83 percent of parents were satisfied or very satisfied with the safety inside the school.
- 89 percent of teachers agreed or strongly agreed that they felt safe at school.
- 98 percent of administrators agreed or strongly agreed that they felt safe at school.

Looking at the operations of OPEFM, some charged that the office had paid insufficient attention to financial record keeping and cost control. A report issued by the DC Auditor in May 2011, addressing FY08 and 09, criticized OPEFM for a poorly designed system for managing contracts and procurements, and inaccurate and incomplete records of expenditures, among other issues (Office of the District of Columbia Auditor, 2011). Across the major school projects completed by OPEFM under its first director, 2007 through early 2011, a news article in the Washington Post reported (Stewart, 2011):

Out of a list of 16 schools and a pool ..., 12 went over budget. In each case, ...[the agency executive director] convinced city leaders that the projects' initial budgets were unrealistic for the quality they demanded. The increased spending, he said, was justified.

With respect to public charter schools, the GAO called for improvements in the process by which these schools could gain access to former DCPS facilities.

Based on data gathered through December 2010, the March 2011 report addressed the District's administration of its "right of first offer" policy, which provided the opportunity for public charter schools to be considered as occupants of former DCPS school buildings. The report concluded that greater transparency was needed in the process, which was leaving charter school operators unclear about the reasons for rejecting their offers. Through the end of 2010, 25 buildings had been made available under the right of first offer provision; charter schools had made offers for 17 of them; and 10 of these had been accepted.

Questions for Further Analysis

With multi-year data from public reports and stakeholder surveys, it will be possible to determine how well facilities, maintenance, and operations in DCPS have progressed toward state-of-the-art standards. The issues of facilities for public charter schools are intertwined with financial issues and also deserve careful examination that takes multiple perspectives into account. Questions for further analysis include:

- Do the standards and performance objectives applied to the quality of facilities, maintenance, and operations in DCPS resemble those of other major school systems? To what extent can it be determined whether DCPS has improved its

performance, over time or relative to other systems, with respect to facilities, maintenance, and operations?

- To what extent and how has the fall 2011 reorganization of OPEFM into DGS affected the management of facilities projects? To what extent has the Master Facilities Plan been carried out?
- On the basis of data and perceptions, how can one assess equity in facilities and in the improvement of facilities, both across wards and across the traditional and public sectors?

Public Accountability

Although PERAA does not detail mechanisms for public accountability of the school system, it contains requirements for the data systems that may facilitate public accountability; it charges OSSE and the State Board of Education with developing and approving a plan that meets federal accountability requirements under the No Child Left Behind Act (NCLB); and it authorizes the PCSB to hold charter schools accountable for their management and performance. During 2010-2011, work proceeded on the development of data systems, and individual schools in both DCPS and PCS faced consequences for their performance (National Research Council, 2011).

More significantly, by giving the Mayor authority over schools, PERAA implicitly invited the public to hold the Mayor accountable for the schools' direction and success. In fall 2010, Mayor Adrian Fenty, who had pursued a vision of education reform under PERAA's authority, was defeated in the Democratic primary by then-Council Chairman Vincent Gray, who won 54 percent of the vote to Mayor Fenty's 44 percent (DC Board of Elections and Ethics, 2010). It is not clear to what extent this result reflected dissatisfaction with school system's performance, however. In a *Washington Post* poll conducted before the primary, 41 percent of registered Democrats saw Michelle Rhee's tenure as chancellor as a reason to vote for the Mayor, and 40 percent saw her tenure as a reason to vote against the Mayor (Stewart & Cohen, 2010).

PERAA Specifications and 2010-2011 Activities

PERAA assigned to particular offices several activities that may support public accountability: it required the State Board of Education to approve a federally required state accountability plan that would include a system of sanctions and rewards for local education agencies (LEAs) on the basis of student achievement; it required public charter schools to participate in a longitudinal education data warehouse system, then under development by the agency that PERAA renamed as OSSE; and it charged the PCSB with reviewing and, if necessary, revoking charters.

During 2010-2011, federal Race to the Top funds from the U.S. Department of Education began to support DC's work on systems for data based public

accountability. The Race to the Top plan provided for the public availability of consolidated data on student progress and promised to “hold DCPS accountable for results.” It promised the following actions related to data and accountability (Office of the State Superintendent of Education, n.d.):

- OSSE will build an interactive web site that provides parents and the public with a roadmap to find useful data to understand and evaluate the students’ progress.
- OSSE and LEAs will develop a common, city-wide measure of individual student growth

There was work to do on the systems that would support data availability. Development of the statewide longitudinal education data (SLED) warehouse, supported by another federal grant that OSSE had received in 2007, had a history of problems. The contractor had been fired in September 2009 due to a number of issues, notably the inability of the system to follow students across years.

During 2010-2011, OSSE and Google sought to make test data more accessible and understandable to the public. They took the DC Comprehensive Assessment System (DC CAS) scores and added visualization and animation to create a new school profile tool. DCPS rolled out the new school profiles on its website.

In March 2011, State Superintendent of Education Hosanna Mahaley testified that OSSE had made progress in development of SLED, including assigning each student a unique identifier. This was a step toward the capability for analysis of progress over time, although SLED remained significantly behind schedule.

With respect to schools’ accountability for performance, both DCPS and the PCSB took actions during 2010-2011 that adhered to PERAA’s requirements. Under the requirements of NCLB, which PERAA had referenced, DCPS imposed consequences on six schools identified for mandatory school improvement. All six were reconstituted, requiring most staff and teachers to reapply for their positions. One, Stanton Elementary, was assigned an external management partner, the Philadelphia-based charter network Scholar Academies (Turque, 2010).

The PCSB continued to carry out a system of reviews of charter schools:

- Self-Study Reviews for first-year schools;
- Program Development Reviews for schools after first year;
- Compliance Reviews for all schools annually;
- Financial Management Reviews for all schools annually;
- High School Transcript Reviews annually;
- Preliminary Charter Reviews for schools entering 5th year; and
- Charter Reviews.

Ten charter schools underwent a five-year Charter Review in 2010-2011. Thea Bowman and School for Arts In Learning (SAIL) public charter schools voluntarily

relinquished their charters due to financial problems. PCSB revoked the charter of Nia Community Public Charter School due to low academic performance. Also, in May 2011, DC Superior Court upheld PCSB's revocation of the charter of Kamit Institute for Magnificent Achievers (KIMA), an action that PCSB had taken in August 2010.

The PCSB released results of an accountability system for measuring and comparing school performance. This Performance Management Framework incorporated student growth as a component in its indicators, placed schools in three performance tiers, and mandated school improvement plans for schools in the lowest performance level (PCSB, 2011).

DCPS has publicly reported to the DC Council on a set of performance indicators after the end of each fiscal year, and for 2010-2011 these indicators include several related to student achievement. DCPS fell short on three of its four 2010-2011 measures related to student proficiency in reading and mathematics and both of its measures related to the black-white achievement gap.

- The percentage of secondary students proficient in mathematics rose from 44 to 46 percent, meeting the target.
- The percentages of elementary students who were proficient fell in both subjects, from 44 to 43 percent in reading and from 43 to 42 percent in mathematics.
- The percentage of secondary students proficient in reading rose from 43 to 44 percent, falling short of the target.
- Black-white achievement gaps widened in both subjects, from 51 to 52 points in reading and from 51 to 59 points in mathematics.

The data supporting test-based accountability for student achievement were publicly called into question in March 2011, when USA Today published the results of its reporting on apparent test irregularities in DCPS schools in prior years (Gillum & Bello, 2011). The article delved into reports of high rates of erasures in a few schools during these years and suggested that DCPS had resisted a sufficiently wide-ranging investigation. Its charges were then disputed by DCPS and OSSE, which issued information about their past inquiries into potential irregularities:

- In March 2011, Acting Chancellor Kaya Henderson made public an independent review of 2009 DC CAS security. The investigation found "no evidence of cheating at any of the schools flagged for possible testing irregularities" (from OSSE Press release).
- In May 2011, OSSE released final results of investigation into 2010 testing irregularities that found "evidence or a strong suspicion of a test security violation" in three classrooms, but not system wide (from OSSE Press release).

Questions for Further Analysis

The mechanisms for public accountability for DC schools include one strong remedy for publicly perceived shortcomings—voting a mayor out of office. They also include consequences for individual schools’ performance, administered through mechanisms that predated PERAA under federal law and PCSB authority. Much of the apparatus of public accountability relies on student achievement as measured by DC CAS tests. This implicitly requires integrity in testing procedures, multiple sound measures of overall and subgroup performance, data systems that permit longitudinal analysis, and clear, intelligible reporting for the broad public. Thus, questions for future reports will include the following:

- How have OSSE and the other agencies continued to carry out the Race to the Top plans for useful, publicly accessible data on progress and a common, citywide measure of student growth?
- What has been done to ensure that past and future test-based reports of student achievement are not tainted by irregularities?
- To what extent do public priorities for school accountability center on test performance, and what other standards of accountability, if any, do various constituencies apply in judging DC’s schools?

Stakeholder Engagement and Responsiveness

Engagement by stakeholders and responsiveness by education agencies can take different forms. PERAA created the Office of the Ombudsman as a vehicle for attending to specific issues, especially those raised by individual families about their own children’s education. It also required that the Chancellor, the State Board of Education, and the PCSB hold public meetings. More broadly, however, one can view stakeholder engagement as participation by parents and other concerned residents in agenda setting for public institutions—a process that can be facilitated by transparency in policy deliberations.

After the September 2010 primary election in which Mayor Fenty was defeated, he and former Chancellor Rhee reflected on their record with respect to public engagement in an op-ed for *The Washington Post*. “When it came to ensuring broad support for our reforms,” they wrote, “we fell short” (Fenty & Rhee, 2010).

PERAA Specifications and 2010-2011 Activities

PERAA called for an ombudsman to “respond to complaints and concerns in a timely fashion with accurate and helpful information, [to] receive complaints and concerns from parents, students, teachers, and other District residents concerning public education, including personnel actions, policies, and procedures, and [to] determine the validity of any complaint quickly and professionally” (§602). This language suggested that the purpose was to address specific issues swiftly, not to work on engaging the broad public in decisions about the longer-term direction of the public schools.

During 2010-2011 the ombudsman position remained empty, as it had been since funding for the position expired in September 2009.

PERAA required public meetings, and these procedural requirements were met during 2010-2011. The Chancellor is required to hold public meetings at least quarterly. The State Board of Education must hold monthly meetings to receive citizen input. Meetings of the PCSB must be open to the public and provide time for public comment.

For 2010-2011 the DCPS Office of Family and Public Engagement reported activities that included exit surveys at community meetings, small-group guided discussions in large community meetings, PTA meeting presentations by central office staff, and a Parent Leader Academic Network (PLAN) established where bi-monthly emails and monthly calls were held to inform parent leaders of critical updates and receive feedback from them. From January through June, Acting Chancellor Kaya Henderson attended seven public meetings based at schools in different wards, held in evenings and on Saturdays (DCPS, 2011).

The stakeholder survey conducted for DCPS by a contractor is described above, in the subsection on Facilities, Maintenance, and Operations. (Survey response rates are described in that subsection.) The survey, conducted in May and June 2011, yielded results that gave a general picture of the extent to which various groups of respondents felt that the schools were on the right track. Respondents to the survey were more likely to agree that their school was on the right track than that DCPS was on the right track. Teachers were the group least likely to agree that either the school or DCPS was on the right track.

- The stakeholder survey found that among teachers, students, parents, staff, and administrators 74 percent to 94 percent of those surveyed agreed or strongly agreed that their “school is on the right track for student achievement.” For all groups except teachers, the rate of favorable responses surpassed the previous two surveys in 2008 and 2009. Teachers’ favorable response rates remained the same at 74 percent.

- When the same question about being on the right track was asked about DCPS as a whole, agreement ranged from a low of 55 percent favorable for teachers to a high of 85 percent for administrators.

The State Board of Education conducted monthly public meetings as required in PERAA. Meeting topics for 2010-2011 were: (a) Update on the DC CAS scores; (b) Briefing on Race to the Top and a Science update; (c) Global Education; (d) Teacher Evaluation Systems; (e) Health and Wellness Programs in Public Schools; (f) Preparing students in the District of Columbia to enter the workforce; (g) graduation requirements for District of Columbia High School Seniors; and (h) Race to the Top Award (OSSE, 2012).

On March 11, 2011, Mayor Gray held a 3 ½-hour public meeting on the FY12 budget. Testimony and exhibits were presented on the following topics:

- the current and prospective educational needs of the District's publicly funded schools, including DCPS and public charter schools;
- the relative levels of support provided in recent years and sought in the current budget requests for DCPS, charter schools, and other agencies of the District government that support youth;
- the programs and levels of funding supported by the findings of relevant professional studies and commissions; and
- the levels of funding for public school systems in surrounding jurisdictions that have reputations for providing high quality education to their students.

In its annual report for 2010-2011, the PCSB reported that it had engaged stakeholders through a variety of avenues. In addition to the required meetings, which were held monthly, the Board also held nine public hearings on applications, charter revocation proposals, and charter amendment requests; and it held four community forums of school closures. Special events included the DC Family Education Expo in October and the second annual DC Charter School Recruitment Expo in January. The Board also reported that it formed a new community advisory group during 2010-2011 and engaged stakeholders in development of its Performance Management Framework and school report cards (PCSB, 2011).

Questions for Further Analysis

Because public schools are a matter of public concern for families and other stakeholders, it will be important to analyze not only agencies' year-to-year adherence to PERAA's requirements—which center on providing regular, open public forums—but also evolving perceptions of the DC schools' direction and of agencies' responsiveness to public concerns. The District of Columbia has active public dialogue on many matters, including education, and policy makers can potentially use a range of vehicles for two-way communication with the public. Above, in discussing organizational roles under PERAA, we have already alluded to the need to track the effects of the absence of an ombudsman. Other questions for future reporting will include:

- What are the trends in measured public perceptions of DCPS and the broader education system? What has been done in response to data on public perceptions, and in response to data on rates of participation in the available channels for public engagement?
- In addition to addressing individual complaints, conducting surveys and public meetings, and disseminating the policies they have set, how do education authorities—the Mayor, the Chancellor, the PCSB, and others—invite and attend to expressions of the fundamental concerns held by residents and community organizations?

Interagency Collaboration

PERAA created a new commission charged with interagency collaboration, as described in the subsection on Organizational Structure and Roles, above. No public report on that commission’s activities during 2010-2011 is available. The office of the Deputy Mayor for Education planned a number of activities related to interagency collaboration during 2010-2011 but later reported that many of its plans for the year were substantially revised due to the mayoral transition. Some groundwork was laid for future interagency and inter-sector collaboration, however, as described below.

PERAA Specifications and 2010-2011 Activities

PERAA required the creation of a commission to address the needs of vulnerable children and youth. The Interagency Collaboration and Services Integration Commission was intended “to address the needs of at-risk children by reducing juvenile and family violence through a comprehensive integrated service delivery system.” PERAA (§503) specifications include the following:

- A service delivery system that includes assessment of children by school-based clinicians, the development and implementation of evidence-based preventative and intervention programs, and the development of integrated service plans for children and families.
- Multi-disciplinary assessments that are designed to determine risk and protective factors of children and the extent to which they are in need of services resulting from emotional disturbance, substance abuse, exposure to violence, or learning disabilities.
- Services and interventions that may include social and emotional development, violence and substance abuse prevention, and family resiliency. The system also allows for interagency exchange of information and resource sharing while still safeguarding confidential information.

PERAA identified 21 members for the Commission, including the Mayor (as chair), the Chairman of the DC Council and Chair of the Committee on Human Services, the

Deputy Mayor for Education, the State Superintendent of Education, the DCPS Chancellor, the PCSB Chair, many leaders in the DC systems of criminal justice and youth services, and the Directors of Parks and Recreation and of the Public Libraries.

The Commission, renamed the Statewide Commission on Children, Youth, and their Families, did not issue a publicly available report on its activities for 2010-2011.

In addition to creating the Commission, PERAA called for coordination and collaboration among DC government agencies to support education. Much of the responsibility for coordination rested with the Department of Education, headed by the Deputy Mayor for Education (DME).

In the mayoral transition year of 2010-2011, several DME initiatives were revised or abandoned. The office stated in several places throughout its Performance Accountability Report for FY2011, “Data not reported. The DME is operating under a different set of goals and guiding principles and this was not directly addressed” (Office of the Deputy Mayor for Education, 2012). This statement applied to the development and implementation of an Education and Youth Development Plan, pilot implementation under the Commission of evidence-based programs to improve child and youth outcomes, and reporting on youth development indicators.

DME reported progress related to special education, attributing this progress to work done with OSSE and DCPS to develop strategies to reduce non-public education enrollment and increase the capacity to serve students with special needs in their least restrictive environment. According to the DCPS performance accountability report for FY11, non-public special education placements were reduced from 2,599 to 1,789 for a savings of \$4 million (DCPS, 2012).

In May 2011, Mayor Gray and Deputy Mayor for Education De’Shawn Wright announced a truancy reduction program to be coordinated with multiple agencies. District officials, DCPS, private health and human services agencies, charter schools, and the court system identified truant 9th graders in Ballou and Anacostia High Schools (in DCPS) and the Washington Mathematics Science Technology Public Charter High School. The goal of this program was to ensure attendance intervention plans were in place with case management and follow up.

Questions for Further Analysis

The mayoral transition year 2010-2011 saw relatively limited publicly reported progress on existing goals for interagency collaboration. A multi-year perspective will identify activities and results completed both before and after that year, such as the interagency and inter-sector collaboration that eventually resulted in establishing a new inter-sector entity, RAISE DC, as an organizing hub for data-

based, cradle-to-career partnerships and initiatives. Questions to be addressed in future reports include:

- How have various DC government agencies worked together over time in the pursuit of improved outcomes for children and youth, whether through the commission specified by PERAA or in other ways? In what ways have these efforts been consistent with the vision outlined in PERAA?
- What has facilitated interagency collaboration and what has impeded it, as perceived by participants and knowledgeable observers?

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Section II

Human Resources Operations and Human Capital Strategies, School Year 2010-2011

PERAA required periodic reports assessing the Act's impact on DCPS business practices and strategies, human resources and human capital strategies, academic plans, and student achievement. This section describes DCPS's human resources and human capital strategies *during the 2010-2011 school year*, and may be suggestive of the condition of DCPS more generally after PERAA's passage in 2007. But the analysis is neither intended nor adequate as the basis for causal judgments of the specific effects of PERAA on teacher and student outcomes.

Human capital strategies were a prominent component of the reform vision of Mayor Fenty and Chancellor Rhee. These strategies included rewards for top performers and support for weaker performers with a desire to improve. They also included consequences for unsatisfactory performance. In a five-year action plan for DCPS issued in "working draft" form in 2009, the section on human capital acknowledged that one component of the strategy would be to "identify and transition out a significant share of the teaching corps in the next two years" (District of Columbia Public Schools, 2009, p. 36). In addition to offering voluntary buy-outs, DCPS would dismiss teachers with poor performance.

Shortly before the beginning of the 2010-2011 school year, in July 2010, a new contract negotiated with the Washington Teachers Union took effect. It included several provisions that rewarded teachers, along with other provisions that diminished their job security. Among its major provisions were the following:

- a 21.6 percent raise over five years;
- an option for teachers to receive individual performance bonuses in exchange for waiving their rights if they are excessed;
- new flexibility to dismiss ineffective teachers;
- school system authority over staffing and scheduling decisions;
- collaboration between the school system and the union to improve low performing schools, provide professional development, and improve discipline and safety procedures;
- changes in procedures for excessing due to enrollment, program, or budget changes: rather than guaranteeing excessed teachers other spots in the system based on their seniority, principals will have a choice of whether to accepting teachers who have lost their positions; and
- the opportunity for excessed teachers in good standing to take a \$25,000 buyout, early retirement if they have 20 years of service, or a full year of pay and benefits while looking for another position in the system.

Results of the first round of the IMPACT system for teacher performance evaluation (during the 2009-10 school year) were released in July 2010. A total of 126.5

teachers lost their jobs in the wake of these results (Washington Post, 2010). This included 75 teachers rated ineffective and 51.5 who were rated minimally effective and could not find placements.

In this report, we measure teacher effectiveness using IMPACT data (the box below provides an overview of IMPACT). Although there may be qualities of effective teachers that it does not measure, the IMPACT score was specifically designed to evaluate DCPS teachers.

IMPACT: a new approach to the evaluation of teachers in DC

A major policy change for human resources and human capital strategies in DCPS was the creation of the IMPACT system for teacher performance evaluation. Teachers receive annual evaluation scores under IMPACT that are used to make retention and performance pay decisions. The composition of a teacher's IMPACT score is based on the teacher's IMPACT group. For the 2010–2011 school year—the second year of IMPACT—Group 1 consisted of general education teachers of math and reading in grades 4 through 8, the grades for which test score data are needed to calculate teacher “value added”—a measure of teacher effectiveness that seeks to isolate how much a teacher contributes to student achievement from any confounding factors outside the teacher's control (Isenberg & Hock, 2012). Group 2 included all other general education teachers. Groups 3 through 7 included non-general education teachers such as special education and English-language-learner teachers.

Most teachers received an IMPACT evaluation score composed of (1) evaluations by school administrators and third-party trained observers using a classroom observation rubric; (2) an individual value-added (IVA) measure of student achievement growth for Group 1 or an alternative measure based on achievement targets determined by the teacher and principal for most other teachers; (3) a principal-assessed measure of the teacher's collaboration with colleagues and support of school initiatives and programs; (4) a principal-assessed measure of the teacher's attendance, adherence to school policies, and professionalism; and (5) a school value-added score.

The weights for each component in the total score depended on a teacher's IMPACT group. Fifty percent of the total evaluation score for Group 1 teachers was composed of the IVA score in the 2010–2011 school year. For all groups, the total evaluation score ranged from 100 to 400 points. Based on this score, a teacher received one of four possible effectiveness ratings: highly effective (350 to 400 points), effective (250 to 349 points), minimally effective (175 to 249 points), or ineffective (100 to 174 points). Under IMPACT, teachers who earn a highly effective rating receive performance pay, and those who earn an ineffective rating in one year or a minimally effective rating for two consecutive years are dismissed. For the 2010–2011 school year, most teachers were in Group 1 or 2; 14 percent of teachers were in Group 1, and 64 percent of teachers were in Group 2.

Our analysis of DCPS human resources and human capital strategies (the Technical Appendix to Section 2 provides methodological details) addresses research questions under three topic areas, as required by PERAA:

1. **Retention of effective teachers.** Did DCPS retain its most effective teachers – *where effectiveness is measured by IMPACT*? How effective are teachers who are new to DCPS relative to more experienced teachers?
2. **Distribution of effective teachers.** Are students in high-poverty schools more or less likely to be taught by teachers rated as effective by IMPACT? Are teachers' decisions to remain at their school from one year to the next related to the poverty rate of students at that school?
3. **Tenure and experience of principals.** How many years of experience within DCPS does the typical DCPS principal have? Is principal experience related to the poverty rate of students in the school?

One possible drawback to using IMPACT scores as our measure of teacher effectiveness is that the scores are not necessarily comparable across all teachers because the scores are composed of different components and are combined by using different weights by IMPACT group.

Another limitation arises because DCPS uses IMPACT scores to make significant personnel decisions about teachers, including dismissals. Even if IMPACT scores provide highly accurate measures of teacher effectiveness, no measure can provide a perfect evaluation. Due to misclassification errors in IMPACT, comparisons based on IMPACT may overstate – or understate – improvements in DCPS teacher effectiveness.

CAUTION

A particular form of misclassification error arises if some test scores were compromised because of alleged breaches of test security. The individual value-added (IVA) component of the IMPACT score is based on test scores that are used to measure student achievement at baseline—at the end of the previous school year—and at the end of the evaluation year. Test scores that have been identified by DCPS as invalid for security reasons after investigation are excluded from the value added analysis in the following year. Consequently, the IVA score does not hold teachers accountable for the achievement of students with baseline scores known to be compromised.

However, if baseline test scores are not known to be compromised, or if any end-of-year scores are compromised, some teachers may be held accountable for the achievement of students – and the IVA score may measure some teachers' contributions to student achievement – using compromised test scores from the year of the evaluation. DCPS has stated that they have not found evidence of widespread cheating. However, to the extent that there were test score security breaches, especially any that did not result in test score exclusions, IMPACT scores may be compromised.

For example, it is possible that an effective teacher was misclassified as minimally effective two years in a row, subsequently dismissed, and then replaced by an equally effective teacher. Even though such turnover would not change the overall

effectiveness of DCPS teachers, a comparison of IMPACT scores would suggest that DCPS has improved its teaching staff based on the erroneous rating of minimally effective for the dismissed teacher. A misclassification error in the other direction—a minimally effective teacher misclassified as effective—would also show erroneous improvement because it would appear that DCPS properly retained an effective teacher.

We use principal experience to measure the effectiveness of principals. Whereas previous research has found a relationship between experience and principal effectiveness, experience is not a precise measure of effectiveness.³ One alternative is to directly measure principals' contributions to student achievement. However principal effectiveness is difficult to distinguish from other school-level contributions to student achievement (Lipscomb, Chiang, & Gill, 2012). A standard approach to measuring principals' contributions to student achievement is to compare the change in student achievement when there is a change in school leadership. It is not possible to apply this strategy to measuring the effectiveness of DCPS principals because nearly all principals lead only a single school for their entire tenure in DCPS.

Retention of DCPS Teachers: Effectiveness and Experience

DCPS retained most teachers classified as effective or highly effective by IMPACT.⁴ Overall, 81 percent of 2009–2010 teachers in DCPS were retained for 2010–2011 (first panel of Table 1). DCPS retained 89 percent of teachers in the highly effective category and 83 percent in the next-highest IMPACT category (effective). DCPS retained 70 percent of minimally effective teachers and no ineffective teachers for 2010–2011. The lower retention rates for minimally effective and ineffective teachers are consistent with the DCPS IMPACT policy that teachers in the minimally effective category for two consecutive years or in the ineffective category for a single year are subject to separation.

Although the overall retention rates for Group 1 and non-Group 1 teachers are similar, within each of the four IMPACT effectiveness categories, non-Group 1 teachers were less likely than Group 1 teachers to be retained (second and third panels of Table 1). All but one of the 37 Group 1 teachers—those with an IVA score—in the highly effective category in the 2009–10 school year (97 percent) were retained for 2010–2011. Of the non-Group 1 teachers in the highly effective category in the 2009–10 school year, 89 percent were retained for 2010–2011. The

³ Earlier work has shown that more experienced principals make greater contributions to student achievement (Clark, Martorell, & Rockoff, 2009; Branch, Hanushek, & Rivkin, 2012; Dhuey & Smith, 2012b), though some studies have not confirmed a link between experience and principal effectiveness (Buck, 2012; Dhuey & Smith 2012a).

⁴ Retention rates do not distinguish between teachers dismissed under IMPACT and teachers who exited voluntarily; for example, some non-retained teachers may have assumed administrative roles.

retention rates for Group 1 teachers rated effective was 85 percent, and the same rate for non-Group 1 teachers was 83 percent. Similarly, the retention rate for Group 1 teachers rated minimally effective was 76 percent, and the same rate for non-Group 1 teachers was 68 percent. As with Group 1 teachers, DCPS retained no ineffective non-Group 1 teachers for 2010–2011. The average IMPACT score of all Group 1 teachers was 276 points, and the average for retained Group 1 teachers was 283 points. The same averages for Group 2 through 8 teachers were 301 and 307.

The overall retention rates for Group 1 and non-Group 1 teachers—82 versus 81 percent—do not reflect the lower retention rate for non-Group 1 teachers within each effectiveness category because a higher proportion of non-Group 1 teachers were rated as effective or highly effective. For example, 17 percent of non-Group 1 teachers were rated highly effective, whereas only 8 percent of Group 1 teachers received the same rating. The higher proportion of highly-effective non-Group 1 teachers brings up the overall average retention rate for non-Group 1 teachers because these teachers are the most likely to be retained.

The lower retention rates for highly effective non-Group 1 teachers could reflect differences in the construction of the IMPACT scores for these teachers rather than the school system's failure to retain some of the most effective non-Group 1 teachers. For example, the average IVA score received by a Group 1 teacher was 2.5, but the average score on the component that replaces IVA for non-Group 1 teachers was 2.8 (both on scales of 1.0 to 4.0). Consequently, a higher proportion of non-Group 1 teachers received highly effective ratings.

Table 1. Retention of Effective Teachers in DCPS, 2010–2011 School Year

2009–2010 IMPACT Rating	Number of Teachers	Number Retained	Proportion Retained for 2010–2011 School Year
Groups 1 Through 8 (all teachers)			
Highly effective (350 to 400 points)	543	484	89.1%
Effective (250 to 349 points)	2,471	2,057	83.2%
Minimally effective (175 to 249 points)	459	321	69.9%
Ineffective (100 to 174 points)	62	0	0.0%
All IMPACT ratings	3,535	2,862	81.0%
Group 1 (teachers with IVA scores)			
Highly effective (350 to 400 points)	37	36	97.3%
Effective (250 to 349 points)	305	259	84.9%
Minimally effective (175 to 249 points)	124	94	75.8%
Ineffective (100 to 174 points)	10	0	0.0%
All IMPACT ratings	476	389	81.7%
Groups 2 Through 8 (teachers without IVA scores)			
Highly effective (350 to 400 points)	506	448	88.5%
Effective (250 to 349 points)	2,166	1,798	83.0%
Minimally effective (175 to 249 points)	335	227	67.8%
Ineffective (100 to 174 points)	52	0	0.0%
All IMPACT ratings	3,059	2,473	80.8%

Source: Mathematica calculations based on administrative data from DCPS.

Notes: The table includes all 3,535 Group 1 through 8 teachers in the 2009–2010 school year. Teachers are considered to have exited DCPS if they do not receive an IMPACT score in Groups 1 through 7 in the 2010–2011 school year. IMPACT classified teachers into eight groups in the 2009–2010 school year, and seven in 2010–2011.

Teacher experience and IMPACT scores

More experienced DCPS teachers received higher IMPACT scores on average, than less experienced teachers. Note, however, that most teachers new to DCPS were rated effective or highly effective. During the 2010–2011 school year, about 18 percent of teachers were new to DCPS, and about 27 percent of teachers were in their second year of teaching in DCPS.⁵

In Table 2, we show the proportions of novice—separately for new and second-year teachers—and more experienced teachers in each of the four IMPACT effectiveness categories. Novice teachers—those in their first two years of teaching—were less likely to earn ratings of highly effective and more likely to earn ratings of minimally effective or ineffective. Eight percent of new teachers, 13 percent of second-year

⁵ Earlier research has demonstrated that teachers tend to improve in their first few years of teaching (Rockoff, 2004; Hanushek et al., 2005; Harris & Sass, 2010).

teachers, and 17 percent of other returning teachers achieved ratings of highly effective in the 2010–2011 school year.

Table 2. Effectiveness of New and Returning Teachers to DCPS, 2010–2011 School Year

2010–2011 IMPACT Rating	New Teachers		Second-Year Teachers		All Other Returning Teachers	
	Number of Teachers	Proportion of All New Teachers	Number of Teachers	Proportion of All Second-Year Teachers	Number of Teachers	Proportion of All Other Returning Teachers
Highly effective (350 to 400 points)	48	7.7%	118	12.5%	322	16.8%
Effective (250 to 349 points)	440	71.0%	640	68.0%	1,348	70.2%
Minimally effective (175 to 249 points)	115	18.5%	157	16.7%	228	11.9%
Ineffective (100 to 174 points)	17	2.7%	26	2.8%	22	1.1%
All Teachers	620	100%	941	100%	1,920	100%

Source: Mathematica calculations based on administrative data from DCPS.

Notes: The table includes all 3,481 Group 1 through 8 teachers in the 2010–2011 school year. New teachers in the 2010–2011 school year did not teach during the 2009–10 school year. Second-year teachers taught during the 2009–10 school year, but not in the previous year. All other returning teachers taught during both the 2008–09 and 2009–10 school years.

The combined ratings of minimally effective and ineffective characterized 21 percent of new teachers, 19 percent of second-year teachers, and 13 percent of other returning teachers. The IMPACT scores also reflected the relationship between IMPACT ratings and experience; the average new teacher received an IMPACT score of 283 points, and the same averages were 291 points for second-year teachers and 303 for other returning teachers.

Novice teachers may be less effective than veteran teachers, but they could nonetheless become more effective over time. The higher effectiveness of second-year teachers relative to new teachers could reflect the growth in effectiveness attributable to experience, differences in the quality of the two cohorts of new hires, or both. Even if less experienced teachers become more effective over time, they were less effective on average during the 2010–2011 school year.

Our findings on the relationships between teacher retention, experience, and effectiveness are consistent with progress on the IMPACT system’s primary goal: to improve the effectiveness of DCPS teachers. For teachers identified by IMPACT as

the most effective, DCPS retains them at a higher rate than it does less effective teachers.

However, to the extent that IMPACT misclassifies teachers—no measure of teacher effectiveness is perfect—the teachers retained by IMPACT may be less effective than our results indicate, and dismissed teachers may be more effective than our results indicate. Additionally, the IVA component of some teachers' IMPACT scores may be affected by compromised test scores, though DCPS has stated that they have not found evidence of widespread cheating.

We also found that most new teachers hired to replace ineffective teachers earned ratings of effective or highly effective. However, even though most new teachers to DCPS receive high IMPACT ratings, these teachers are on average less effective than their more experienced colleagues based on IMPACT scores. The district's success in improving teacher effectiveness may depend on whether and how much new teachers improve over time.

2. Distribution of Effective DCPS Teachers

Access to effective teachers in DCPS may be related to individual student or school-level poverty. Recent work has shown evidence of gaps in the effectiveness of teachers based on student poverty (Tennessee Department of Education, 2007; Hahnel & Jackson, 2012), although some studies have shown mixed results, depending on districts or grade levels studied (Sass et al., 2010; Glazerman & Max, 2011).

To the extent that unequal access to effective teachers poses a challenge in DCPS, IMPACT may help equalize access over time. For example, through IMPACT, DCPS offers monetary incentives that may induce highly effective teachers to teach in high-poverty schools at the same time it dismisses ineffective teachers. Such incentives could improve the average quality of teachers overall in DCPS as well as the quality of teachers in high-poverty schools. If teacher effectiveness was related to school poverty before IMPACT, then high-poverty schools—those with the highest concentrations of ineffective teachers—may see the most teacher turnover as a result of IMPACT.

On average, teachers in high-poverty schools received lower IMPACT scores than teachers in low-poverty schools. We found that, on average, teachers in low-poverty schools were more likely to earn ratings of highly effective and receive higher IMPACT scores. Whereas 28 percent of teachers in low-poverty schools received highly effective ratings, only 10 percent in medium-poverty schools and 7 percent in high-poverty schools (first row of Table 3) achieved ratings of highly effective. The average teacher in a low-poverty school received an IMPACT score of 320 points (second panel of Table 3) in contrast to a score that was 31 points lower for teachers in medium-poverty schools and 33 points lower for teachers in high-

poverty schools. Each of the individual components used to calculate IMPACT scores also reflected the higher score for teachers in low-poverty schools. The components are scored on a scale of 1.0 through 4.0, except for the Core Professionalism component, which is scored on a scale of 0 (best) to -40 (worst).

Teachers in high-poverty schools were more likely than teachers in medium- or low-poverty schools to leave DCPS. Teachers in high-poverty schools were less likely to remain in the same school between the 2009–10 and 2010–2011 school years. In the top panel of Table 4, we show the proportion of teachers in low-, medium-, and high-poverty schools who remained in the same school (“stayers”), moved between two schools (“movers”), and left DCPS between these years (“leavers”). Whereas 83 percent of teachers in low- and medium-poverty schools remained in the same school from one year to the next, only 62 percent of teachers in high-poverty schools did so (first row of Table 4). The difference primarily reflects a higher proportion of teachers in high-poverty schools leaving DCPS (third row of Table 4).

Table 3. Teacher Effectiveness by School Poverty in DCPS, 2010–2011 School Year

	School Poverty Subgroup			All Schools
	Low-Poverty	Medium-Poverty	High-Poverty	
Percentage of Teachers with a 2010-2011 IMPACT Rating of:				
Highly effective (350 to 400 points)	28.4%	9.6%	7.2%	13.4%
Effective (250 to 349 points)	64.3%	71.9%	72.4%	70.2%
Minimally effective (175 to 249 points)	6.2%	16.3%	18.5%	14.6%
Ineffective (100 to 174 points)	1.1%	2.2%	1.8%	1.8%
Total	100.0%	100.0%	100.0%	100.0%
Average 2010–2011 IMPACT Score	320	289	287	296
Average Score by Component:				
Teaching and Learning Framework	3.2	3.0	2.9	3.0
Commitment to the School Community	3.4	3.2	3.2	3.2
Individual Value Added	2.9	2.4	2.4	2.5
School Value Added	3.0	2.4	2.4	2.6
Teacher-Assessed Student Achievement Data	3.3	2.9	3.0	3.0
Average Core Professionalism Penalty	-2.5	-4.0	-3.6	-3.5
Number of Teachers	818	1,492	1,091	3,401

Source: Mathematica calculations based on administrative data from DCPS.

Notes: The table includes the 3,401 Group 1 through 8 teachers in the 2010–2011 school year teaching in a school for which school poverty rates were available. School poverty is based on the proportion of students in the school eligible for FRPL. Low-poverty schools have less than 60 percent of students who are eligible, medium-poverty schools have between 60 and 80 percent of students who are eligible, and high-poverty schools have more than 80 percent of students who are eligible. Average scores for IMPACT components include only teachers with a valid score on the component.

Teachers in high-poverty schools who left were less effective on average than teachers who left medium- or low-poverty schools. The higher proportion of leavers in high-poverty schools could reflect an effort to dismiss the least effective teachers; as shown in Table 3, high-poverty schools tend to have less effective teachers. We show in the second panel of Table 4 that the teachers who left DCPS from high-poverty schools had an average IMPACT score of 260. By comparison, leavers from medium-poverty schools had an average score of 278, and leavers from low-poverty schools had an average score of 304. Not all exits from low-poverty schools, however, result from dismissals; a score of 260 is still 11 points above the threshold rating of an effective teacher rather than a minimally effective teacher.

Even so, 37 percent of leavers from high-poverty schools were minimally effective or effective, whereas 22 percent of leavers from medium-poverty schools and 10 percent of leavers from low-poverty schools were minimally effective or effective. Many of the most effective teachers who were not retained in DCPS exited from low-poverty schools; of the highly effective teachers not retained, 45 percent exited from low-poverty schools.

Teachers who stayed at their schools were more effective on average than teachers who left. In all types of schools, stayers had higher average IMPACT scores than movers or leavers. For example, teachers who remained in their low-poverty schools achieved an average IMPACT score of 327, which was higher than the average score of 296 for movers from these schools and higher than the average score of 304 for teachers who left DCPS from these schools (first column of second panel of Table 4). The stayers in medium- and low-poverty schools were also more effective on average than movers and leavers, although all averages were lower for teachers in these schools.

Dismissals of minimally effective or ineffective teachers alone cannot explain the difference in the rate of leavers between medium- and high-poverty schools. Whereas medium-poverty schools retained more of their teachers, teachers in medium-poverty schools are not substantively more effective than those in low-poverty schools (Table 3). One possibility is that teachers in high-poverty schools may be more likely to leave DCPS because of challenging working conditions in their schools.

Table 4. Amount of Teacher Turnover and Effectiveness of Teachers by Mobility Category and School Poverty in DCPS, 2010–2011 School Year

	School Poverty Subgroup			All Schools
	Low-Poverty	Medium-Poverty	High-Poverty	
Percentage				
Stayers	83.0%	83.3%	61.6%	74.9%
Movers	3.8%	7.5%	6.0%	6.0%
Leavers	13.2%	9.2%	32.4%	19.1%
Total	100.0%	100.0%	100.0%	100.0%
Average 2009–2010 IMPACT Score				
Stayers	327	299	294	304
Movers	296	283	289	287
Leavers	304	278	260	270
Number of Teachers	802	1,312	1,327	3,441

Source: Mathematica calculations based on administrative data from DCPS.

Notes: The table includes the 3,416 Group 1 through 8 teachers in the 2009–2010 school year teaching in a school for which school poverty rates were available. Teachers in the “stayers” category continue teaching at the same school, “movers” transfer to a different school within the district, and “leavers” leave teaching in the district. These categories are based on changes in teaching assignments between the 2009–2010 and 2010–2011 school years. School poverty is based on the proportion of students in the school eligible for FRPL. Low-poverty schools have less than 60 percent of students who are eligible, medium-poverty schools have between 60 and 80 percent of students who are eligible, and high-poverty schools have more than 80 percent of students who are eligible.

Evidence suggests that DCPS has room to improve if an equitable distribution of teacher effectiveness, as measured by IMPACT, is a goal for the district. On average, teachers in high-poverty schools received lower IMPACT scores than teachers in low-poverty schools, and teachers in high-poverty schools were more likely to leave DCPS. Over time, IMPACT may help distribute teachers more equitably across schools as ineffective teachers in high-poverty schools are dismissed or replaced and highly effective teachers take advantage of incentives to remain in DCPS. In the meantime, high-poverty schools have fewer highly effective teachers and experience the most turnover. Additionally, some effective teachers leave high-poverty schools by moving to other DCPS schools.

3. Principal Experience and Tenure

Most principals had 3 or fewer years of experience in DCPS. Of the 113 principals leading a DCPS school in 2010–2011, 27 percent had one year of experience, and 37 percent had 2 or 3 years of experience in DCPS (Table 5). The remaining 36 percent had 4 or more years of experience. Of the most experienced

principals, 10 had led schools in DCPS for 10 or more years.⁶ Principals did not typically move between schools. Only 2 of the 113 DCPS principals in 2010–2011 taught in more than one school between the 2000–2001 and 2010–2011 school years.

Table 5. Principal Experience in DCPS, 2010–2011 School Year

Years of Experience in DCPS	Number of Principals	Number as Proportion of All DCPS Principals
1 year	31	27.4%
2 to 3 years	42	37.2%
4 to 6 years	22	19.5%
More than 6 years	18	15.9%
All Principals	113	100%

Source: Mathematica calculations based on administrative data from DCPS.

Note: Experience in DCPS is the number of years the principal led any DCPS school, including the 2010–2011 school year.

Principals in high-poverty schools were more likely to have the least experience in DCPS than principals in medium- or high-poverty schools.

Whereas 5 percent of principals in low-poverty schools were first-year principals in DCPS, 32 percent of principals in medium-poverty schools and 33 percent in high-poverty schools were first-year DCPS principals (Table 6). The higher proportion of first-year principals in high-poverty schools reflects a lower proportion of principals with moderate levels of experience.

Principals in medium- and high-poverty schools were less likely than principals in low-poverty schools to have between four and six years of experience. Forty-three percent of principals in low-poverty schools had four to six years of experience in DCPS compared to 14 percent of principals in medium-poverty schools and 16 percent of principals in low-poverty schools.

In contrast, the proportions of principals with more than six years of experience were similar across the three groups of schools. Of principals in low-poverty schools, 14 percent had more than six years of experience, as did 18 percent of principals in medium-poverty schools and 13 percent of principals in high-poverty schools.

⁶ The distribution of experience in DCPS is consistent with principal experience in other urban districts such as New York City (Clark, Martotell, & Rockoff, 2009), and in the state of North Carolina (Dhuey & Smith, 2012b), although principals in Texas are more experienced on average (Branch, Hanushek, & Rivkin, 2012).

Table 6. Principal Experience by School Poverty, 2010–2011 School Year

Years of Experience in DCPS	School Poverty Subgroup			All Schools
	Low-Poverty	Medium-Poverty	High-Poverty	
1 year	4.8%	31.8%	33.3%	27.3%
2 to 3 years	38.1%	36.4%	37.8%	37.3%
4 to 6 years	42.8%	13.6%	15.6%	20.0%
More than 6 years	14.3%	18.2%	13.3%	15.4%
Total	100.0%	100.0%	100.0%	100.0%
Number of Principals	21	44	45	110

Source: Mathematica calculations based on administrative data from DCPS.

Notes: Experience in DCPS is the number of years the principal led any DCPS school.

School poverty is based on the proportion of students in the school eligible for FRPL. Low-poverty schools have less than 60 percent of students who are eligible, medium-poverty schools have between 60 and 80 percent of students who are eligible, and high-poverty schools have more than 80 percent of students who are eligible. The table excludes principals in three schools for which FRPL eligibility was not available.

Evidence for the distribution of experienced principals across schools is similar to our results for the distribution of effective teachers. Principals in high-poverty schools were more likely to be those with the least experience in DCPS. If the most experienced principals are also the most effective, then more of the most effective principals in DCPS are leading low-poverty schools. Our conclusions are limited, however, because principal experience is not a precise measure of effectiveness.

Questions for Further Analysis

The use of IMPACT raises a number of important questions.

With respect to teachers:

- What is the estimated extent of misclassification, i.e., the degree to which teachers retained based on IMPACT may be less effective than predicted and the degree to which teachers dismissed based on IMPACT would have been effective in reality?
- To what extent does IMPACT measure teacher *improvement* over time? Are there differences across schools in how much teachers hired since IMPACT improve with experience?
- What are the possible reasons that teachers in high-poverty schools received lower IMPACT scores than teachers in low-poverty schools, and that teachers in high-poverty schools appear to be more mobile?
- As DCPS hires more effective teachers (as measured by IMPACT) into low-poverty schools, do retention rates in these schools increase?
- Have the gaps in teacher effectiveness (as measured by IMPACT) between schools widened or narrowed since the development and implementation of this particular approach to measuring teacher effectiveness?
- What policies and practices influence teachers with different degrees of effectiveness (as measured by IMPACT) to work in high-poverty schools?
- Are results consistent across different measures of teacher effectiveness, including those not included in IMPACT?

With respect to principals:

- What are likely reasons for the observation that most principals in 2010–2011 had three or fewer years of experience in DCPS, nearly all principals had led only one DCPS school, and principals in high-poverty schools were more likely to be those with the least experience in DCPS?

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Technical Appendix to Section II: Data and Analysis

We relied on data provided by DCPS that include (1) IMPACT scores and effectiveness categories for all DCPS teachers in the 2009–2010 and 2010–2011 school years, (2) a list of teachers teaching in the 2008–2009 school year, (3) principals' school assignments for the 2000–2001 through 2010–2011 school years, and (4) individual student background characteristics.

We calculated teacher experience and retention rates by linking teachers across years in the IMPACT data to the 2008–2009 teacher list. The IMPACT data include all teachers in IMPACT Groups 1 through 8. If a teacher was not listed in consecutive IMPACT files, we assumed that the teacher was not retained for the second year. These files include teachers only; that is, teachers not retained for the second year may include some who assumed administrative roles. We distinguished new teachers and second-year teachers from all other returning teachers by linking teachers across consecutive years in the data.

New teachers in the 2010–2011 school year were those not teaching during the 2009–2010 school year. Second-year teachers taught during the 2009–2010 school year, but not during the previous year. All other returning teachers taught during both the 2008–2009 and 2009–2010 school years.

Our approach reflects the best data available to us, yet we recognize that teachers on leave for the 2009–2010 or 2008–2009 school years are misclassified as new or second-year teachers.

We defined low-, medium-, and high-poverty schools based on the proportion of students eligible for free or reduced-price lunch (FRPL) within the school. We used student background characteristics for the 2010–2011 school year to calculate students' poverty status. We classified schools with less than 60 percent of students with FRPL status as low-poverty schools and those with more than 80 percent of students with FRPL status as high-poverty schools. According to these definitions, 22 percent of DCPS schools are classified as low poverty, 40 percent as medium poverty, and 38 percent as high poverty.

Alternatively, 26 percent of DCPS students attend low-poverty schools, 41 percent attend medium-poverty schools, and 33 percent attend high-poverty schools. Some DCPS schools—called Provision 2 schools—did not collect FRPL eligibility for individual students in the 2010–2011 school year. In such cases, we used the FRPL status of students from a previous year in which FRPL status was collected, typically the 2009–2010 school year. If a student's FRPL status was unknown in the 2009–2010 year, we retained the student's 2010–2011 status as reported in the background data, although the status from that year may not reflect the student's actual status.

We calculated principal experience and tenure in a school by using the data on principal school assignments. In several cases, two schools were combined into a single school as a result of school closures. In these cases, we treated both schools in the pair as the same school. Consequently, if a principal led a school that was combined and continued to lead the combined school in 2010–2011, then the principal's tenure in the combined school includes the school years before the year in which the schools were combined.

Section III

Academic Plans, School Year 2010-2011

PERAA contains no specifications for the academic plans of public schools in DC, but it assigned functions related to academic plans to several offices and boards. The Mayor has authority over curricula (Sec. 103(a)). The DCPS Chancellor “exercise[s] the powers necessary and appropriate to operate the schools and school system” (Sec. 105(c)(3)). The State Board of Education approves state academic standards, having considered OSSE’s recommendations regarding standards (Sec. 403 (a)(2)). The PCSB grants charters based after a review of proposed academic plans, and it has authority to revoke charters based on a school’s failure to meet academic expectations (Sec. 802(e)).

In this section of the report, we describe the adoption and implementation of academic plans during 2010-2011. The year included the adoption of Common Core State Standards and the launch of support for their implementation in DCPS and the public charter schools participating in Race to the Top. It also included expansion of some curriculum offerings within DCPS as well as new additions to the public school designs available to students in both sectors.

For DCPS, key precursors of the year’s work were two documents related to academics that had been issued in 2009: a five-year action plan, and a Teaching and Learning Framework. A rationale for greater rigor and more specialized programs was advanced in *Making Student Achievement the Focus: A Five-Year Action Plan for the District of Columbia Public Schools*. This plan had not minced words, stating:

- Our schools are under-performing and do not provide compelling, rigorous programs to students and their families.
- Only 7 of DCPS’s approximately 121 schools offer specialized city-wide programs; among them, five are in NW and two are NE, making them largely inaccessible to many of the highest-need students in the District.

A related document, the Teaching and Learning Framework, was intended to guide improvements in classroom instruction. It provided guidance and templates on creating standards-based unit and daily lesson plans; on designing objective-driven unit and formative assessments; and on pacing, student grouping, and adapting instruction for students with multiple learning styles.

Adopting Academic Standards and Planning for Their Implementation

The State Board of Education voted in July 2010 to adopt Common Core State Standards (CCSS) for English/ language arts (ELA) and mathematics for grades K-12 in July 2010. Before recommending adoption of these standards, OSSE had conducted a crosswalk of current state standards and the Common Core State Standards and facilitated eight review panels of teachers and content experts. And,

in developing the successful Race to the Top application, OSSE convened a task force on CCSS, which held regular meetings and advised OSSE on its professional development strategy for LEA implementation of the standards.

During 2010-2011, OSSE approved the CCSS transition plans of all participating LEAs, offered professional development to every teacher and administrator on CCSS, and continued to develop plans for professional development workshops on CCSS and lesson planning. The U.S. Department of Education (ED) report on DC's Race to the Top implementation for 2010-2011 stated that all participating LEAs developed transition plans for implementing the new standards. The report identified challenges in the early implementation of CCSS, however. It stated that "some LEAs have at times found the implementation of the CCSS unclear" and that "the District's RTT team has struggled to coordinate efforts across the agency, leaving LEAs and other stakeholders unsure of which OSSE department to approach with concerns."

Under Race to the Top, OSSE also began revising the DC CAS to align with the CCSS. OSSE reported that, "DC CAS will align 100 percent with the CCSS in ELA in 2012 and mathematics in 2013." ED reported that OSSE approved a set of vendors to provide aligned interim assessments and that all LEAs participating in RTT selected an approved vendor.

For several subjects not addressed in the CCSS, OSSE developed a task force focused on science, technology, engineering, and mathematics (STEM) education in December 2010. The task force partnered with local higher education institutions and business and industry groups to identify STEM priorities and develop a vision for supporting STEM education in the District.

An issue arose regarding high school graduation requirements passed by the pre-PERAA Board of Education. The previous board required high school students "to take at least two college-level or 'career preparatory' courses, write a thesis as juniors or seniors, and complete 'a culminating composition or project' to be presented before graduation." Citing limited past oversight of this requirement and the prospect of denying diplomas to seniors in May, the State Board of Education revised the legislative language to allow seniors to bypass these requirements.

During 2010-2011, DCPS hired a new Chief Academic Officer and developed its Academic Plan—the three-year academic road map that details DCPS's plans for the implementation of CCSS, development of scope and sequence documents and unit overviews for teachers, and adoption of paced interim assessments. DCPS produced curriculum maps and unit plans for ELA. In addition, DCPS reported in its FY11 Performance Accountability Report that it provided approximately 10 hours of CCSS training to teachers and 16 hours of training to school leaders.

New and Expanded Curriculum Offerings in DCPS

DCPS expanded the number of schools with specialized programs. For example, the 2010-2011 school year was the first year of implementation for 13 Catalyst Schools. DCPS had selected the participating schools in the previous year, with at least one school in each of the eight wards receiving support to develop its plans. Private funds supported this initiative: the Phillip L. Graham Fund, the Eugene and Agnes E. Meyer Foundation, and the CityBridge Foundation donated funds to the DC Public Education Fund to provide financial support to the Catalyst Schools project. Each school pursued one of the following themes, as described on the DCPS website:

- Catalyst STEM schools design classrooms, lessons, and school culture to highlight STEM issues and skills as a theme within all core subjects. In a STEM classroom, at any level and in any subject, students actively learn through discovery and hands-on lessons.
- Catalyst Arts Integration schools weave the arts – movement, dance, visual arts, and other forms—into the classroom curriculum and methods of learning.
- Catalyst World Cultures schools foster appreciation for cultural, linguistic, and ethnic diversity in students by exposing them to a curriculum that promotes critical thinking and a global perspective. We also intend for all students who attend a World Culture school to graduate with communicative and intercultural competence in a language other than English.

Another type of program expansion occurred when four schools (one middle and three elementary) received approval from the International Baccalaureate board to implement its program.

DCPS reported that it increased the number of AP courses available across the District from 106 to 123 courses, and that an additional 226 students took AP exams in 2011. All DCPS high schools offered AP courses.

Other additions and changes to curriculum included the following:

- piloting the Online College and Career Prep (OCCP) program in five high-need high schools and additional middle schools;
- reviewing the alignment of the DCPS Career and Technical Education curriculum with industry and academic standards and expanding partnerships with postsecondary institutions and industry groups; and
- expanding the number of schools using each of several reading interventions, including the Burst early literacy program (expanding into 12 more schools), the Wilson suite of reading interventions (starting up in 26 schools), the computer-based Imagine Learning program designed to accelerate English language acquisition (adopted by 7 more schools), and Scholastic's Reading Inventory and READ 180 (7 more schools).

The Portfolio of Schools in 2010-2011

Here, we describe changes in the set of schools that were operating (or planning their start-up) as of 2010-2011. We also describe the different levels of school autonomy found within DCPS.

Changes in Charter Schools

Among charter schools, some expanded; some lost their charters; and some new starts were approved:

- The PCSB approved the requests of several charter schools to increase their enrollment ceilings for the 2010-2011 school year. It also approved DC Prep's request to replicate its PS-3rd school and approved the campus expansions of three charters.
- As discussed in the subsection of this report on public accountability, the PCSB revoked the charter of Kamit Institute for Magnificent Achievers PCS prior to the start of the 2010-2011 school year. It also accepted WEDJ and Ideal Academy's decisions to close their 9-12 grade program.
- The PCSB received 19 charter applications and approved 4: Creative Minds, DC Scholars, BASIS DC, and LAYC Career Academy. The schools were given one year for planning, with launches expected for the 2012-13 school year.

DCPS Schools with Greater or Lesser Autonomy

Within DCPS, schools may gain or lose degrees of autonomy in their academic plans. Some are designated "autonomous schools." A school can apply for "autonomous" status if 75 percent of students are proficient in both mathematics and reading or if the school has averaged 10 percent growth in reading and mathematics over past three years. If the school demonstrates strong teaching and learning (from the Effective Schools Framework), the school can win increased control over funds (budget allocation), the option to forgo district professional development, and choice of curricula (e.g., textbooks).

Autonomous schools can expand their school day, shift money for positions required by the District, and use student assessment data, teacher evaluation, and input from teachers and parents to guide decisions. However, there are certain stipulations. For instance, if an autonomous school wants to expand the school day, it must negotiate with the Washington Teachers Union and does not receive extra funds to pay teachers overtime. In addition, while autonomous schools can change curricula, they only receive funds for textbooks and materials that have been adopted district wide.

In the DCPS Office of School Innovation, staff members are expected to serve as "boundary spanners" and communicate between autonomous schools and the district office. They must keep the district office informed about policy and suggest

changes. They must also help autonomous schools understand central office requirements.

In 2010-2011 there were seven autonomous schools, including three new ones as of that school year: Eaton, Murch, and Stoddert.

“Partnership schools” have been identified on the basis of low performance.

Outside management programs take control of these schools, with flexibility in instructional practices, staff, leadership, budgeting, and provisions under union contract. However, there are some restrictions on changing working conditions, changing the school schedule, or extending the school day.

Only four schools have been turned over to outside management. One elementary school was turned over to a partner management organization in the 2010-2011 school year (Stanton ES was turned over to Scholar Academies).

DCPS has control over partnership schools and can fire partners. In December 2010, Interim Chancellor Henderson dismissed the education management organization that had been managing Dunbar High School, Friends of Bedford.

As of 2010-2011, a network of nine schools from across the city and across performance levels worked together in the DC Collaborative for Change (DC3) to improve professional and leadership capacity. The central office gave these schools expanded freedom over operations, such as budgeting and professional development, in exchange for results. Flexibility over staffing and scheduling was written into the teacher contract. DC3 schools are clustered under a single instructional superintendent, and the District helped create a strategic plan aligned with DCPS’s Effective Schools Framework.

In 2010-2011, DC3 schools were able to pool funds for professional development and supplies for the first time. Principals could use a special budget code to allocate funds to DC3.

Questions for Further Analysis

The aims cited in the DCPS Five-Year Academic Plan—academic rigor and choices among specialized schools—did appear to guide policy choices made and carried out in 2010-2011. But beyond this report’s snapshot of changes in academic plans introduced in 2010-2011, the larger series of reports on PERAA will have the opportunity to address a range of academic initiatives and their implementation over time. Plans can change; implementation can succeed or falter. As DCPS and the PCSB exercise stewardship over the schools in their sector, and as OSSE moves forward on standards and assessments across sectors, plans can be assessed for their consistency, quality of execution, and results. Thus, we expect to pursue questions such as these:

- What have been the perceived strengths and weaknesses of the plans made for curriculum, instruction, and professional development in DC schools? Of the supports provided for school-level implementation of these plans?
- How has the portfolio of specialized program offerings evolved over time, within and across the traditional and charter sectors?

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Section IV

Student Achievement, 2006-2007 through 2010-2011

Overview

This section describes trends in student achievement using student-level administrative data on traditional public and charter schools in the District. We examine student performance in the 2006-2007 school year (the year before PERAA began) and in the four subsequent years, 2007-2008 through 2010-2011. In this first report, we do not evaluate changes in raw student test scores; that analysis will come in a later report. Our analysis focuses on proficiency levels, describing the fraction of students in the district that score at a 'proficient' or 'above proficient' level, and the fraction of students scoring below the 'basic' level, on standardized reading and math tests.

We find overall increases in student proficiency (and decreases in 'below basic' scores) during the five years examined, with most of the improvement occurring in the first few years. In the later years, scores either remained relatively constant, or in the case of reading scores, the fraction of students performing at the 'below basic' level began to rise somewhat.

CAUTION

It would be premature to attribute the observed changes in student proficiency directly to the PERAA legislation or its implementation for several reasons.

First, we cannot rule out the role of previous student performance trends, student compositional changes that we were unable to control for statistically, or policies or conditions outside of PERAA, as an explanation for the results. Our analysis also includes charter schools not subject to District policies.

Second, it is important to remember that our baseline period, school year 2006-2007, was the first time that students in the District took the DC CAS exam. The observed improvements, largely in the first few years, appear to be consistent with an "adjusting to a new test" hypothesis, and may suggest some significant fraction of the improvement is due to teachers and students becoming accustomed to the new test. We have no way of assessing the validity of this explanation with our current data.

Third, given the descriptive nature of the analysis, we are not able to assess the statistical significance of the changes in proficiency levels. A statistical assessment of changes in test performance will be included in our subsequent analysis of the raw student test scores.

Fourth, it is always the case that test scores provide estimates of broad and complex aspects of teaching and learning, and their precision should not be overstated.

Finally, as noted in the Foreword to this report, allegations of security breaches raise special concerns. We urge readers to recognize that until a more in-depth analysis of the scope and magnitude of the allegations is completed, the results presented here should be handled cautiously.

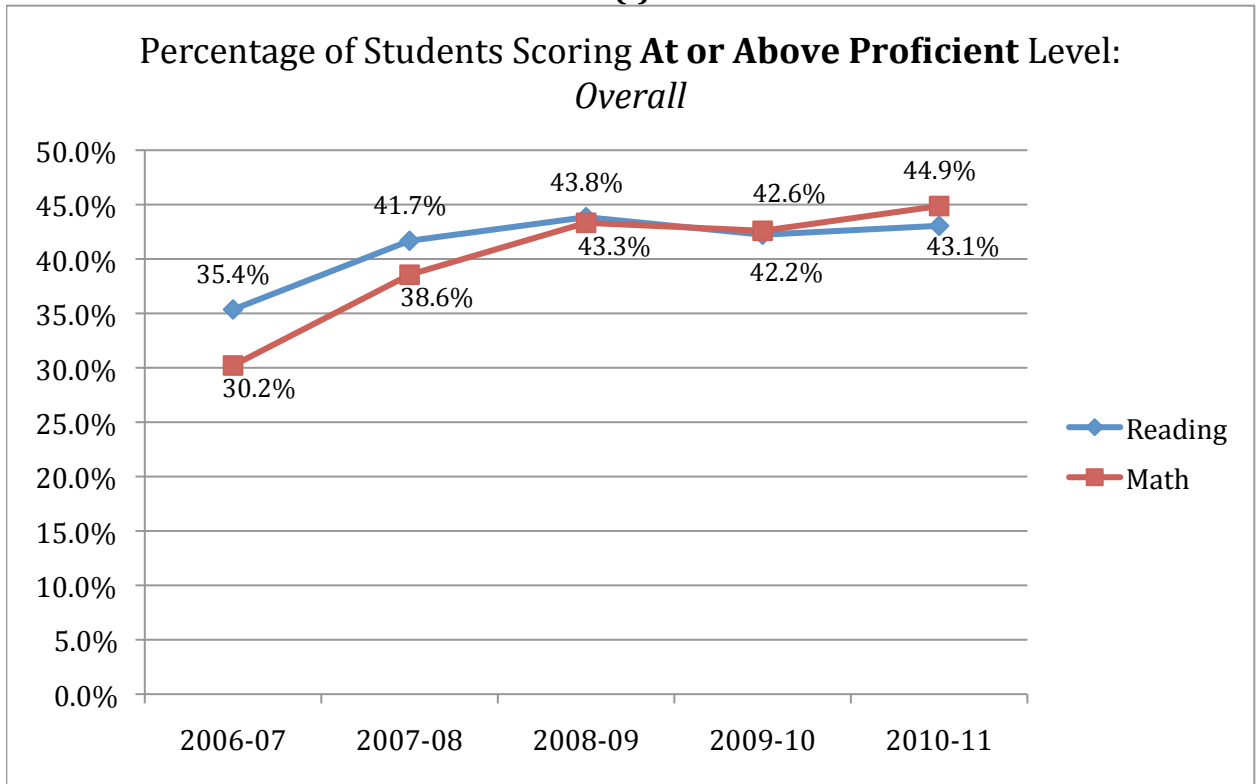
Results

We present a series of graphs describing student performance during the 2006-2007 school year (the year immediately before the PERAA initiative) and the following four years, 2007-2008 through 2010-2011. We focus on the changes in (1) the percentage of students scoring at or above the 'proficient' level; and (2) the percentage of students scoring below the 'basic' level. The body of the report describes how these two performance statistics have changed over time for various subgroups in the District. In the appendix, we show the same statistics adjusted for observable differences in student composition between groups and over time. Overall, the two sets of graphs generally show similar patterns.

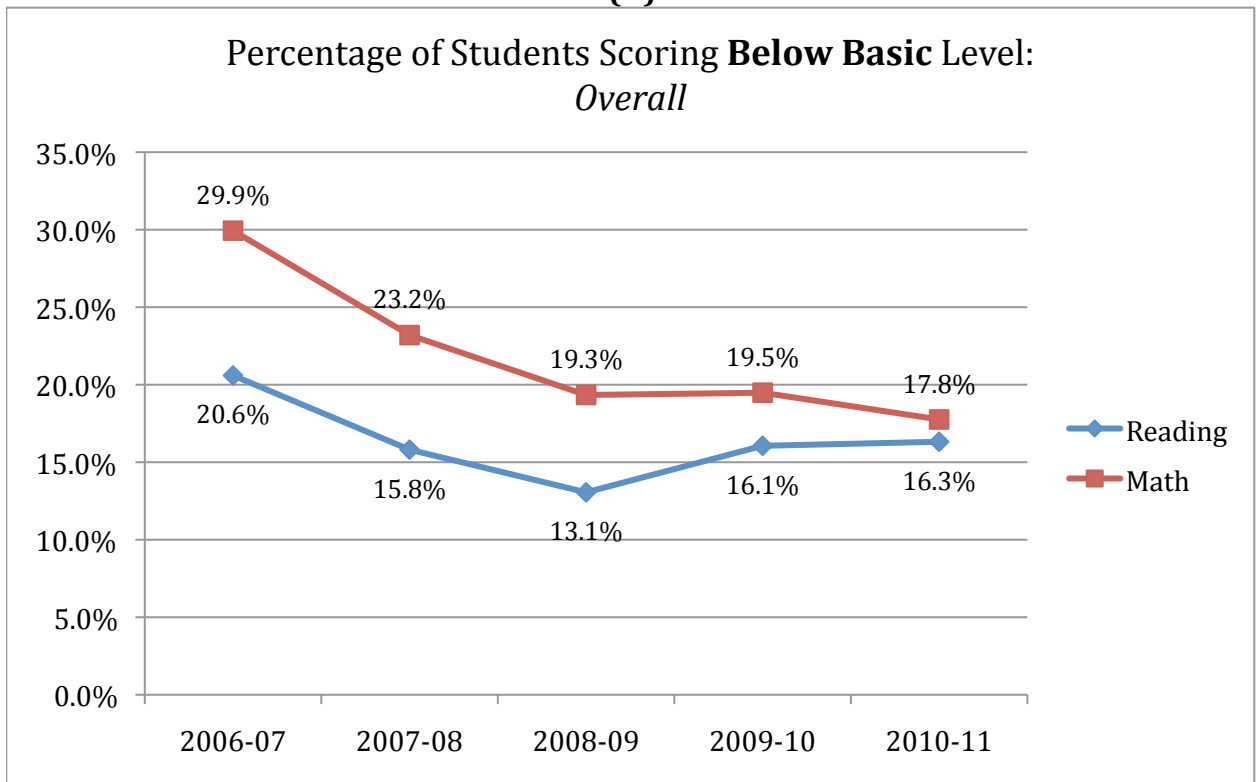
Figure 1 presents the reading and math proficiency rates for the five years studied (upper panel), as well as the 'below basic' rates (lower panel). Proficiency rates in reading and math increased by 8.4 and 13.1 percentage points respectively between 2006-2007 and 2008-2009, and then leveled off over the next two years. This increase in student performance did not occur only for those students at the top of the performance distribution; there also were decreases in the fraction of students classified as below basic. The percentage of students scoring 'below basic' dropped 4.8 and 6.7 percentage points in reading and math, respectively, in the first years of our analysis, before leveling off.

Figure 1

(I)



(II)



Figures 2Aa – 4Bb repeat this analysis, using different subsamples defined by school characteristics. The first of these figures, 2Aa through 2Bb, examine changes in student achievement by school ward.⁷ To make the graphs easier to read, wards are divided so that wards 1-4 are shown on one graph and wards 5-8 are shown on a subsequent graph.

Overall, student achievement, as measured by these proficiency levels, improved between 2006-2007 and 2010-2011 in all eight wards in the District. For reading scores (Figures 2Aa and 2Ab), the largest percentage point increases in proficiency were in Ward 1 (9.8 percentage points) and Ward 2 (8.1 percentage points). The smallest increases were in Wards 4 and 7 (5.6 percentage points). In terms of overall proficiency levels, during the time period examined, Ward 3 had the highest proficiency rates in reading, while Ward 8 had the lowest.

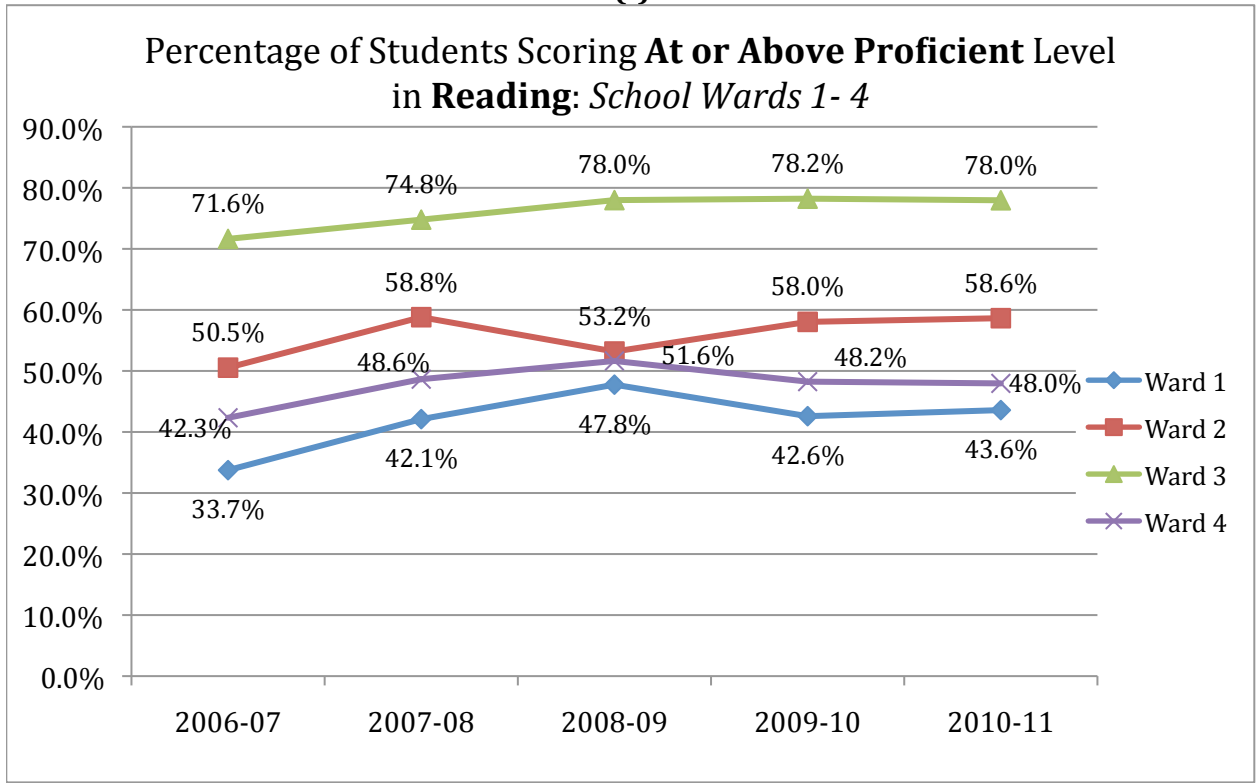
‘Below basic’ reading scores in all 8 wards decreased over the five year period, although many wards experienced decreases in the first few years followed by rises in the later years. The largest decrease in below basic scores over the years studied was in Ward 1 (7.2 percentage points) and the smallest decrease was in Ward 2 (0.7 percentage points).

A similar pattern holds for math achievement (Figures 2Ba and 2Bb), with overall increases in student achievement in all 8 wards. Ward 1 showed the largest increase in math proficiency (19 percentage points) and Ward 5 showed the smallest increase (7.8 percentage points). Again, the overall levels of math proficiency were highest in Ward 3 and lowest in Ward 8.

Following the same pattern of the reading scores, the overall fraction of students scoring ‘below basic’ in math decreased over the time period examined, but unlike the reading scores there was no rise in ‘below basic’ levels in the later years. ‘Below basic’ levels decreased the most in Ward 1 (15.7 percentage points) and Ward 8 (15.9 percentage points) and the least in Ward 3 (4.4 percentage points) and Ward 2 (5.7 percentage points).

⁷ The District of Columbia is divided into eight geographical regions called wards. See Technical Appendix B for school locations by ward in 2008-09. There is significant variation across wards in terms of household socio-economic status. For instance, in 2009, the median household income in Ward 8 was roughly \$44,000 versus \$257,000 in Ward 3.

Figure 2Aa
(I)



(II)

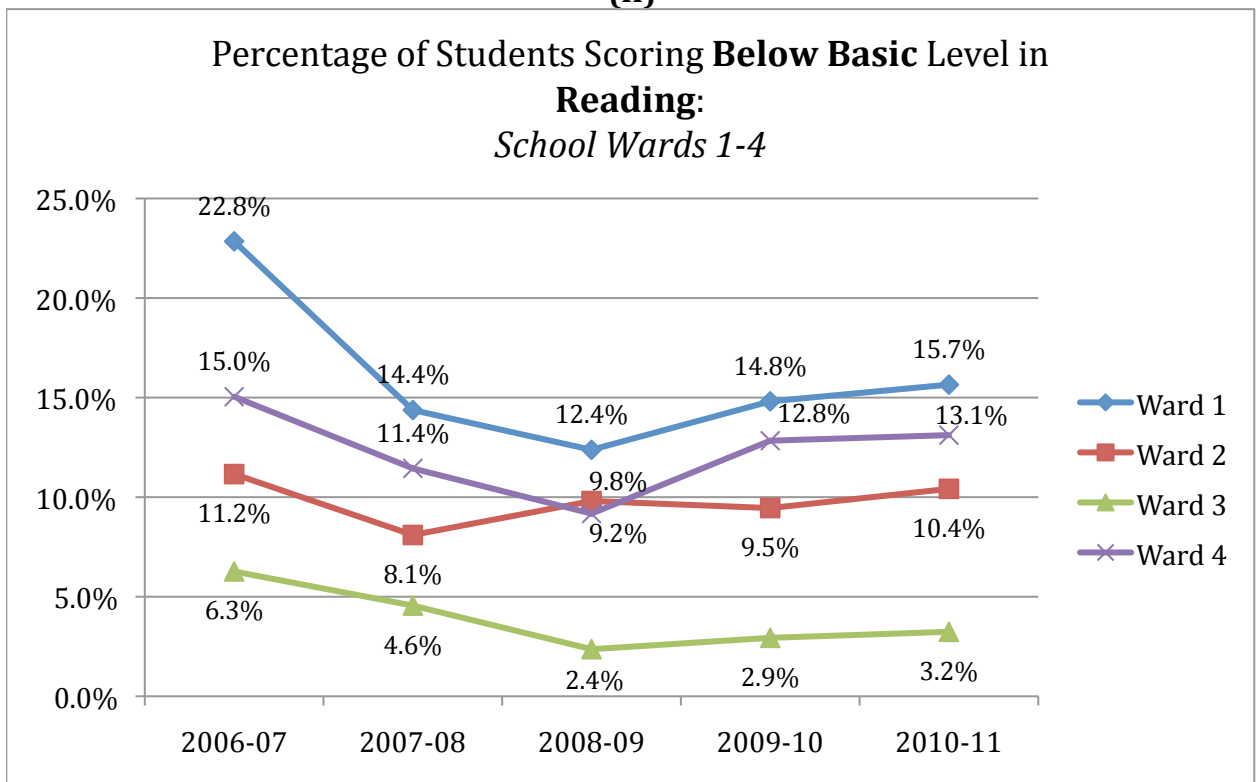
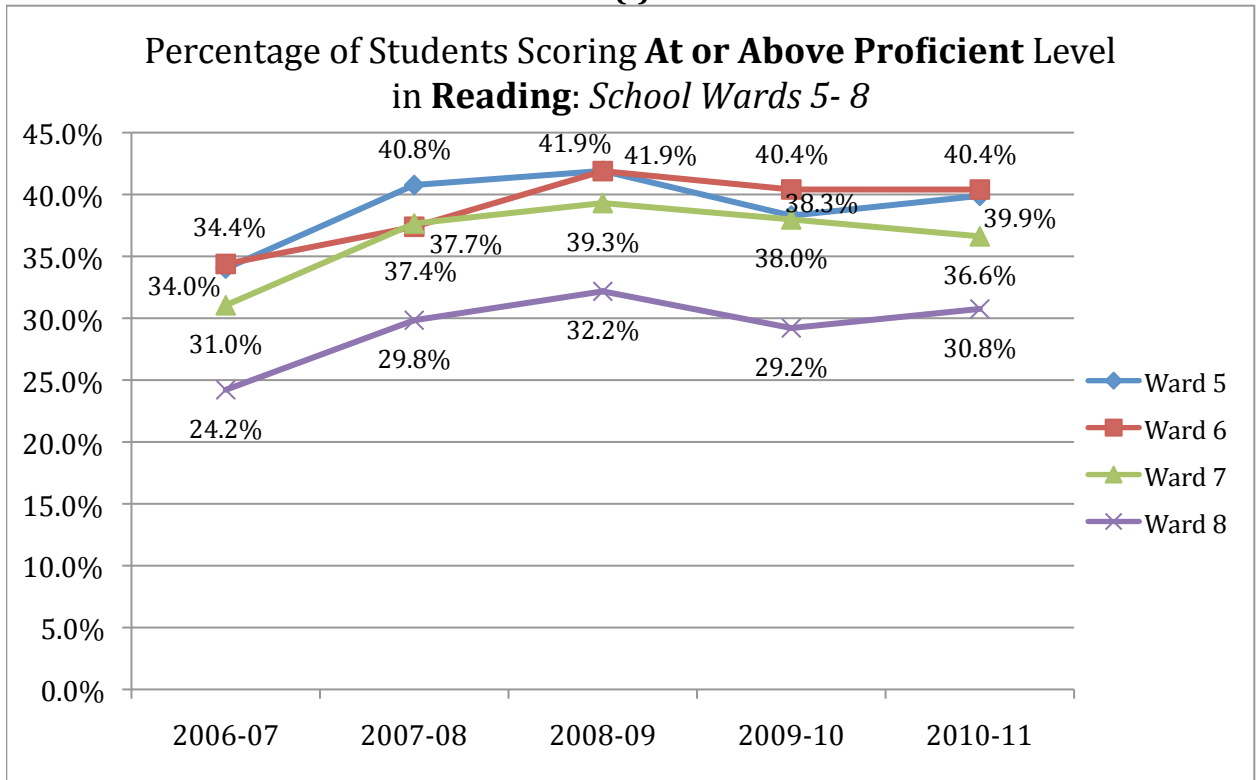


Figure 2Ab

(I)



(II)

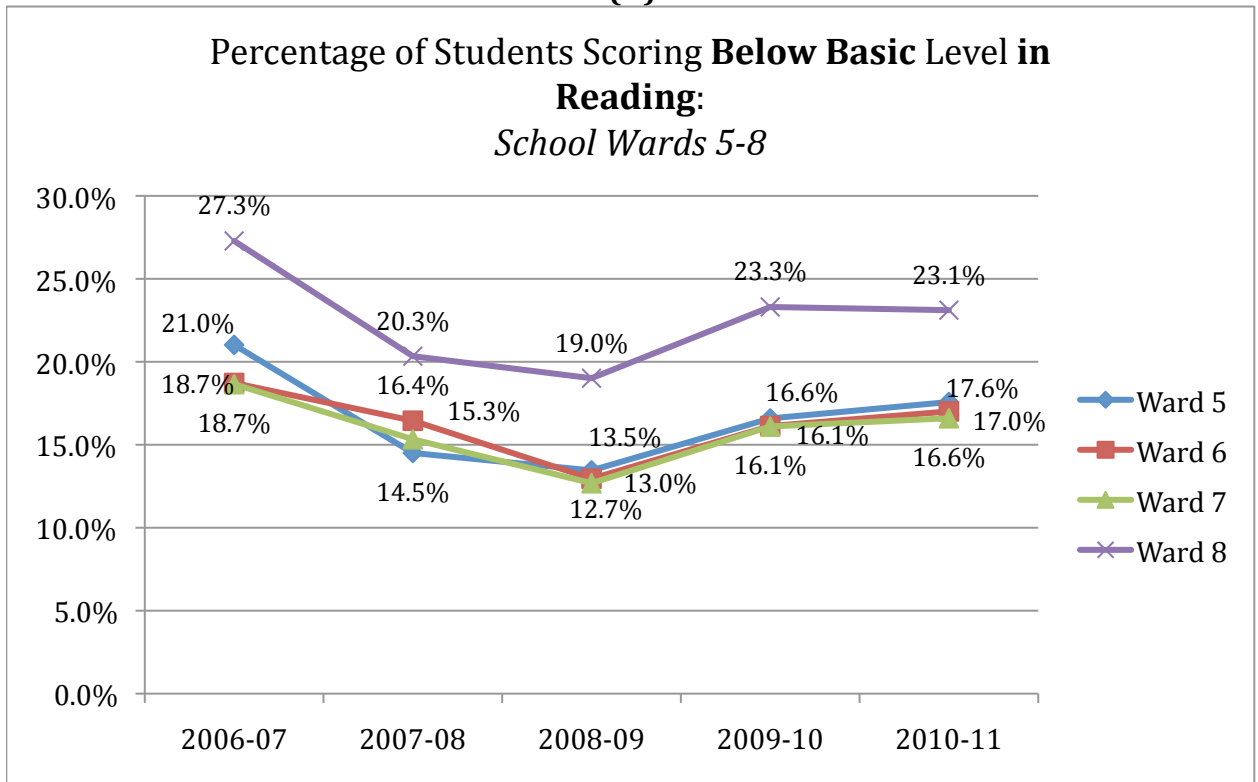
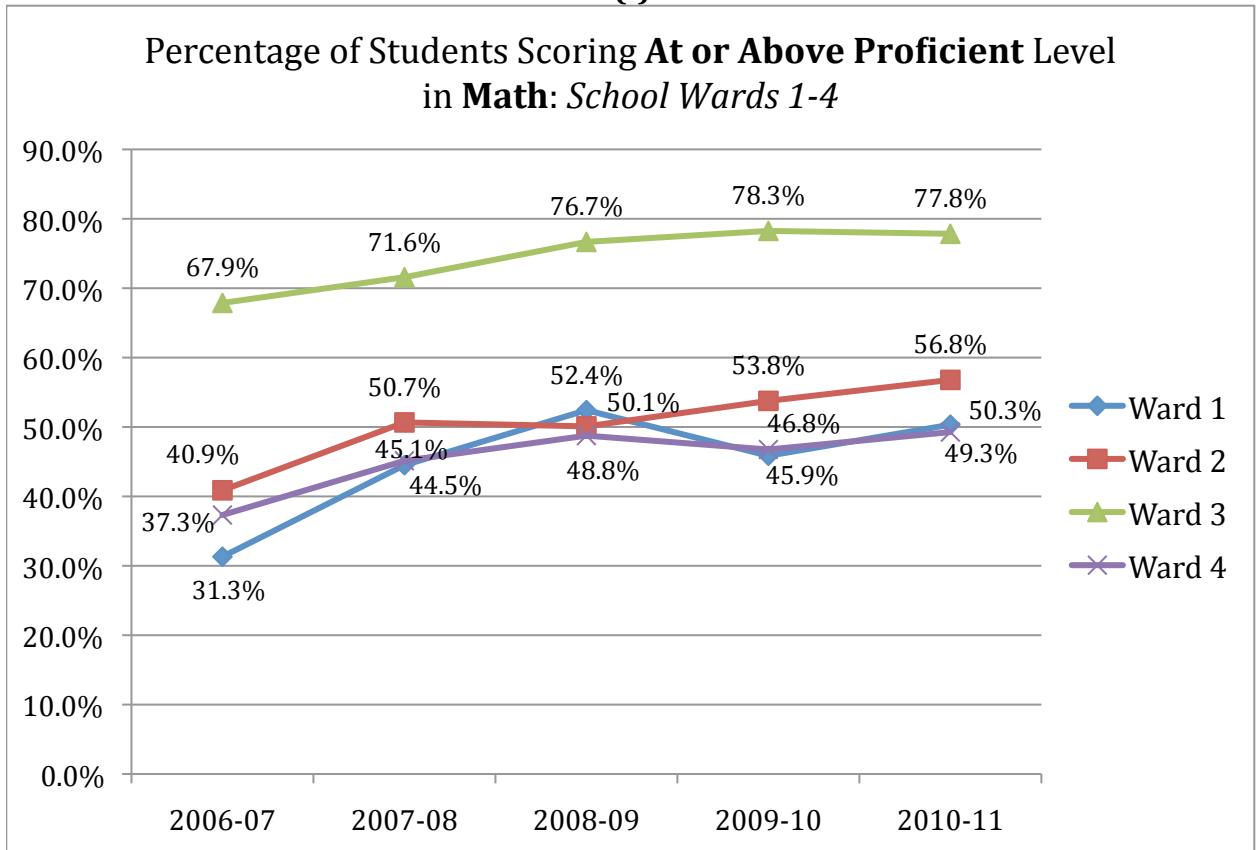


Figure 2Ba

(I)



(II)

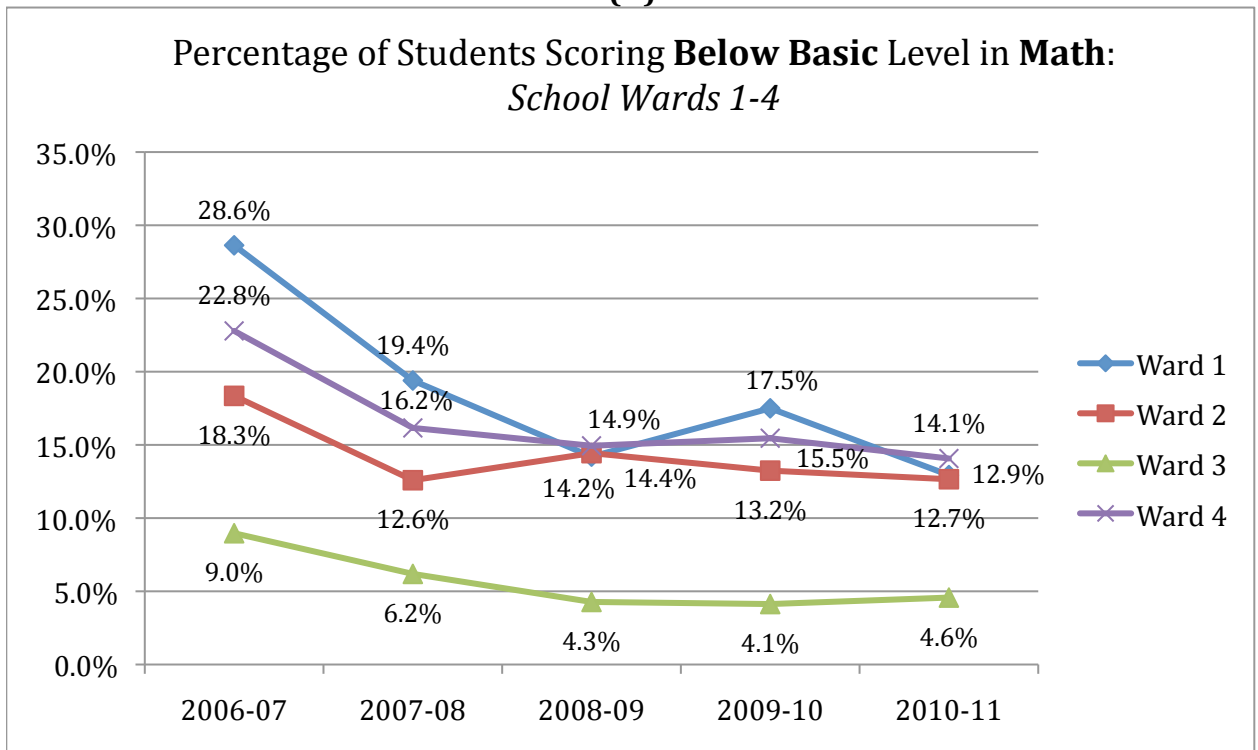
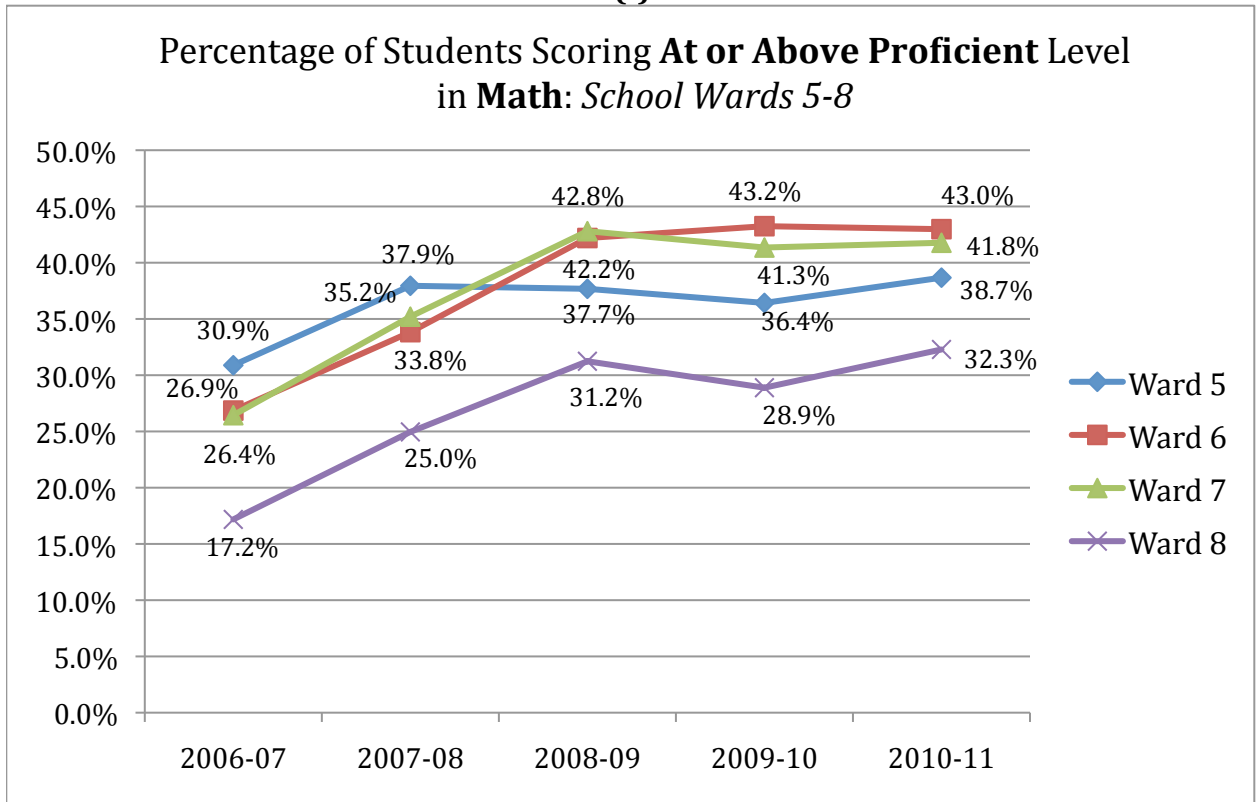
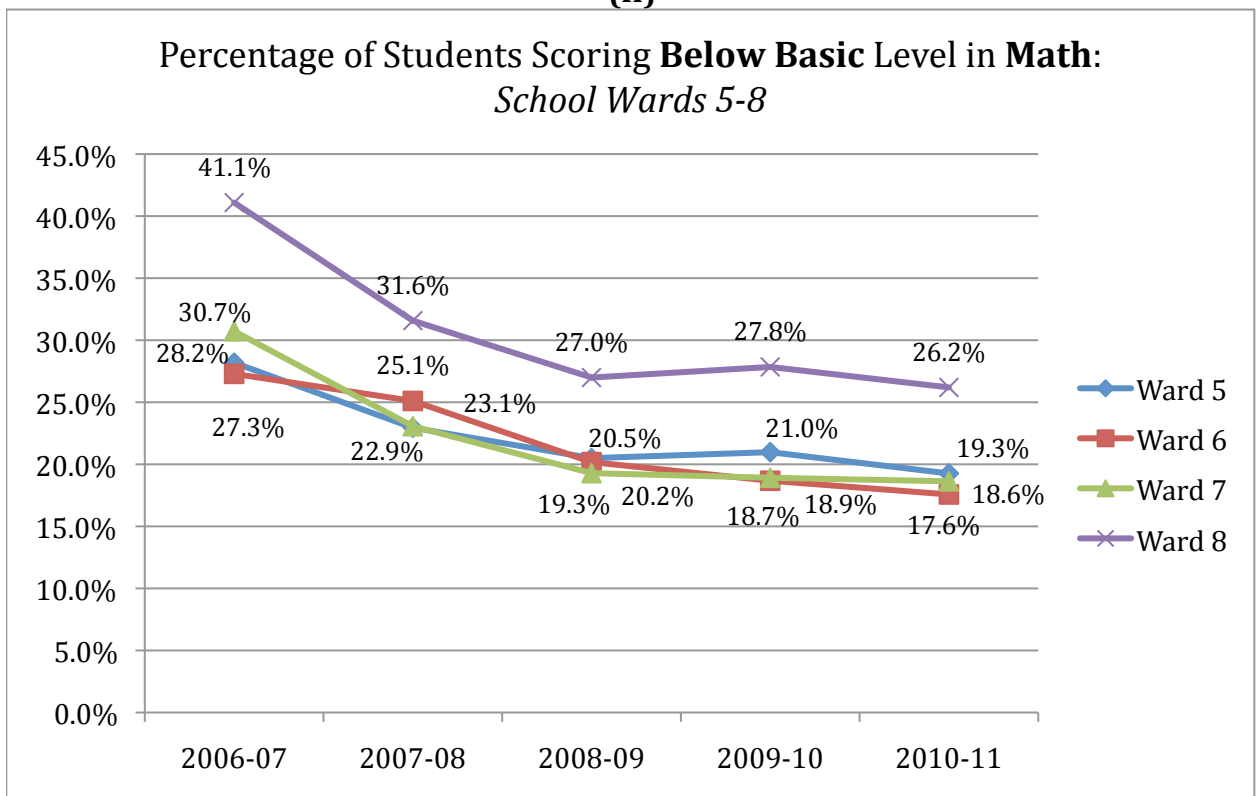


Figure 2Bb

(I)



(II)



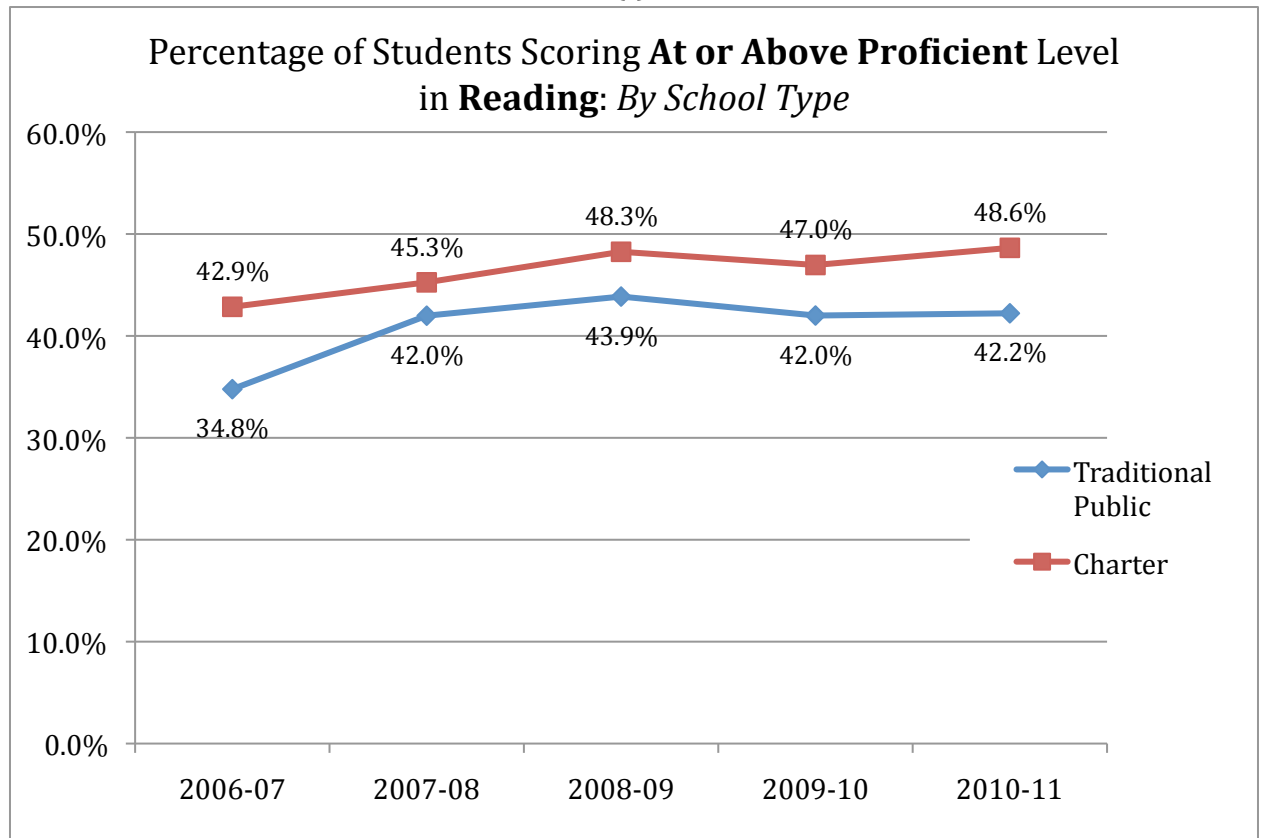
Figures 3A and 3B break down the analysis into school types: traditional public schools versus charter schools. While charter schools have higher student achievement on average in both reading and math, during the time period studied, both types of schools experienced comparable improvements in student performance.

Over the entire period, the fraction of students in traditional public schools performing at or above the 'proficient' level in reading increased by 7.4 percentage points, from 34.8 to 42.2 percent, whereas the fraction in charter schools increased 5.8 percentage points, from 42.9 to 48.6 percent. In both types of schools the rate of change was steeper in the earlier periods.

The fraction of low-performing students (those scoring below the 'basic' level) in traditional public schools decreased from 21.7 percent in 2006-2007 to 14.4 percent in 2008-2009; then rose to 17.8 percent by 2010-2011 (for a net decrease over time of 3.9 percentage points). In the charter schools, the fraction of students performing 'below basic' decreased from 10.4 percent to 8.5 percent over the first three years of the study, then rose to 11.0 percent by the final year (for a 0.6 percentage point net increase over the whole time period).

Traditional public and charter schools increased math proficiency by 14.5 and 12.4 percentage points respectively over the five years examined; and in both types of schools the fraction of students scoring 'below basic' decreased, by 11.7 percentage points in the traditional schools and 6.6 percentage points in the charters.

Figure 3A
(I)



(II)

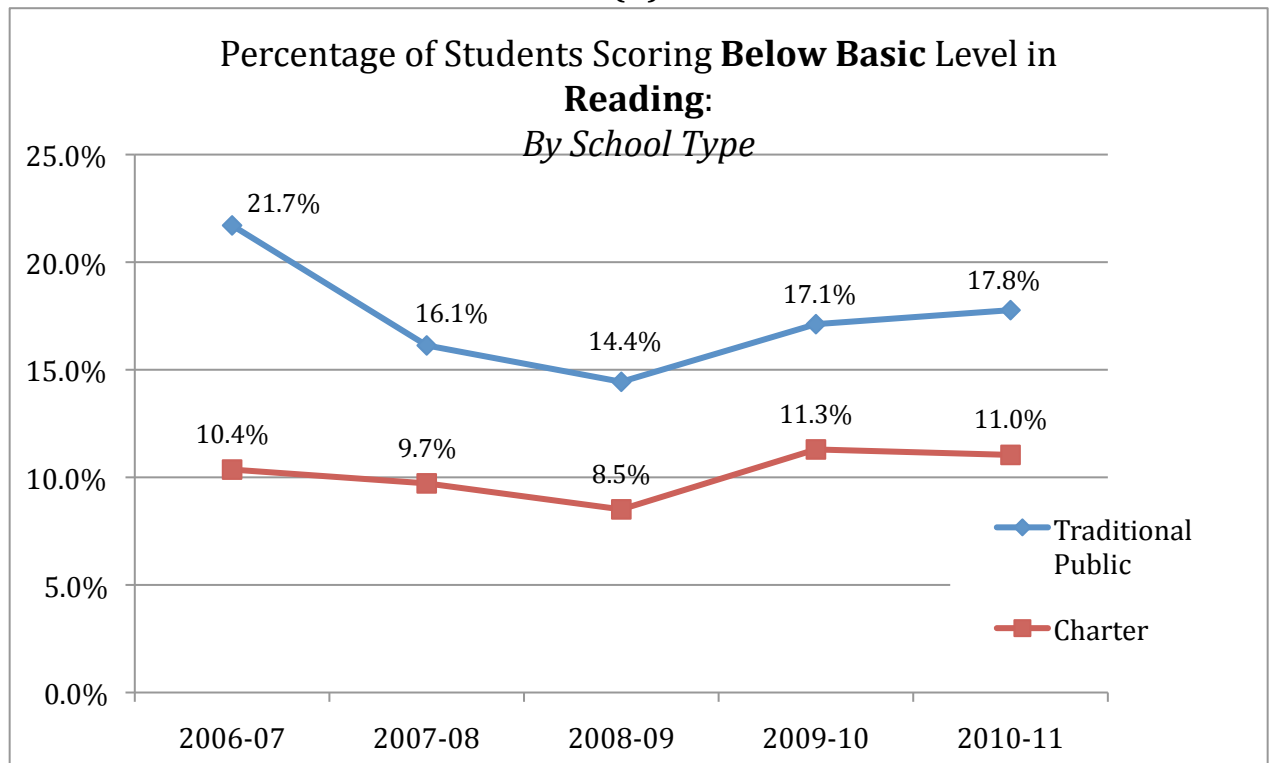
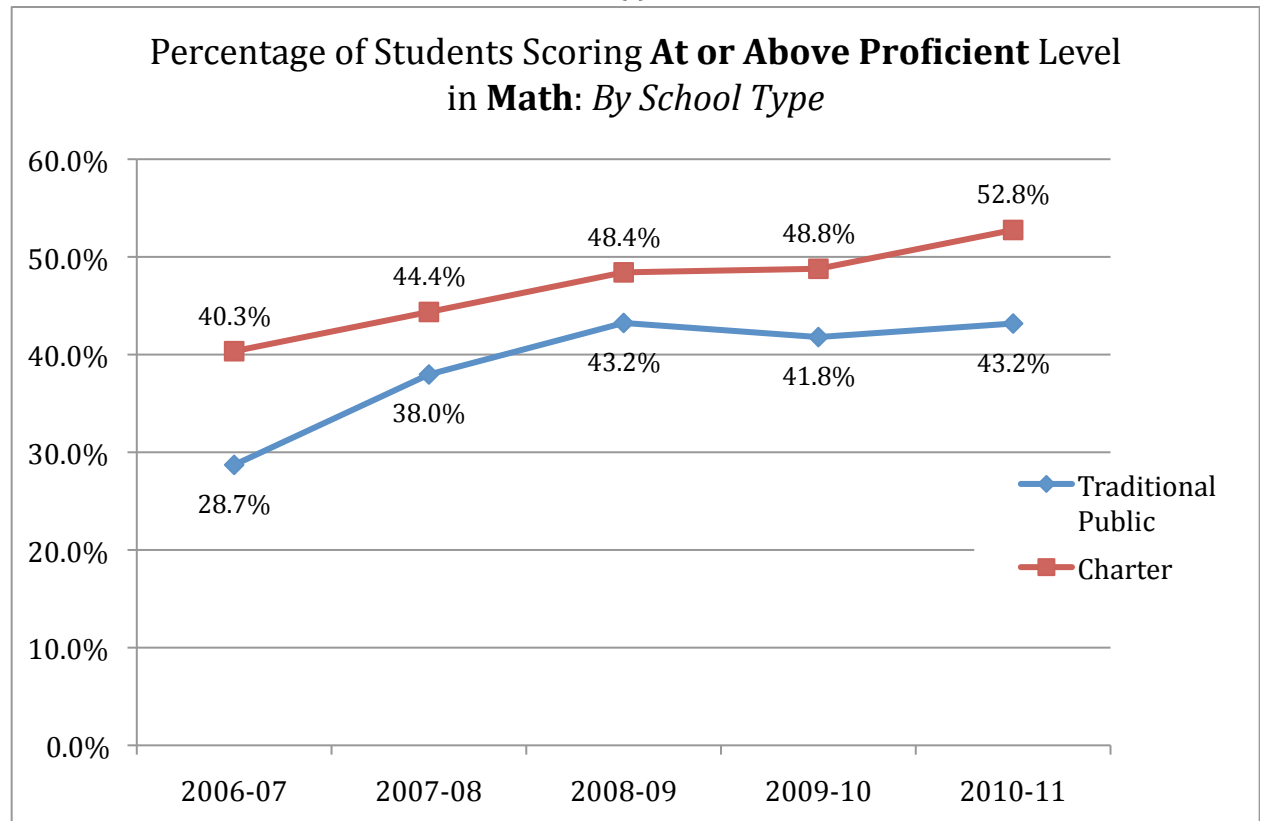
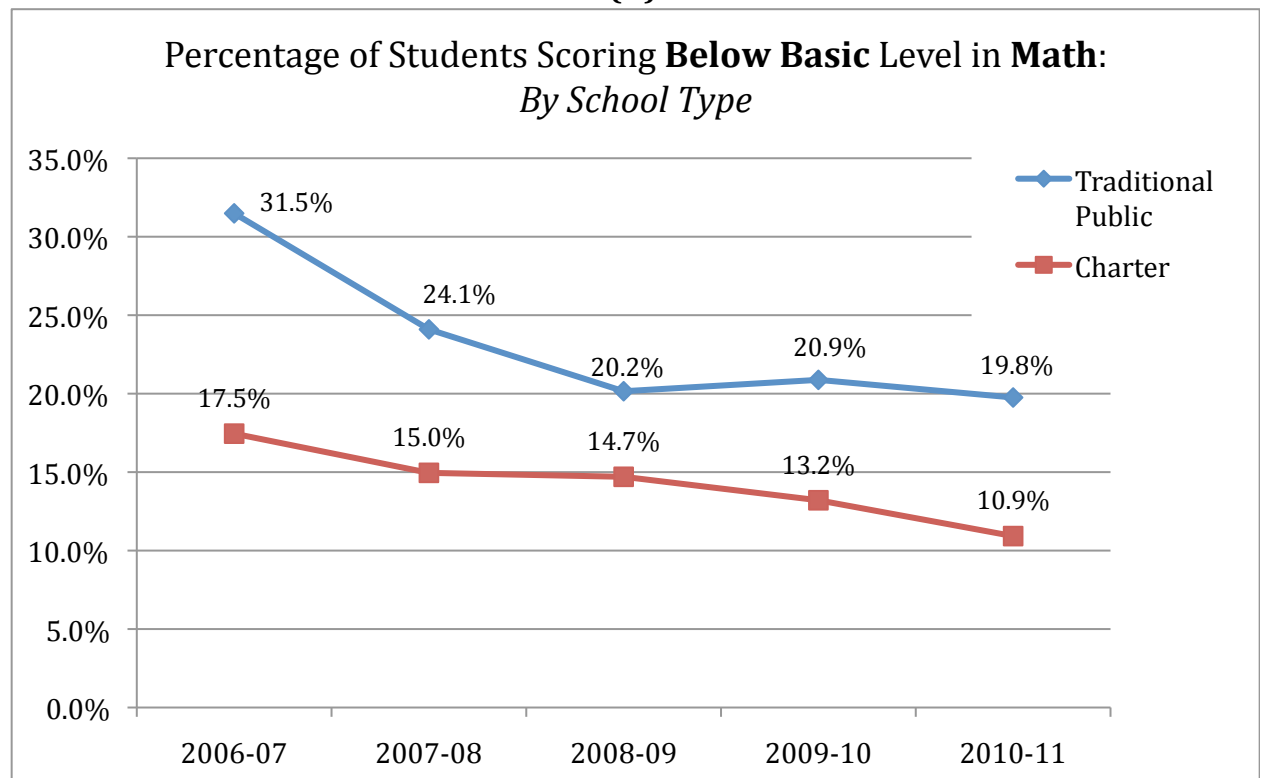


Figure 3B

(I)



(II)



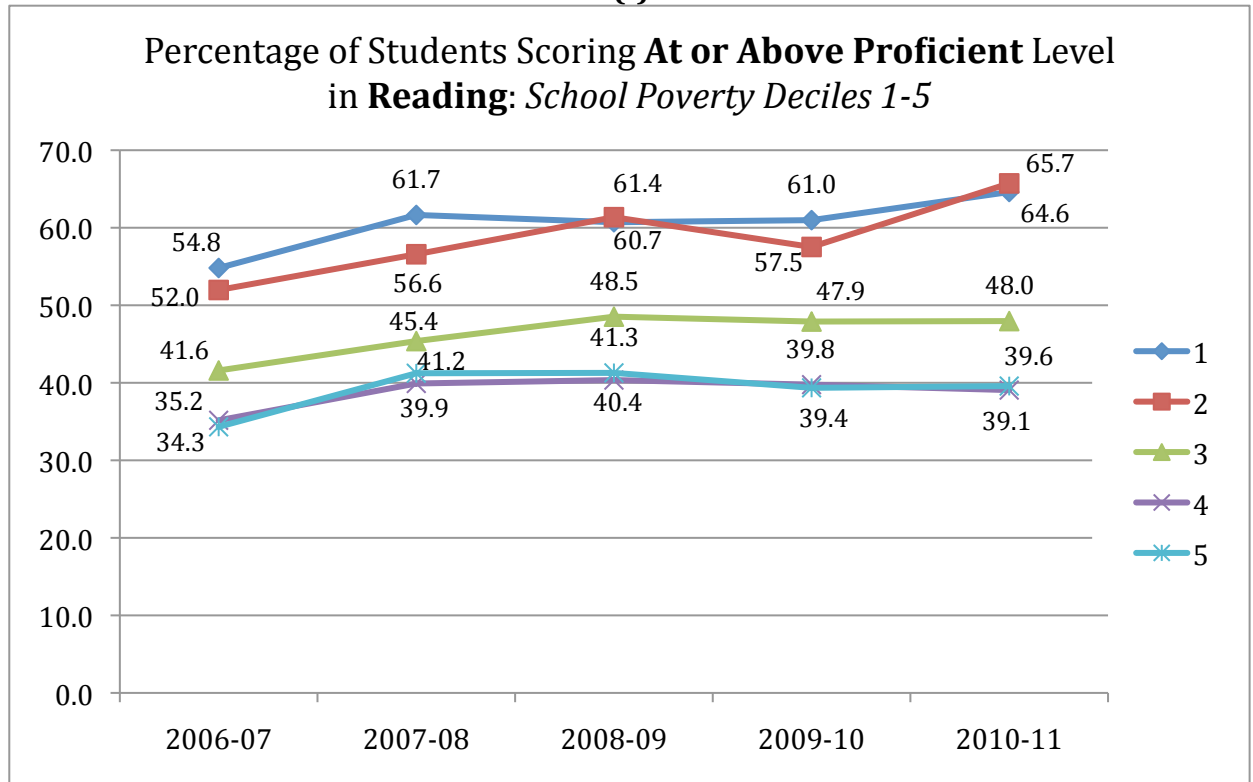
We also investigated whether student achievement gains differed based on the affluence of a school's student population. In Figures 4Aa through 4Bb, schools are divided into poverty deciles, with decile 1 schools having the smallest percentage of free or reduced price lunch students. Figures 4Aa and 4Ba shows deciles 1-5, while figures 4Ab and 4Bb show deciles 6-10, to make the graphs more legible.

In terms of reading achievement (Figures 4Aa and 4Ab), schools in deciles 1 and 2 – the lowest poverty schools – showed the largest increases in proficiency (9.8 and 13.8 percentage points respectively), as well as the largest decreases in the 'below basic' level (10.8 and 5.7 percentage points respectively), over the whole period. While the lowest poverty schools demonstrated the largest increases in student reading performance, all 10 deciles showed increases in reading proficiency rates over the time period examined. Additionally, all but one of the deciles (decile 9) showed decreases in their 'below basic' reading rate.

Unlike with the reading scores, in math (Figures 4Ba and 4Bb), schools in the higher poverty deciles showed equal, if not greater, improvement. The largest increases in math proficiency were in deciles 7 and 10 (17.2 and 19.9 percentage points respectively). The largest decreases in 'below basic' math rates were in deciles 1, 7 and 8 (14.7, 13.6, and 13.4 respectively). All 10 poverty deciles increased math proficiency and decreased 'below basic' rates over the five year period.

Figure 4Aa

(I)



(II)

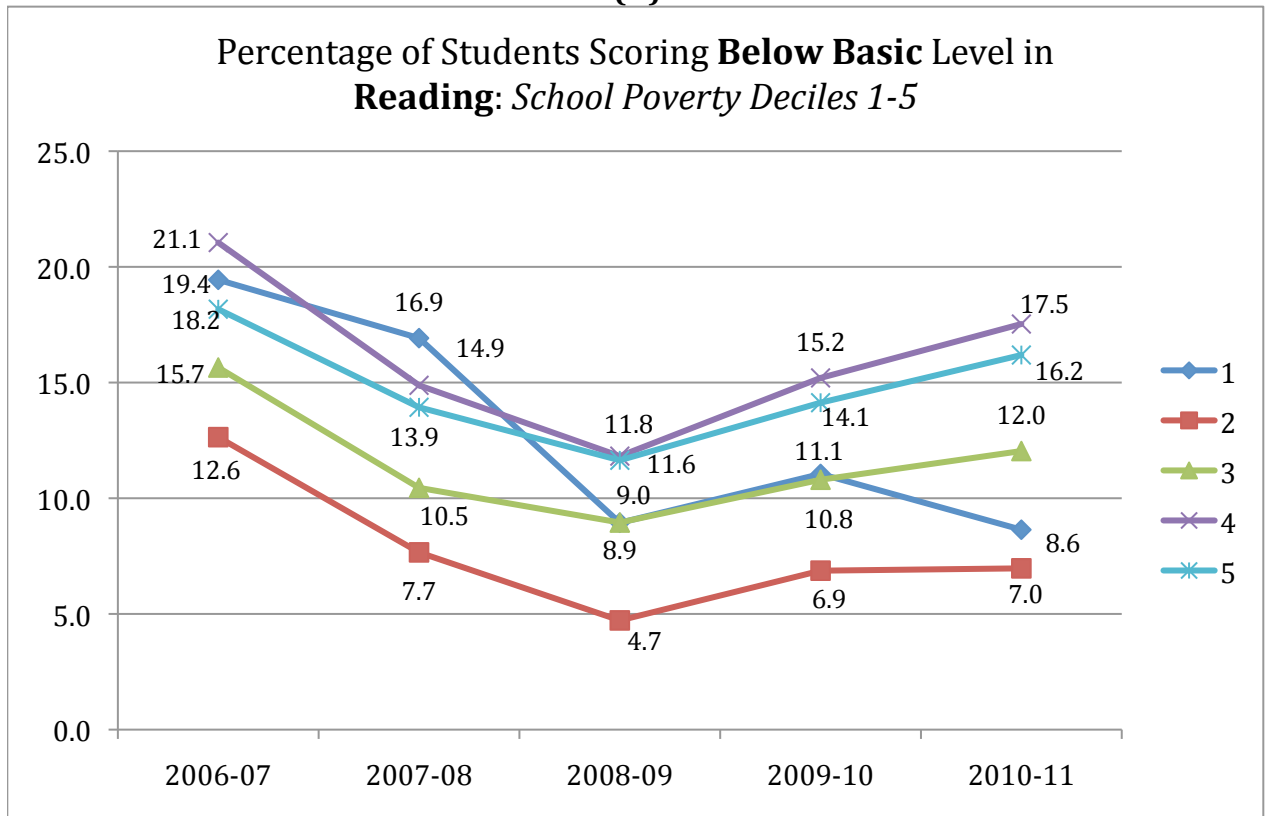
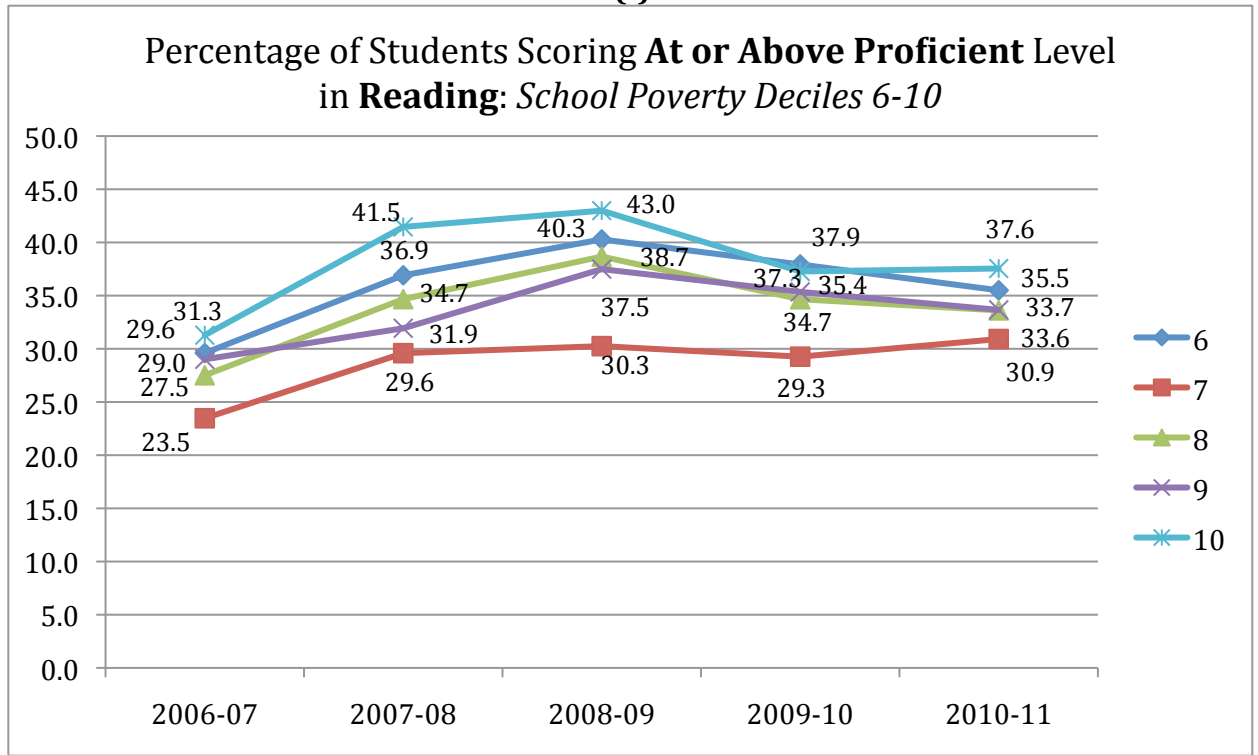


Figure 4Ab

(I)



(II)

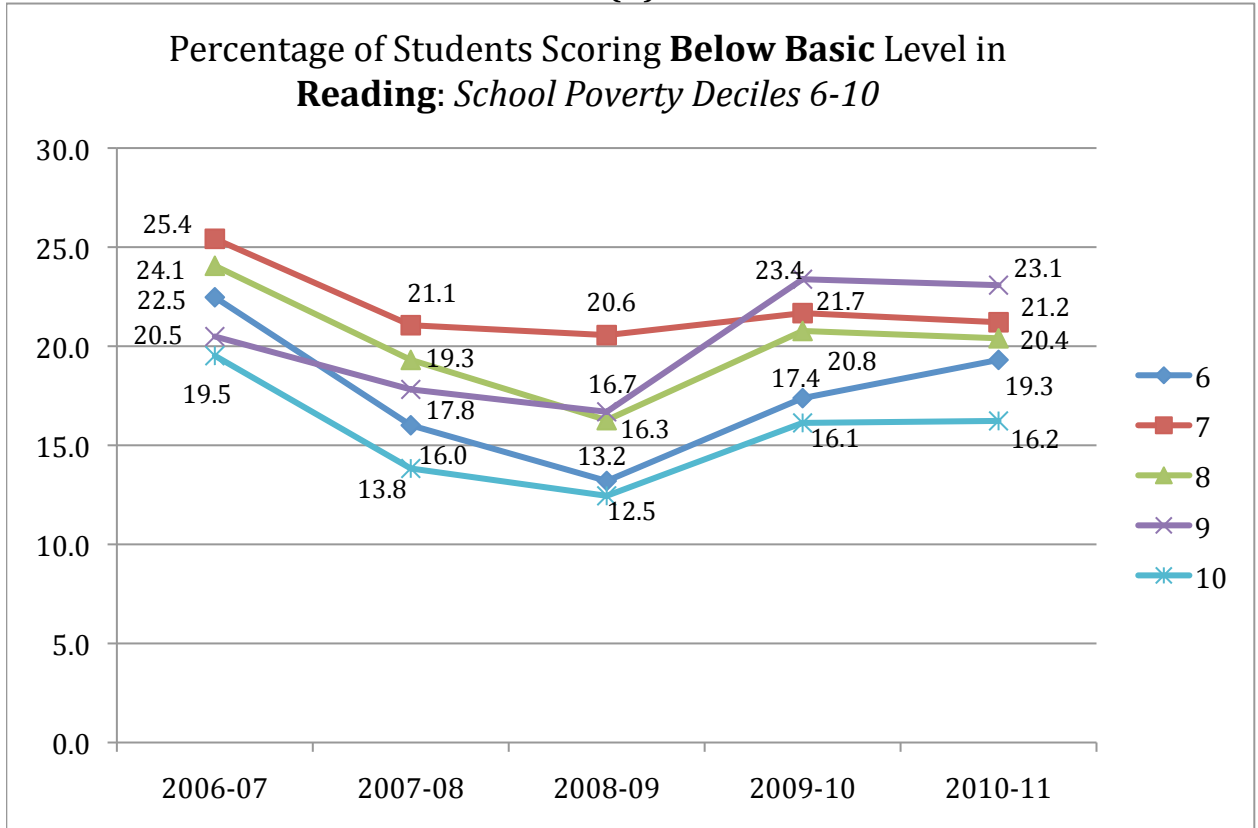
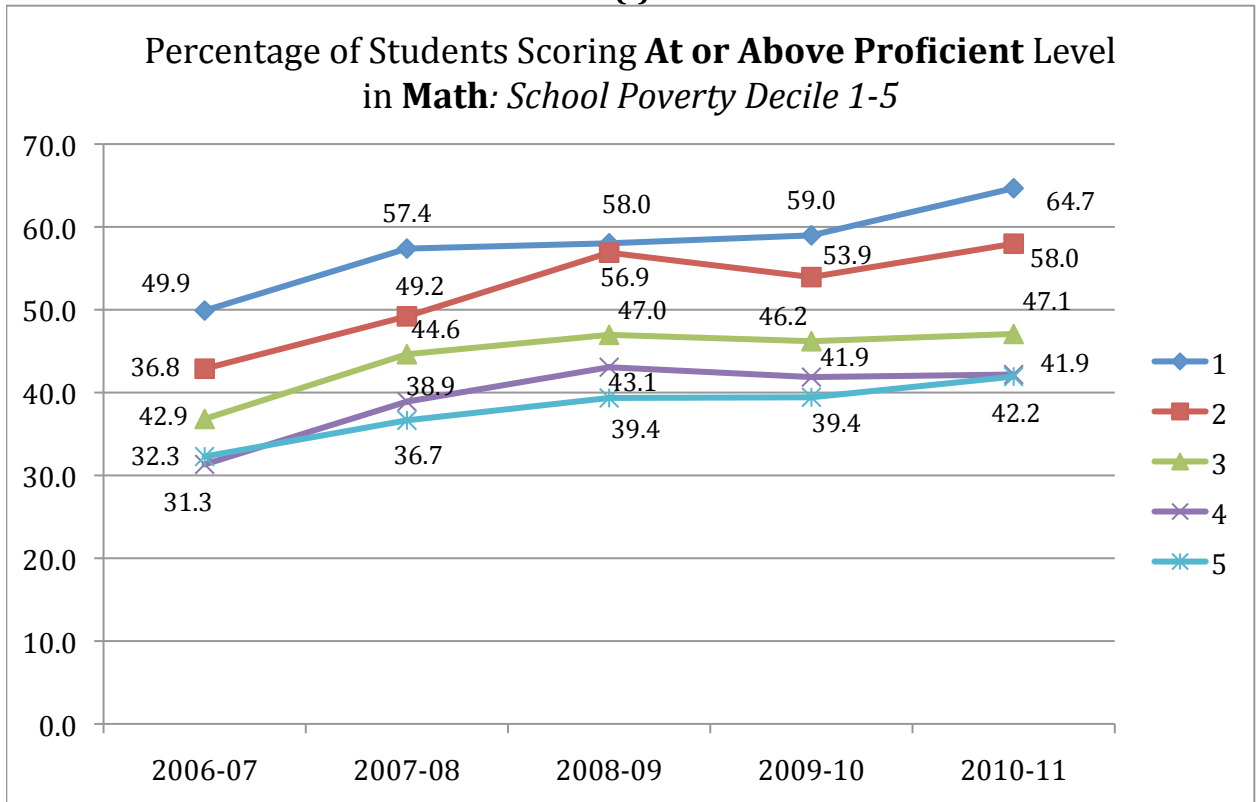


Figure 4Ba

(I)



(II)

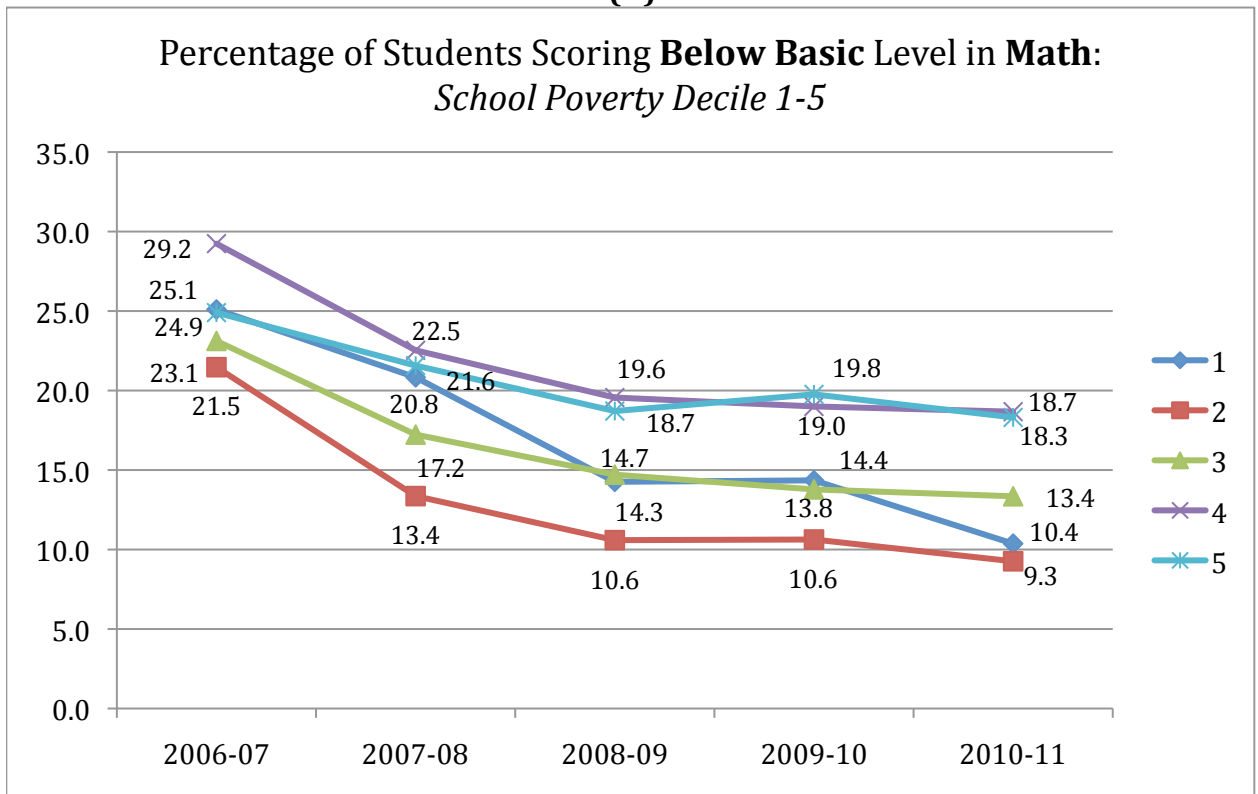
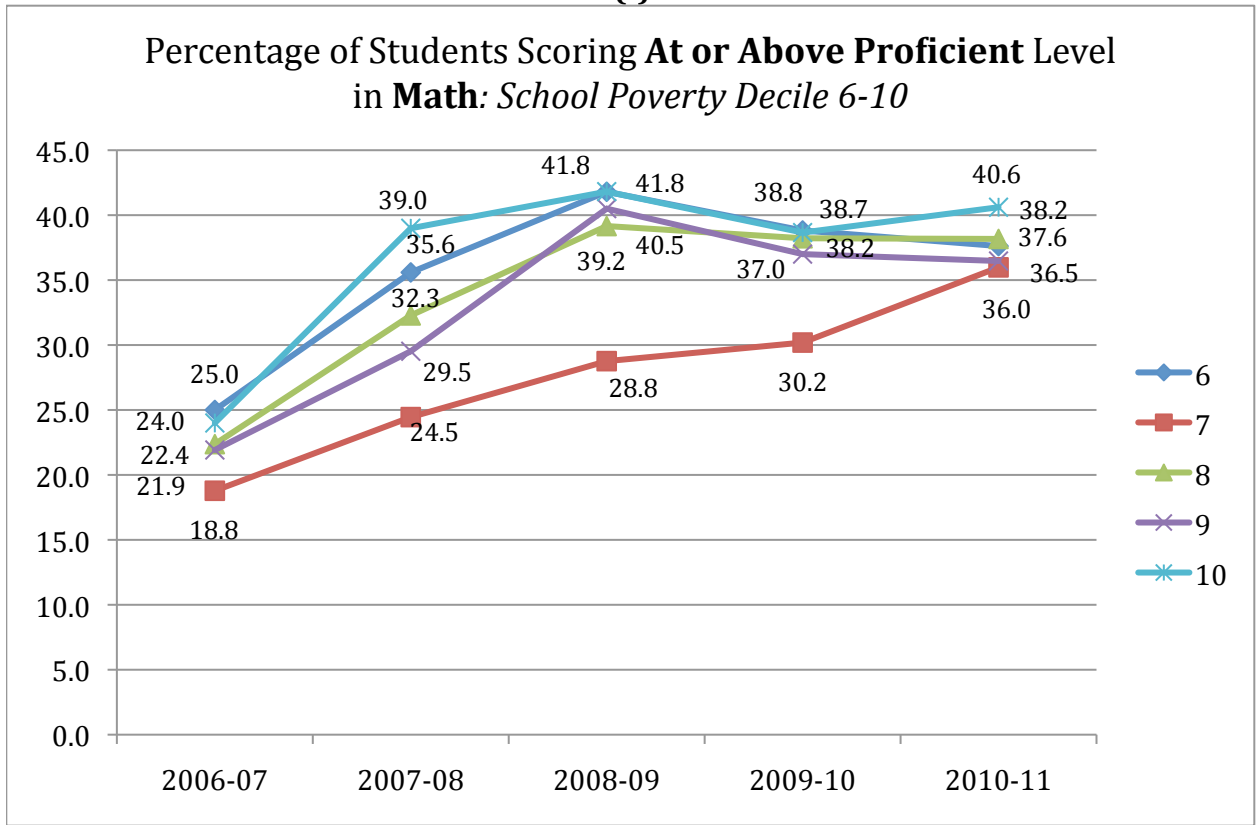
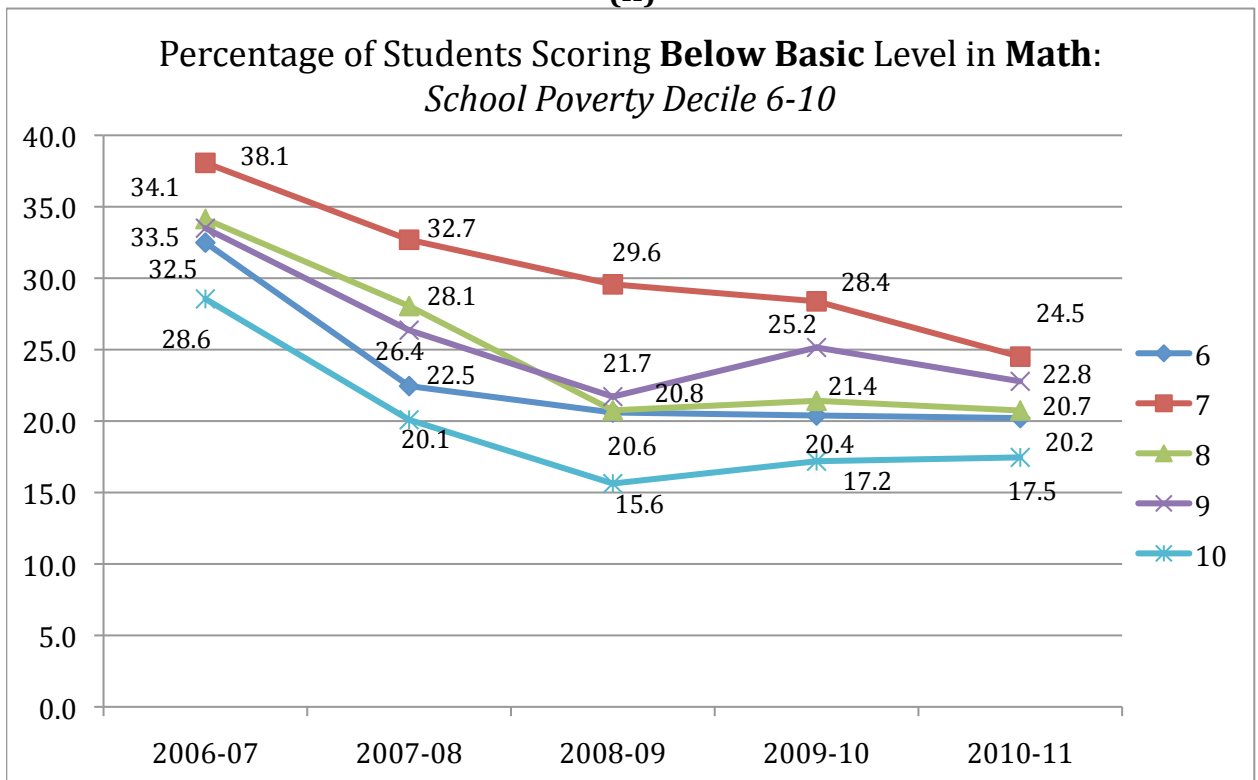


Figure 4Bb

(I)



(II)



Figures 5A and 5B show changes in student achievement separately by various student characteristics. Over the time period studied, racial minorities - and also relatively affluent students, as measured by their free or reduced priced lunch (FRPL) ineligibility - demonstrated the largest gains in performance in both reading and math. Between 2006-2007 and 2010-2011, reading proficiency rates for black and Hispanic students rose by 6.6 and 4.7 percentage points respectively, while reading proficiency fell for white students by 0.6 percentage points. Even though white students showed the smallest change, they have by far the highest average level of proficiency during this time period. Reading proficiency rates rose by roughly 6.2 and 13.2 percentage points for FRPL eligible and ineligible students, respectively, over these five years.

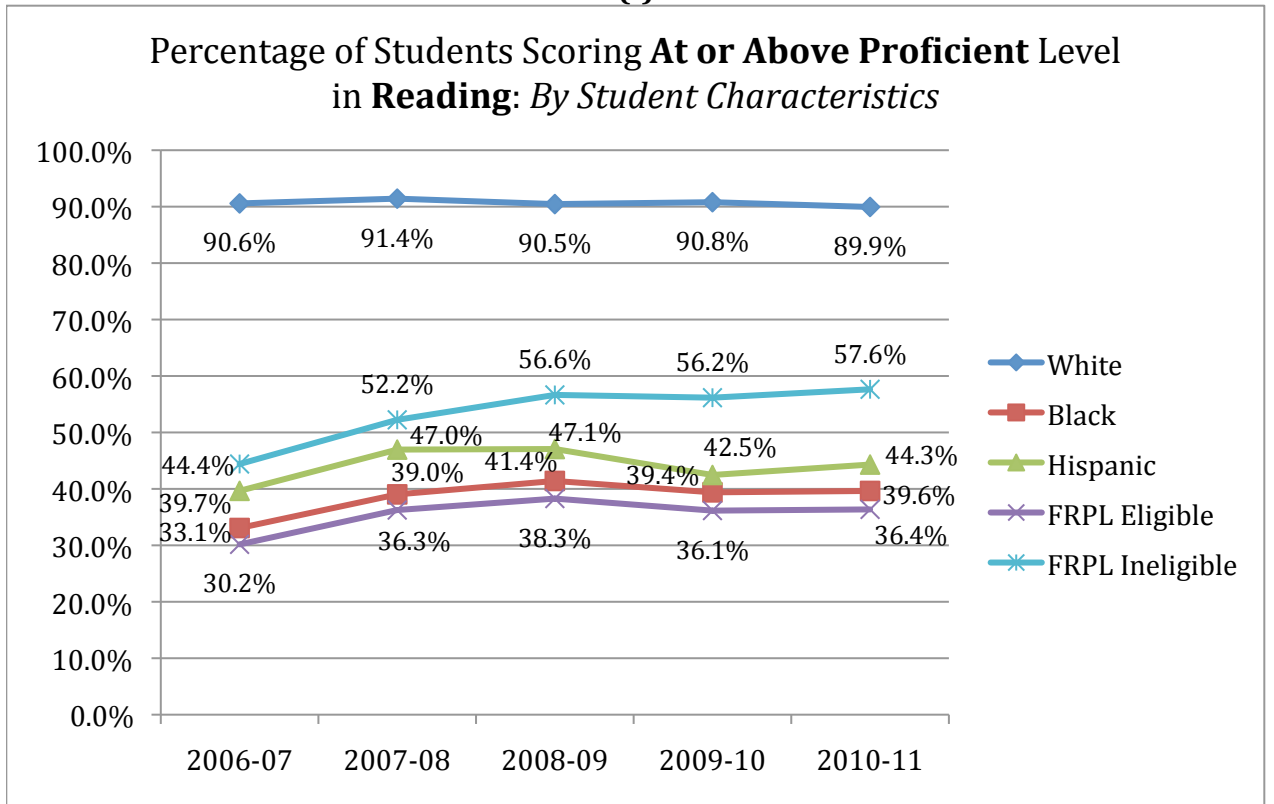
Similarly, the largest changes in 'below basic' rates were for minority and non-FRPL students. Over the whole period, 'below basic' rates dropped 2.4 and 4.8 percentage points for black and Hispanic students, while white students saw a drop of only 0.3 percentage points. The fraction of 'below basic' FRPL ineligible students dropped 8.6 percentage points from 18.6 percent to 10.0 percent, while the fraction for FRPL eligible students decreased 2.6 percentage points from 21.7 to 19.1 percent.

Similar to the pattern seen in many of the previous graphs, even though the reading 'below basic' rate decreased overall during the five years examined, most of the decrease occurred in the first few years of the study, and in the later years, the 'below basic' reading rate began to rise. Further research is needed to understand this pattern.

Math student achievement follows a nearly identical pattern. All races and income groups saw increases in math proficiency and decreases in 'below basic' rates. The changes were larger for black and Hispanic students compared to white students, and larger for FRPL ineligible students, compared to their eligible counterparts.

Figure 5A

(I)



(II)

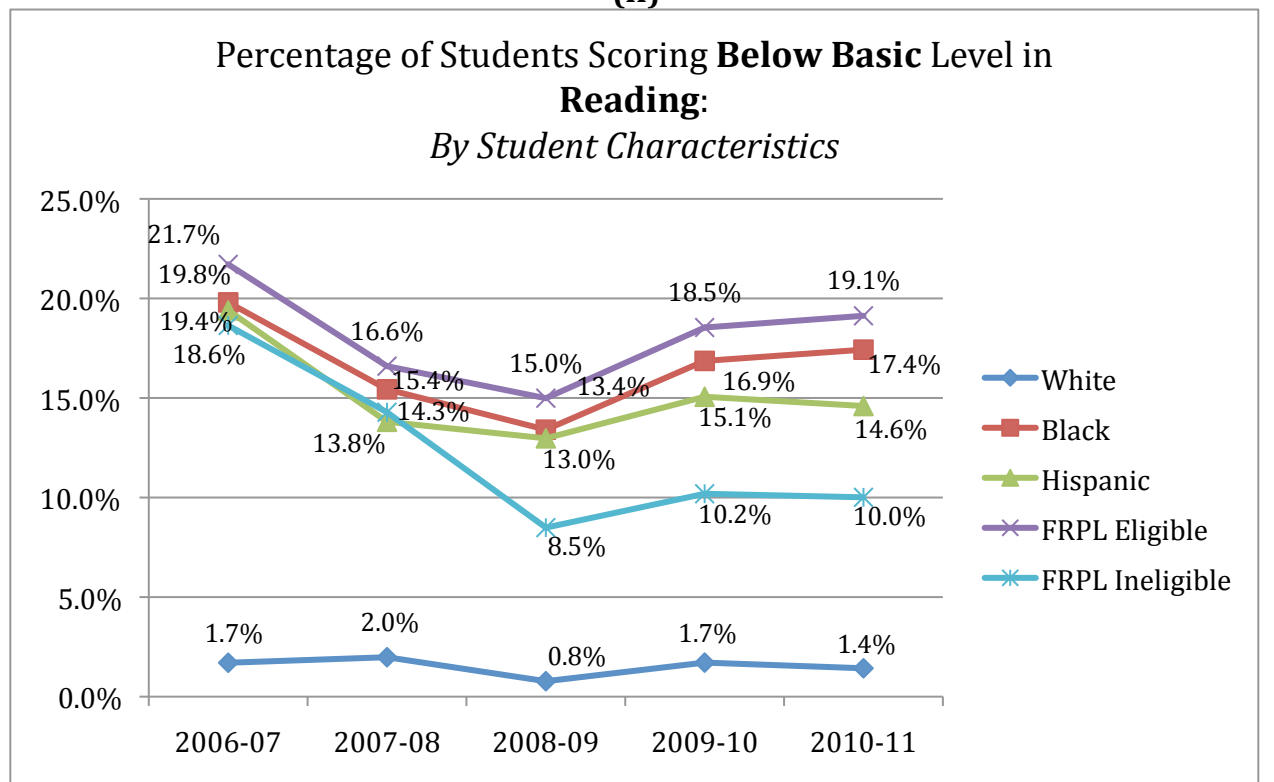
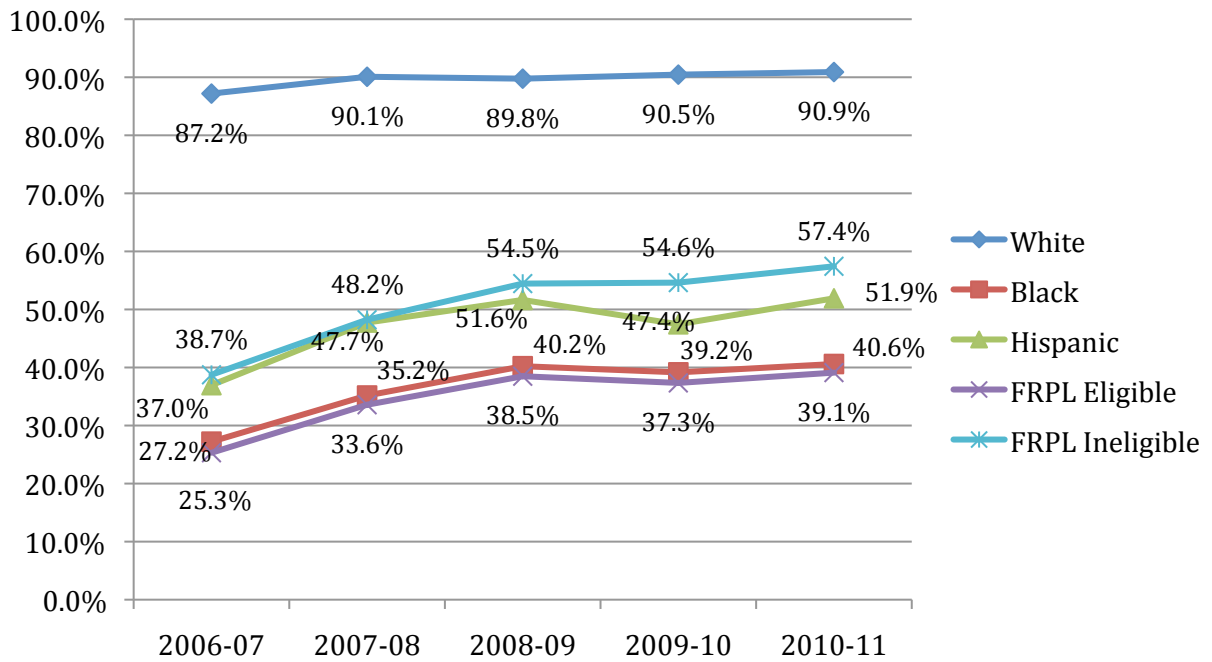


Figure 5B

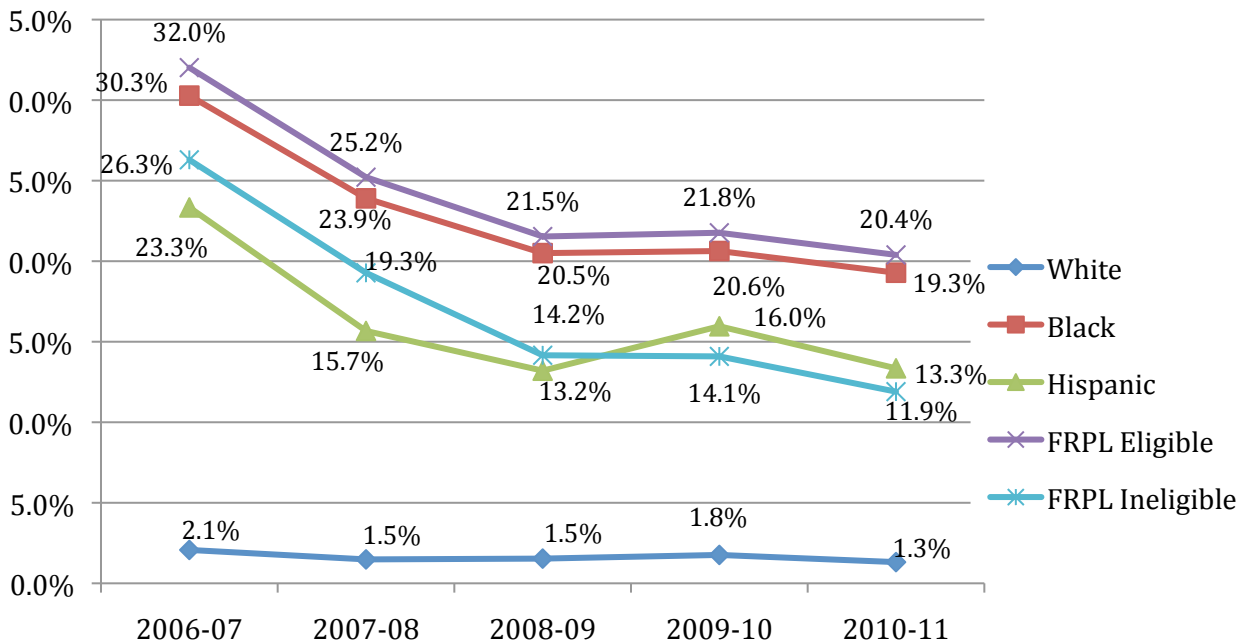
(I)

**Percentage of Students Scoring At or Above Proficient Level
in Math: By Student Characteristics**



(II)

**Percentage of Students Scoring Below Basic Level in Math:
By Student Characteristics**



Summary

Over the 2006-2011 period we find increases in proficiency and decreases in 'below basic' rates for students in the District. The improvements tend to be greater in the early years (especially for reading), and are larger for math scores than for reading. The increases in proficiency can be seen in all 8 wards in the District, as well as in both traditional public and charter schools. The reading gains are largest in low poverty schools, while the math gains are large in schools of all poverty deciles. Performance improvements are largest for minority and non-FRPL eligible students.

It is worth repeating the cautions expressed earlier in this chapter. While some of the improvements in student achievement coincide with the enactment of PERAA, we have insufficient evidence to conclude that these increases are a direct *result* of the legislation. And because the improvements coincide with the adoption of a new standardized test, the DC CAS, it is important to keep in mind that at least some of the change may be due to adaptation by students and teachers to the new test or other factors not directly correlated with genuine gains in learning. It is impossible based on this analysis to assess the magnitude of whatever potential bias may have resulted from these factors.

In Technical Appendix A we repeat these analyses, but instead of reporting raw proficiency and 'below basic' rates, we report 'regression-adjusted' differences. By controlling for student characteristics in the regressions, the numbers presented in the Appendix describe changes in the proficiency and 'below basic' rates, taking into account differences in observed student characteristics over time and between groups. For example, one hypothesis may be that test scores have increased in the District over time because, in part, District residents are becoming more white and more affluent. These Appendix regressions account for that concern by measuring changes in test performance over time, while holding constant the fraction of white and non-FRPL students in the district. While we control for all the student characteristics we observe in our data (gender, free or reduced priced lunch eligibility, race/ethnicity, grade, special education status, and limited English proficiency status), it is important to remember that there are many other student characteristics that are unobserved, and thus not controlled for in the Appendix regressions.

While the patterns in the regression adjusted results are slightly more complicated and not always as large, the overarching theme is the same. Keeping in mind year-to-year changes, the fraction of students who score at a 'proficient' level and above on standardized reading and math tests has increased from 2006-2007 to 2010-2011, and the fraction of students scoring below the 'basic' level has decreased. While these trends hold true for different types of schools and students, it is important to remember that there is still large variation in test performance across the District's wards and across student and school characteristics. In our next report where we examine actual test scores, we can evaluate these changes more fully, including their statistical significance.

Section IV

Technical Appendix A

To examine the changes in student achievement since the enactment of PERAA, we follow an interrupted time-series approach where we compare post-PERAA and pre-PERAA student outcomes. This framework, in practice, implies comparisons between the 2006-2007 school year (the only pre-PERAA year for which student performance levels are available) and post-PERAA years until 2010-2011. We are interested in two binary outcomes: one indicating whether students performed at or above the ‘proficient’ level in a given subject/year and the other indicating students performing at the ‘below basic’ level. Given the binary nature of the outcomes, we estimate the following probit regression model for each subject and proficiency measure:

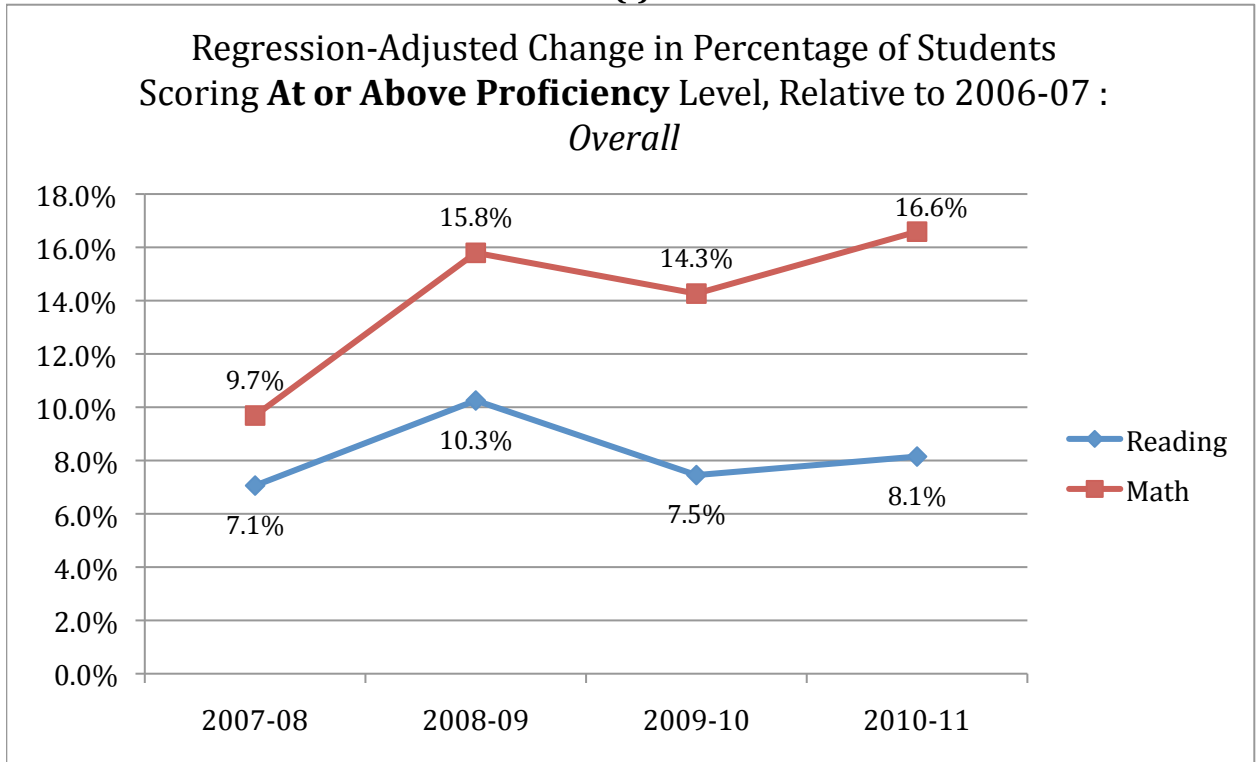
$$P_{it} = \beta_0 + \beta_1 Y_{07t} + \beta_2 Y_{08t} + \beta_3 Y_{09t} + \beta_4 Y_{10t} + \beta_5 X_{it} + \delta g + \epsilon_{it} \quad (B1)$$

The variables Y_{07t} – Y_{10t} are indicators for school years 2007-2008 through 2010-2011, X_{it} is the vector of student characteristics including FRPL eligibility, race/ethnicity, gender, special education status, and limited English proficiency status, and δg is a vector of grade indicators. In this specification, β_1 through β_4 reflect the differences in the proficiency rates between the corresponding post-PERAA school year and the 2006-2007 school year, taking differences in observed student characteristics into account.

Regression-Adjusted Figures

Figure 1

(I)



(II)

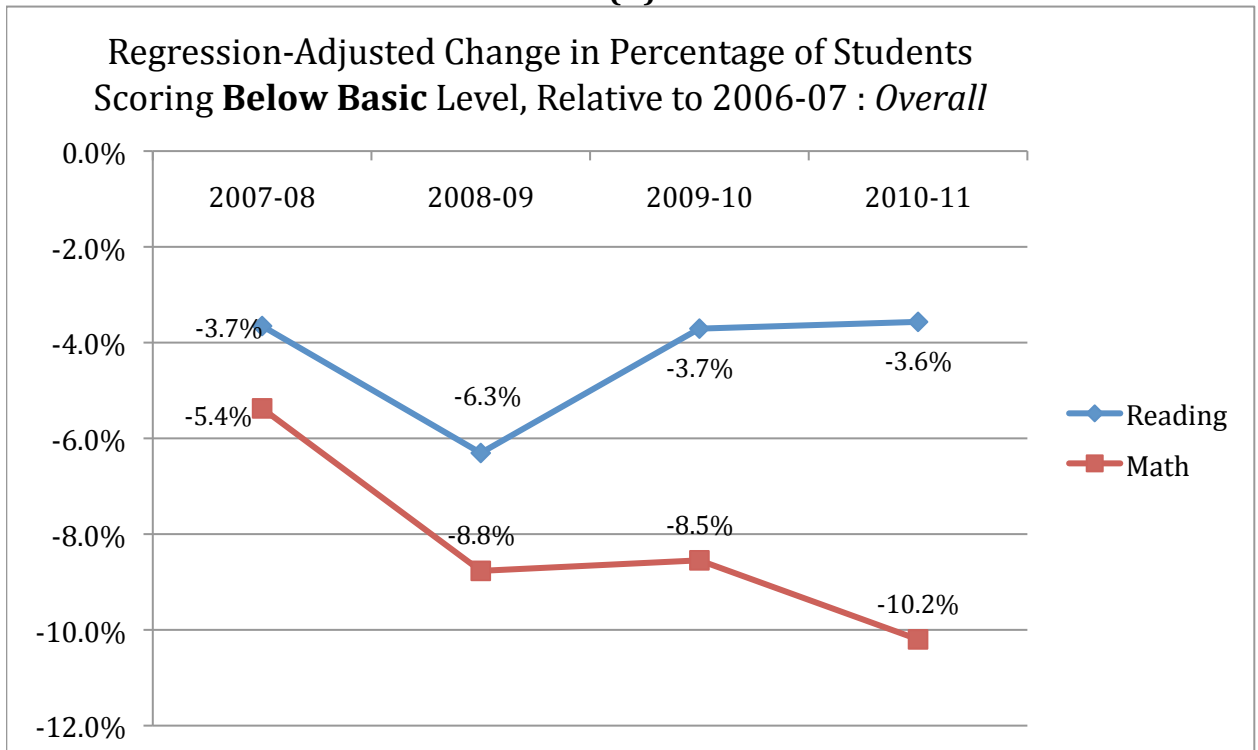
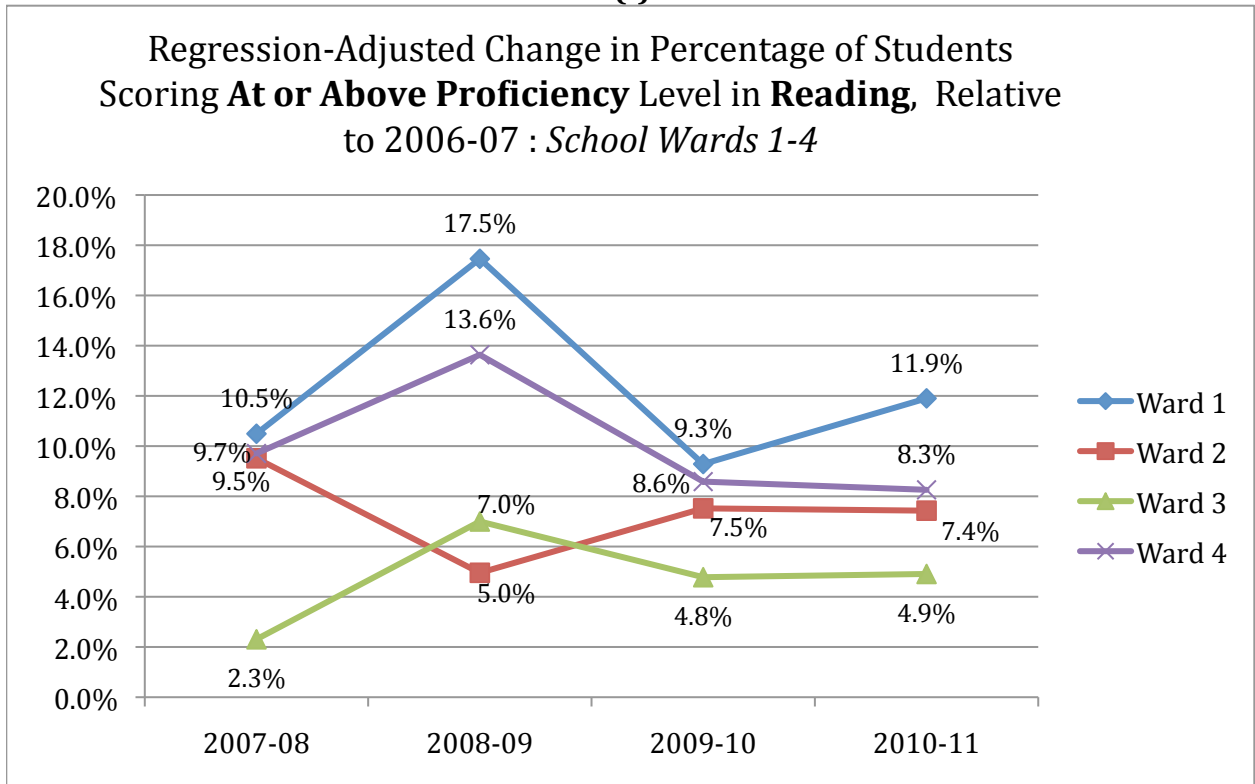


Figure 2Aa

(I)



(II)

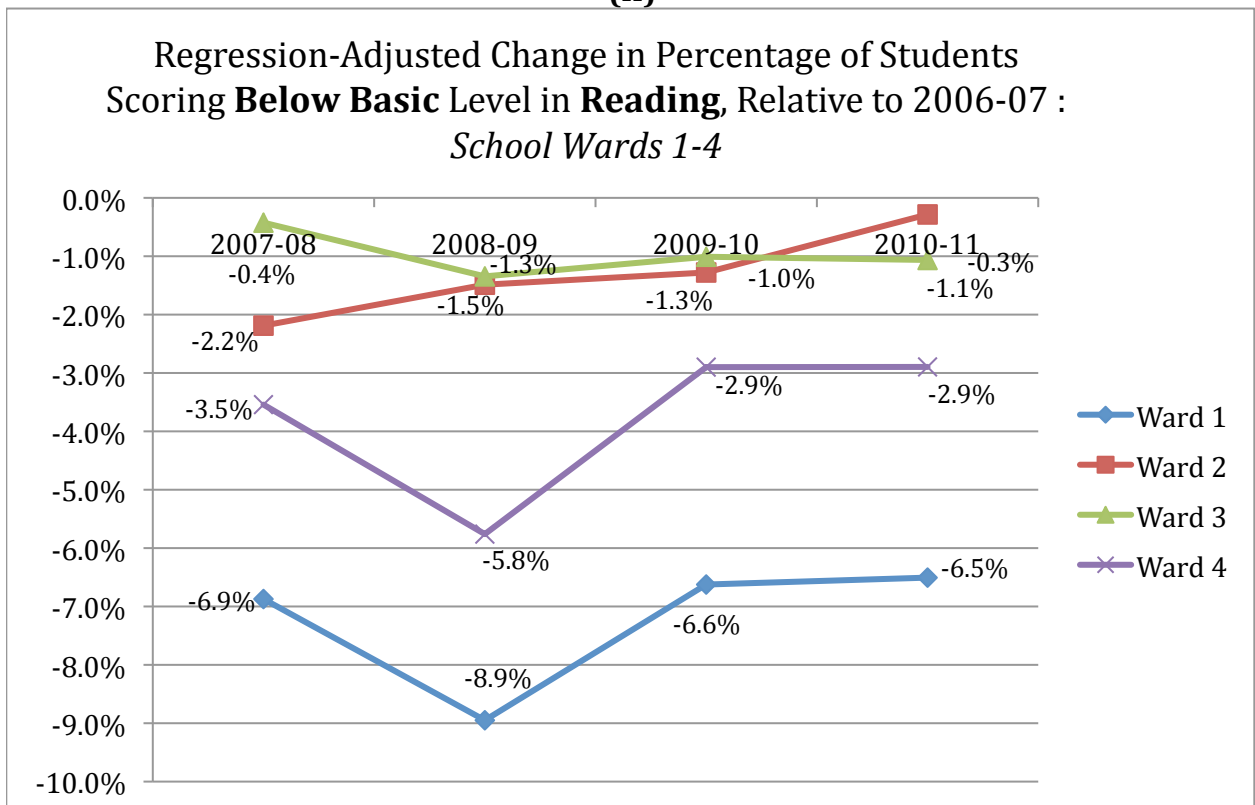
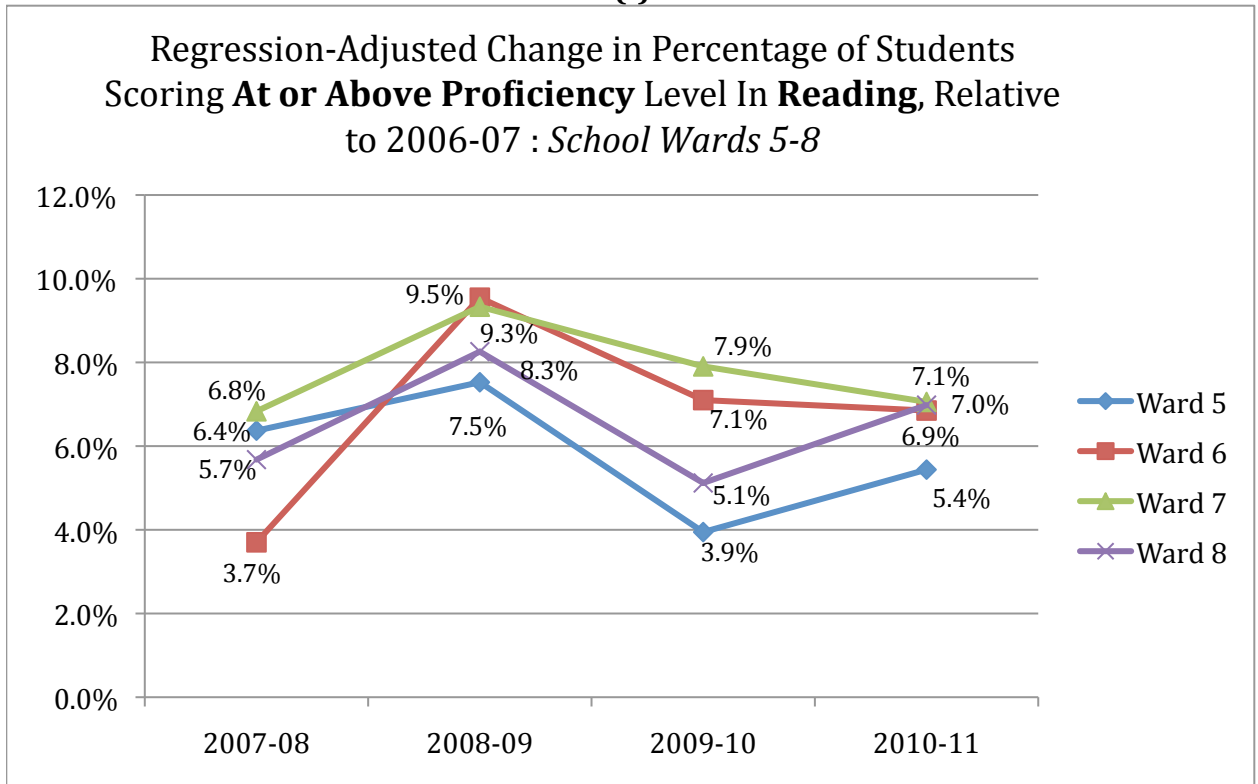


Figure 2Ab

(I)



(II)

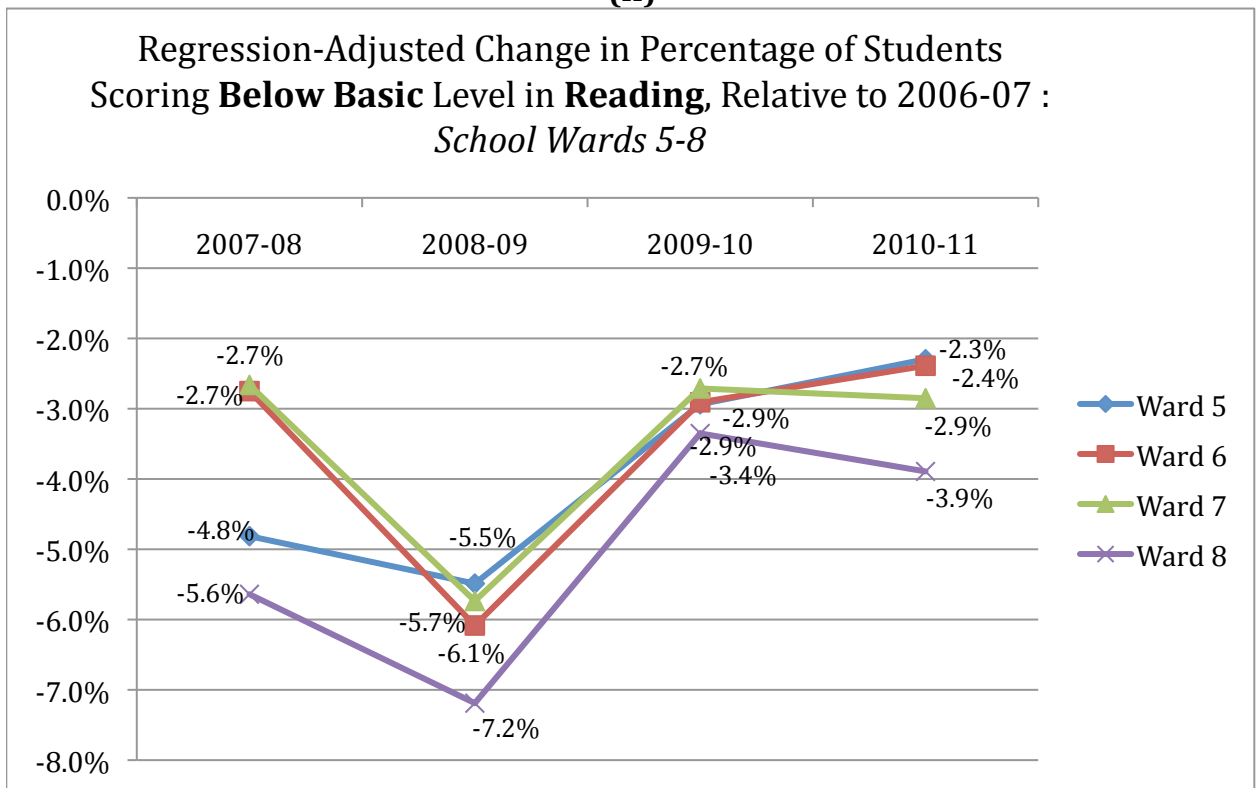
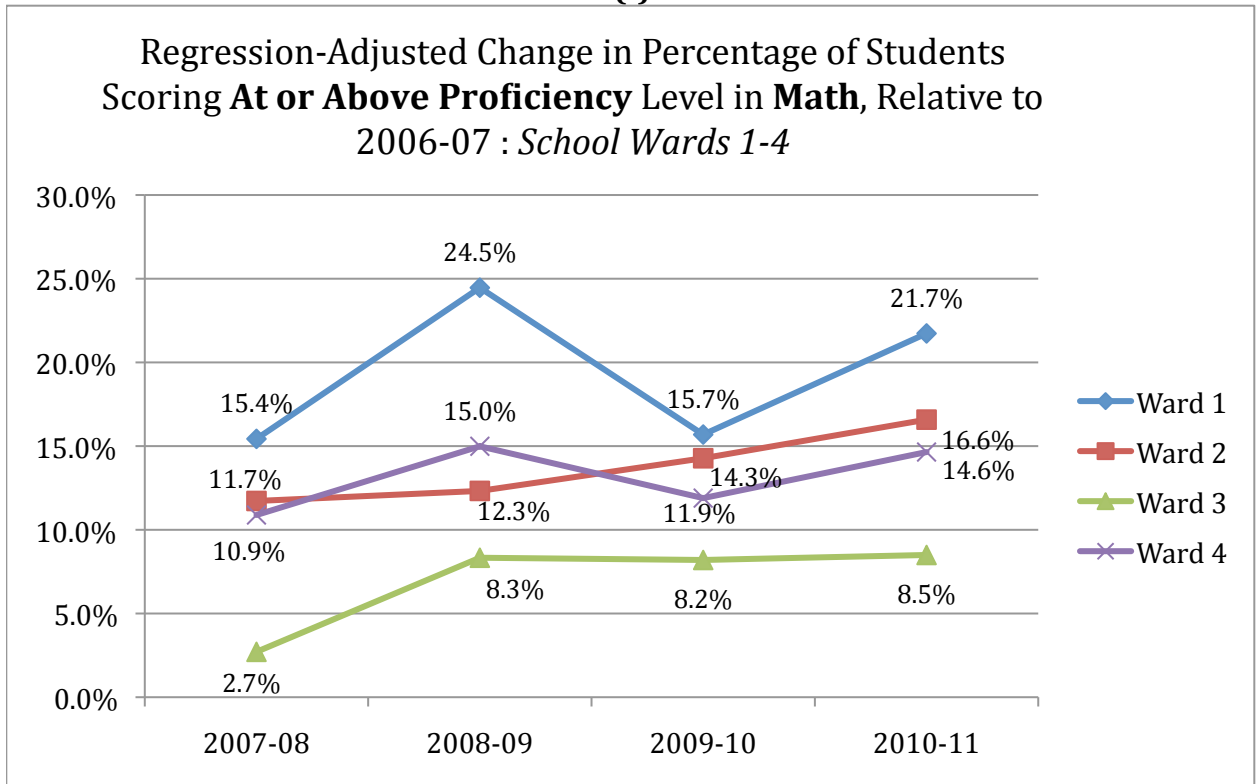


Figure 2Ba

(I)



(II)

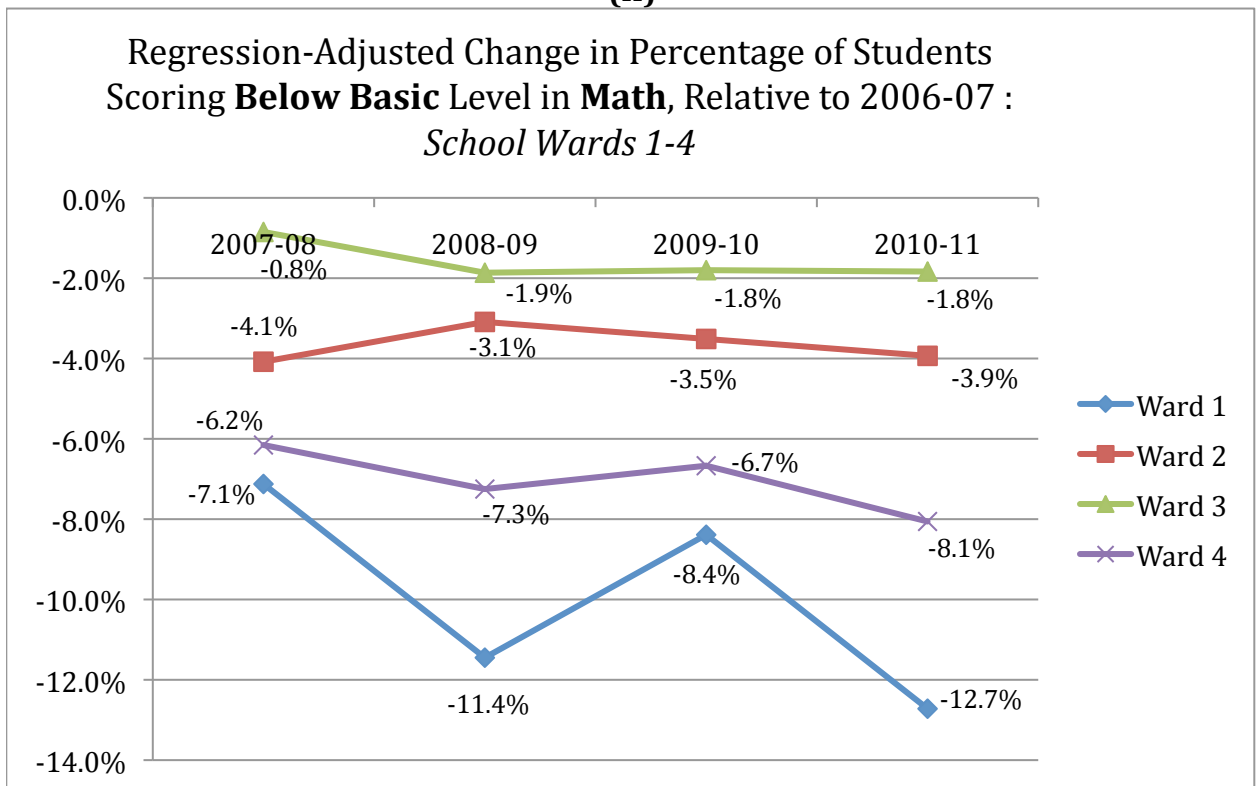
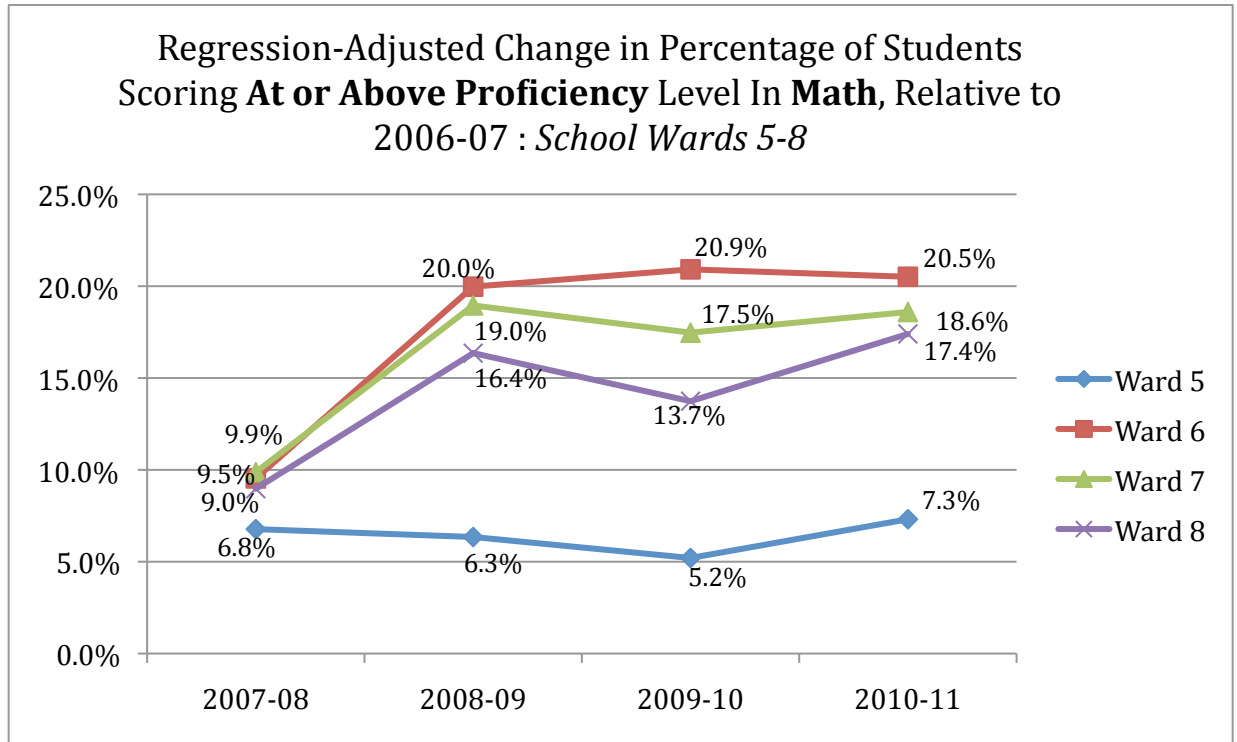


Figure 2Bb

(I)



(II)

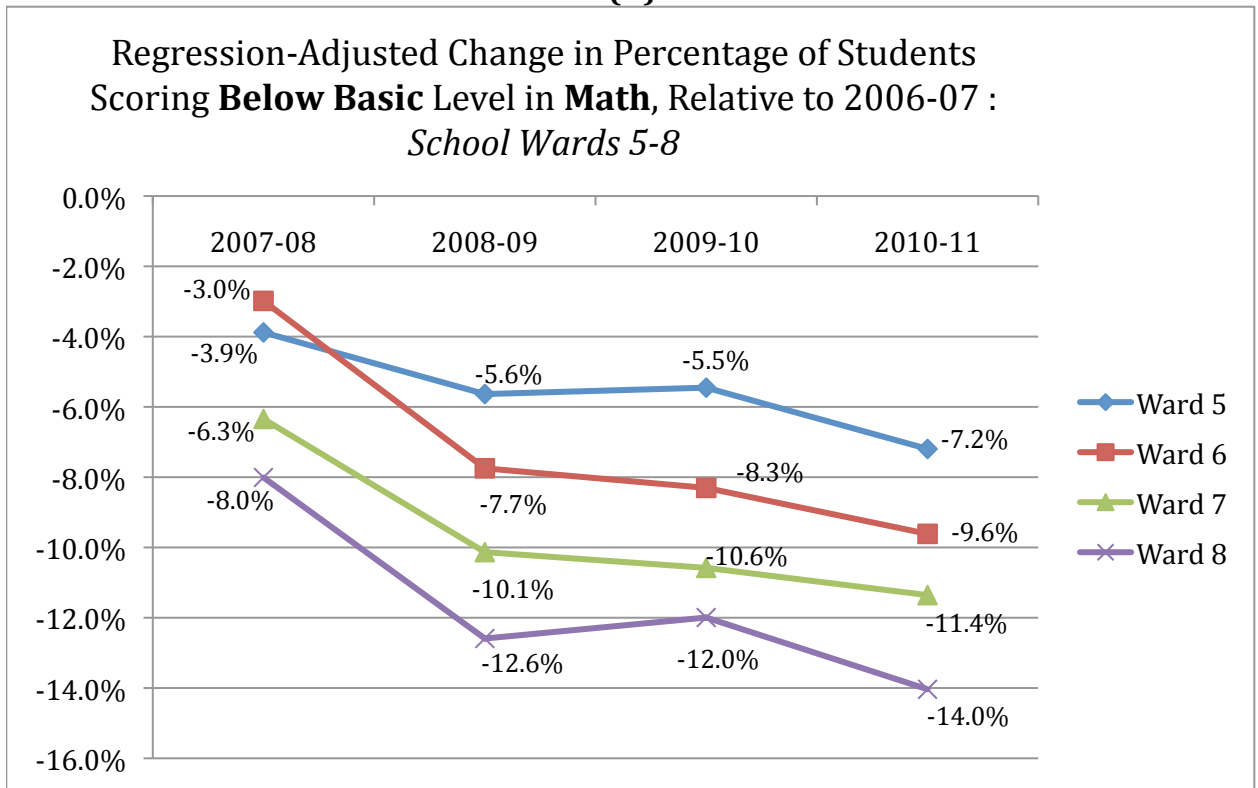
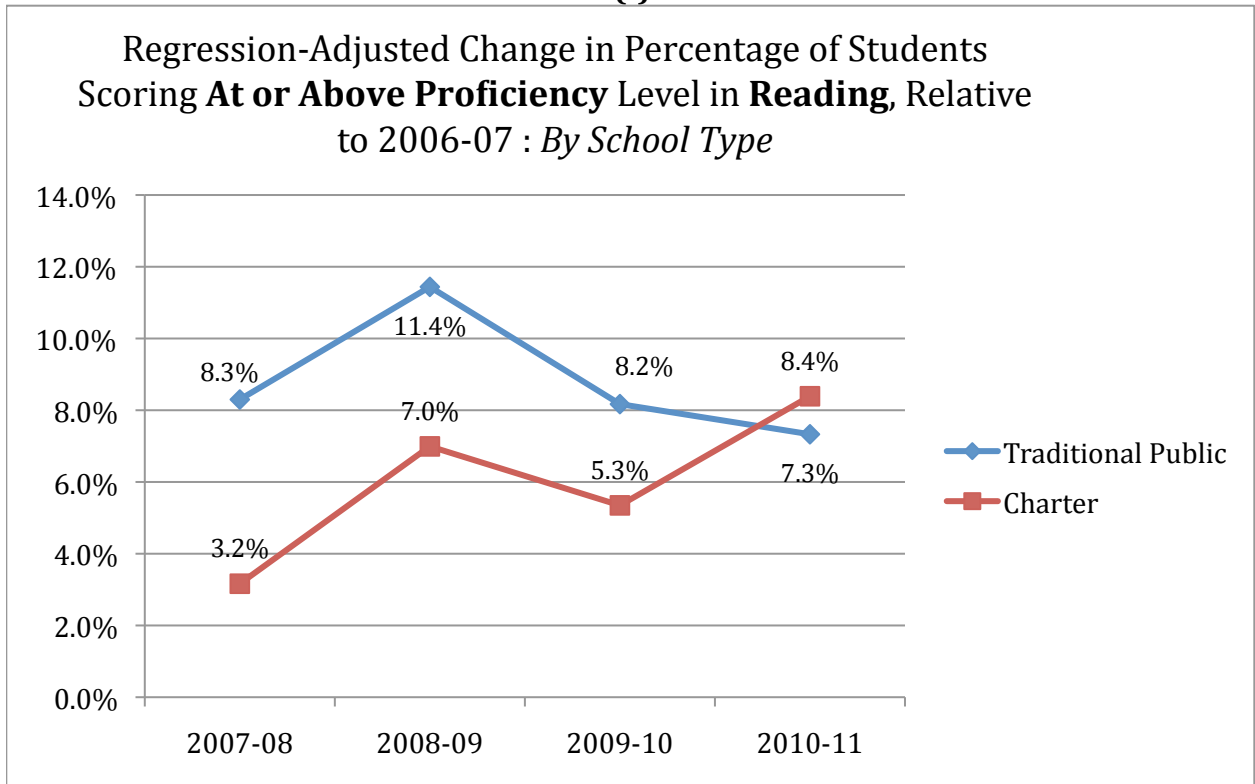


Figure 3A

(I)



(II)

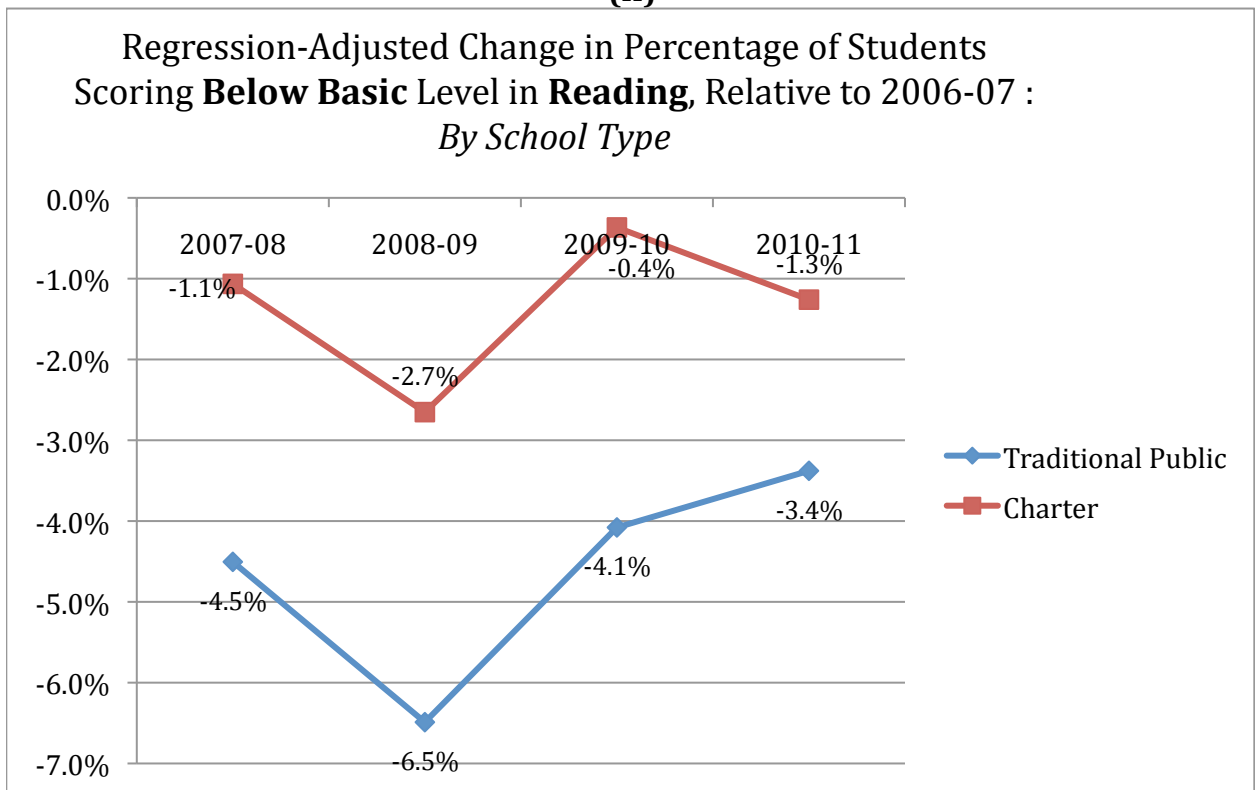
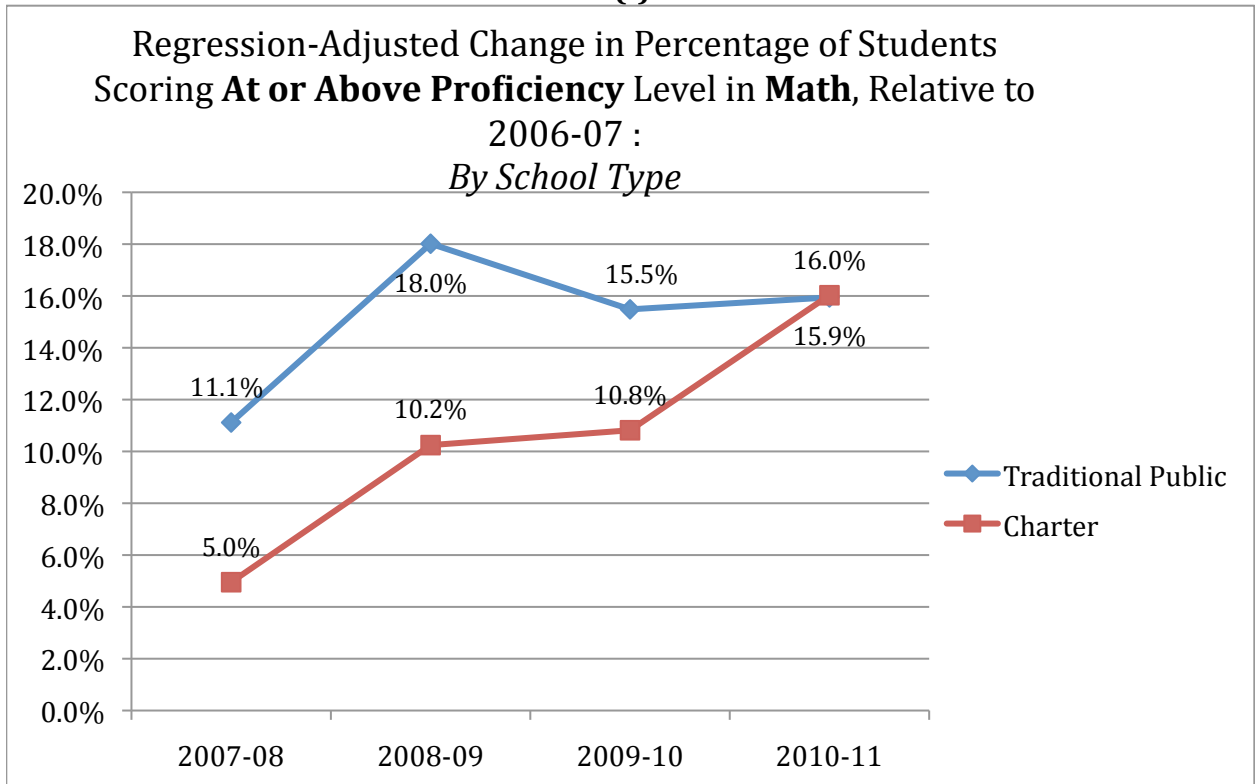


Figure 3B

(I)



(II)

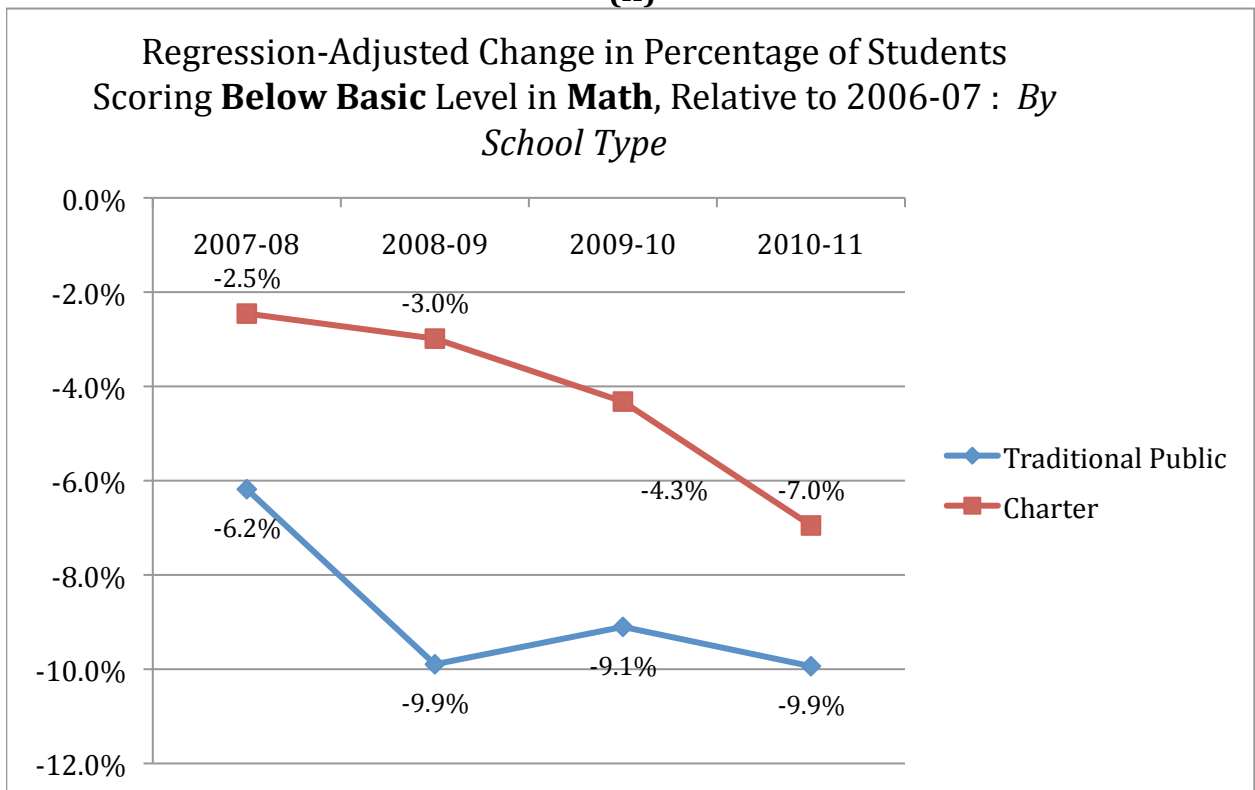
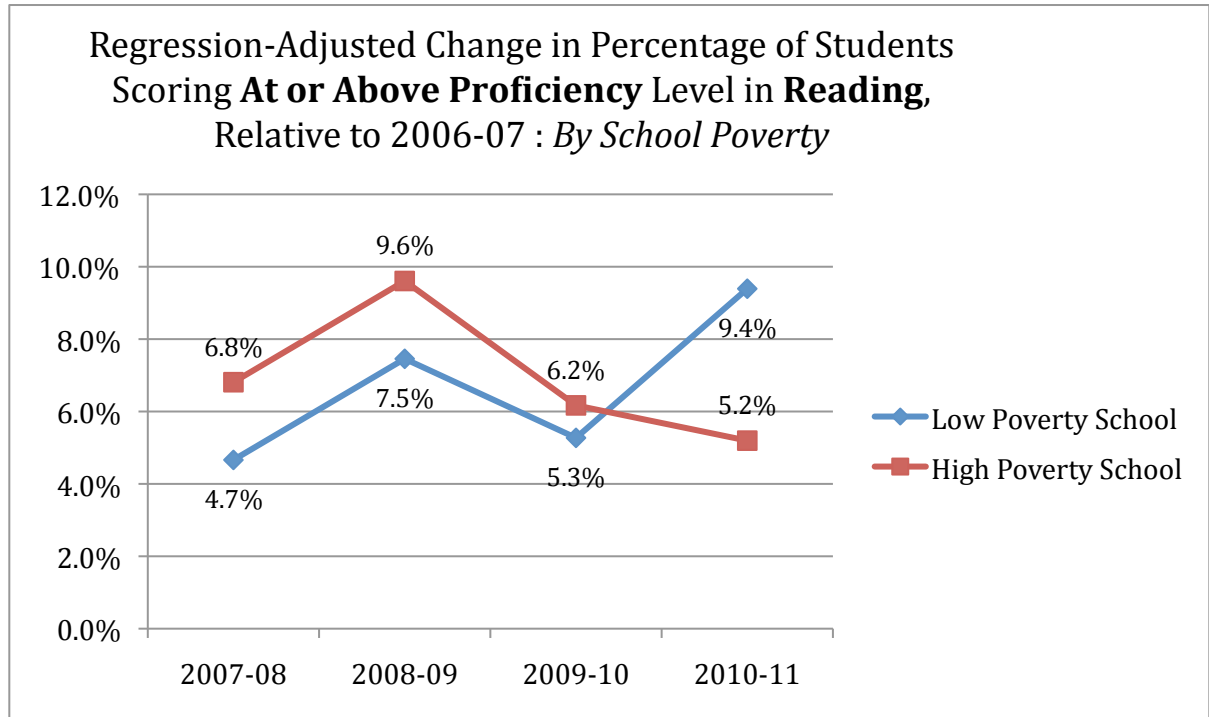
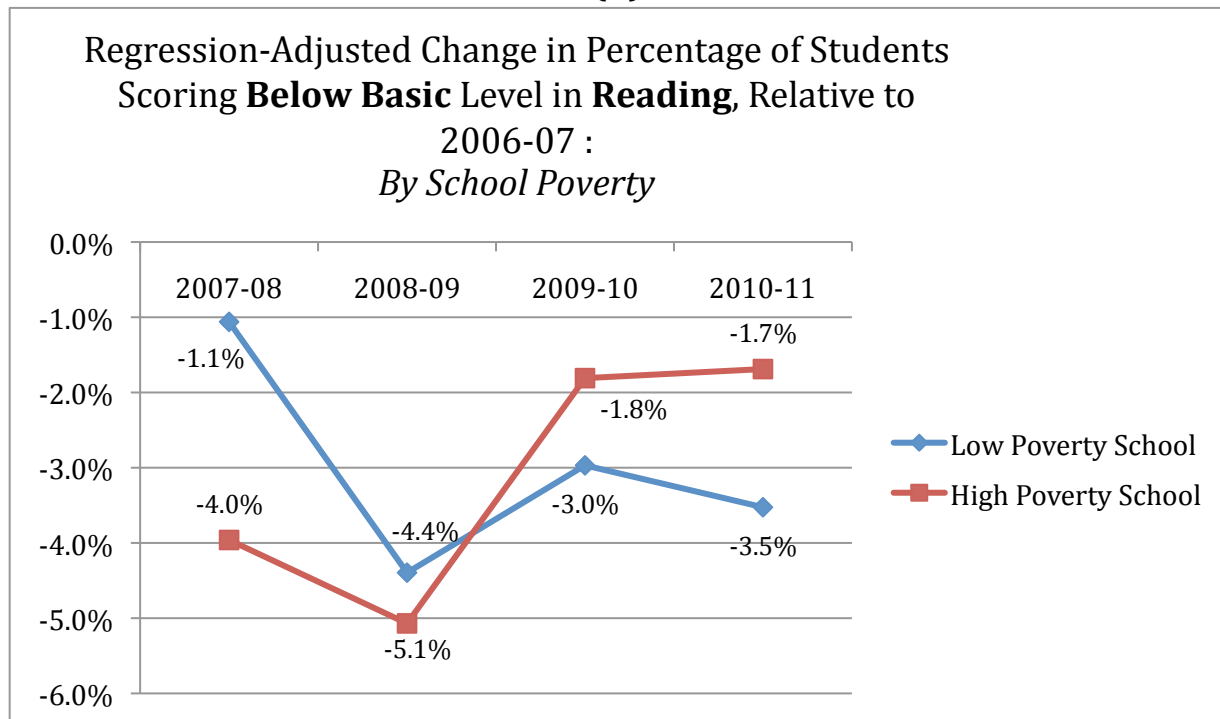


Figure 4A

(I)

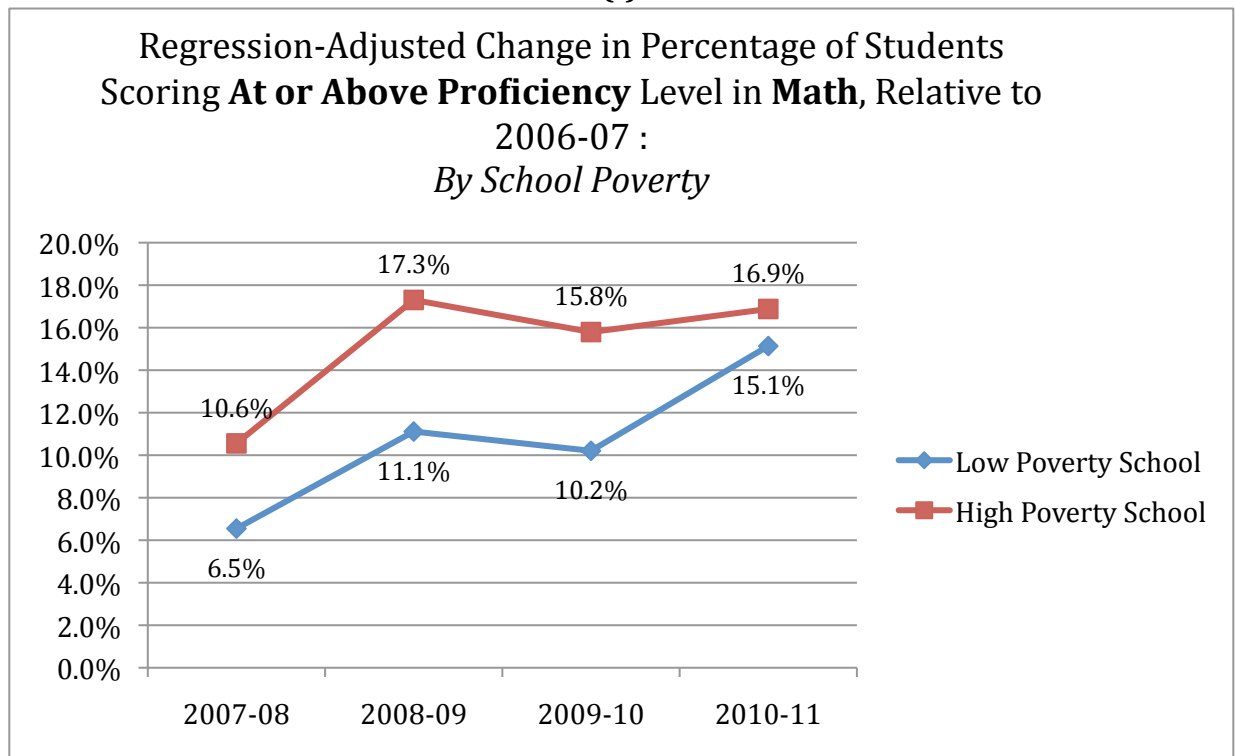


(II)

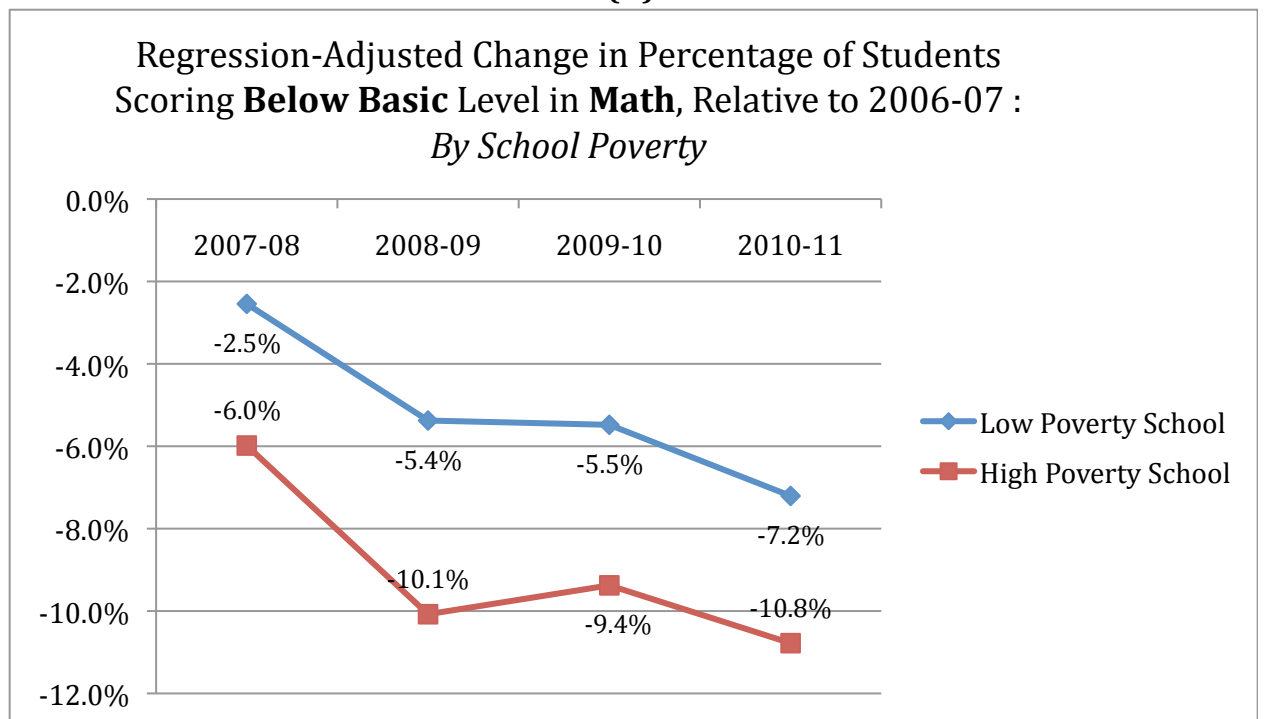


Notes: Schools are considered low poverty if less than 60 percent of their students are eligible for free or reduced price lunch, whereas high-poverty schools are defined as schools with at least 80 percent of their students eligible.

Figure 4B
(I)



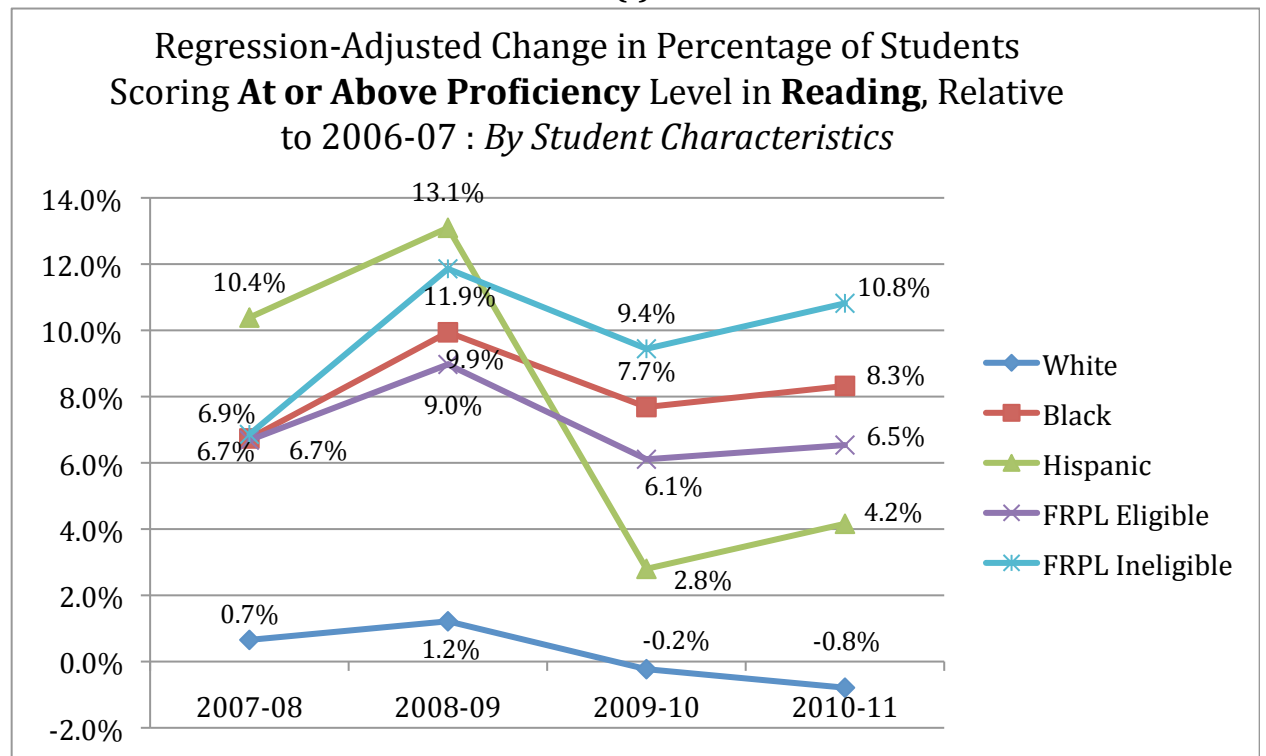
(II)



Notes: Schools are considered low poverty if less than 60 percent of their students are eligible for free or reduced price lunch, whereas high-poverty schools are defined as schools with at least 80 percent of their students eligible.

Figure 5A

(I)



(II)

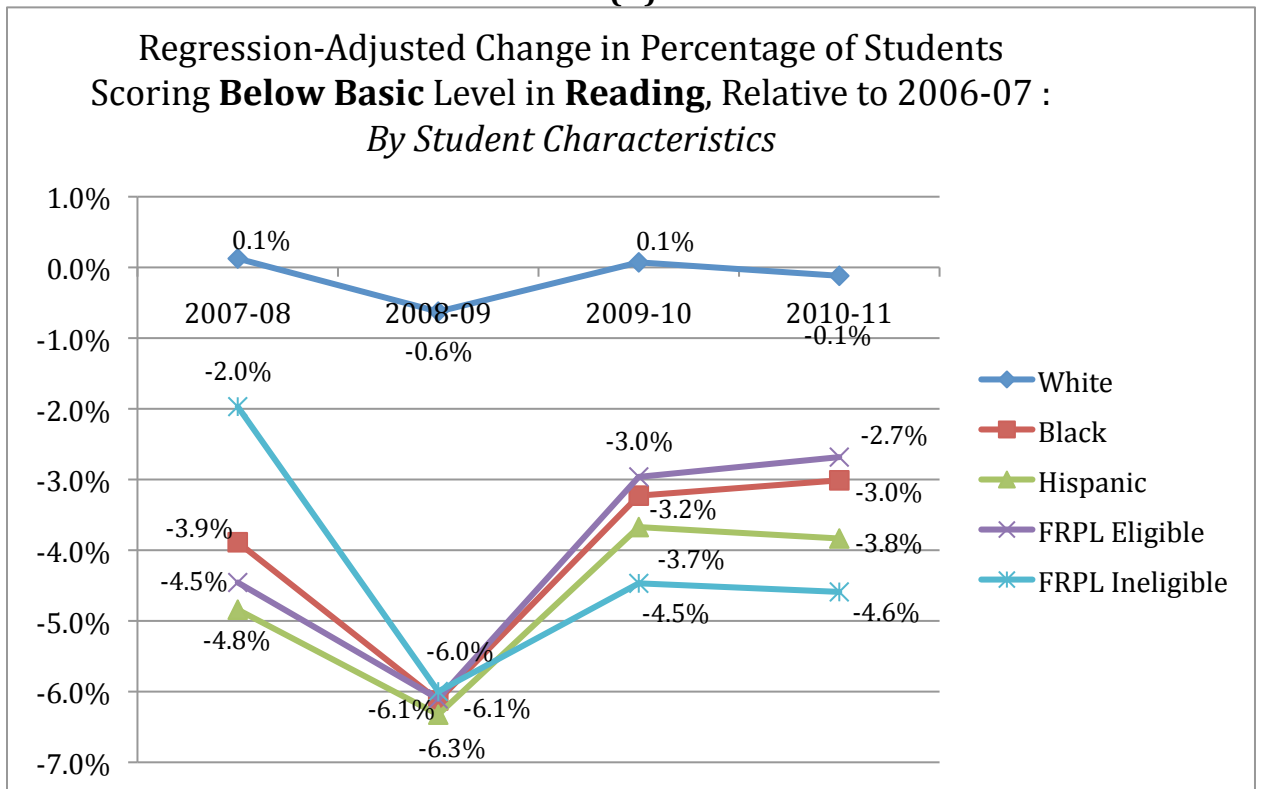
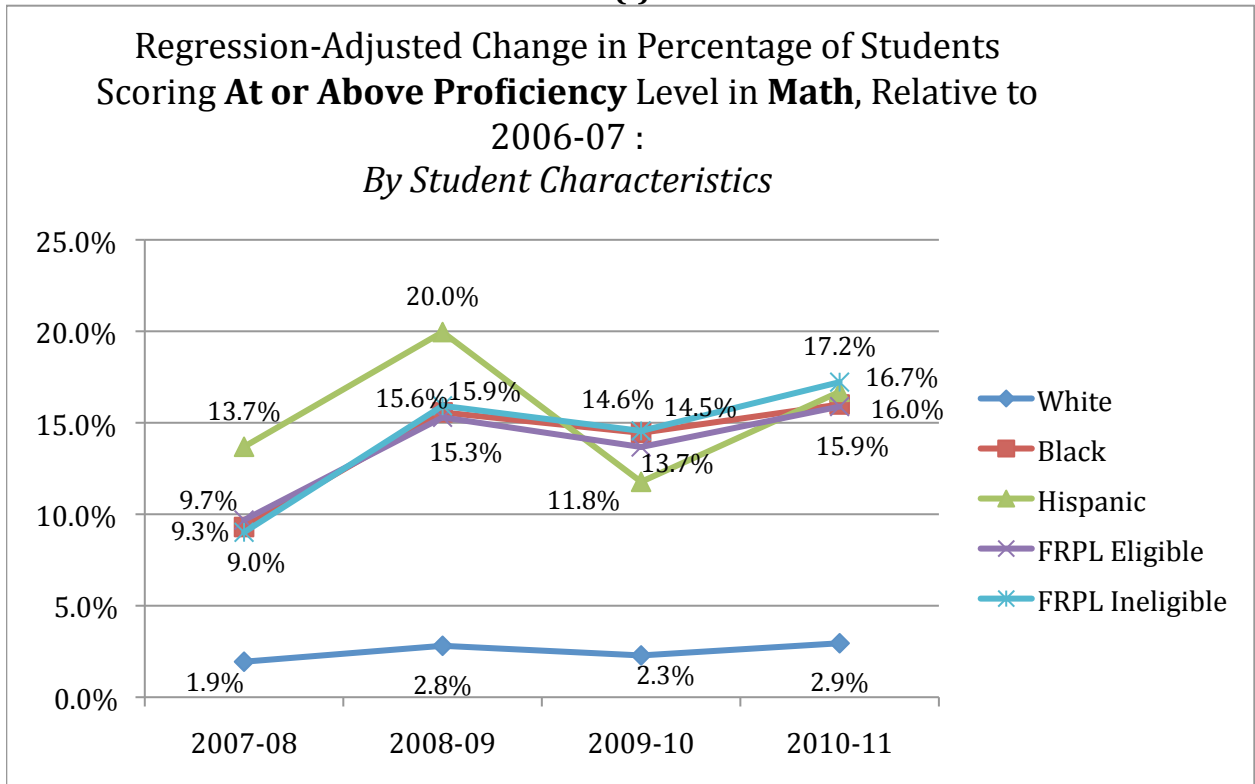
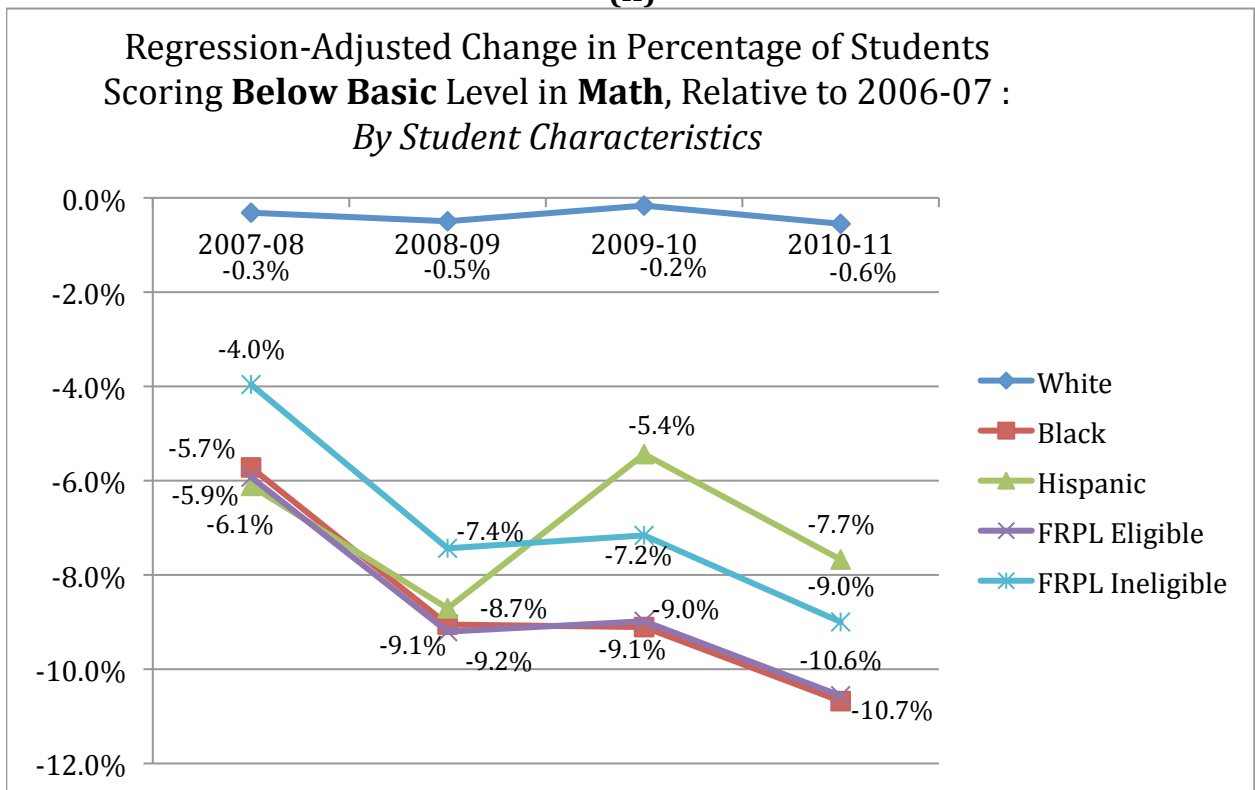


Figure 5B

(I)

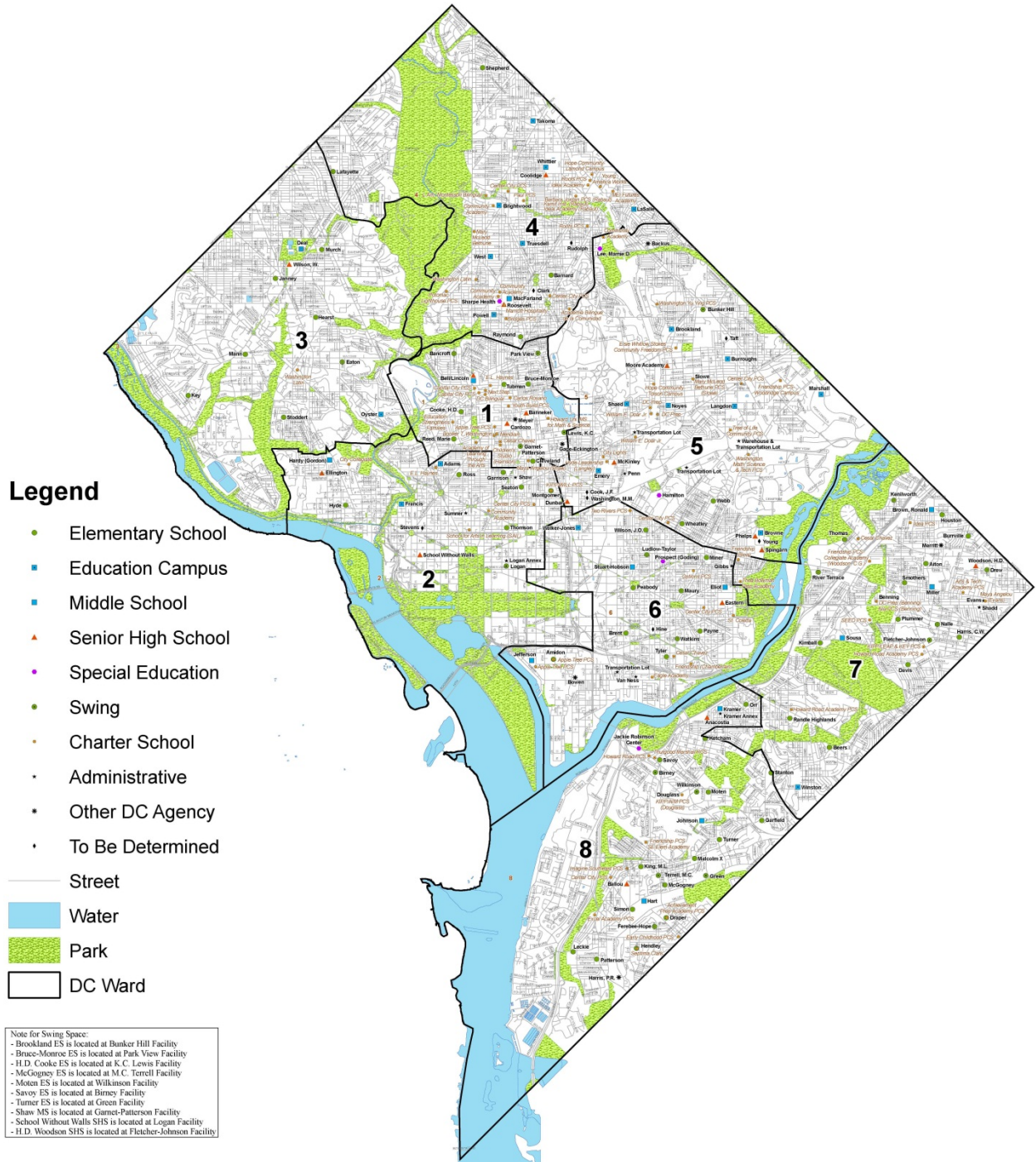


(II)



Section IV Technical Appendix B

Public Schools in DC, by Ward: 2008-2009



Source: <http://dcps.dc.gov/DCPS/maps> accessed on 10/08/2009.