National Assessment of Title I
Final Report

Summary of Key Findings

Institute of Education Sciences
National Center for Education Evaluation and Regional Assistance
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Preface

This is one of three documents constituting the mandated Final Report on the National Assessment of Title I. This *Summary of Key Findings* contains findings from both Volume I, *Implementation*, and Volume II, *Closing the Reading Gap: Findings from a Randomized Trial of Four Reading Interventions for Striving Readers*. Volume I, was prepared by the U.S. Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service. Volume II was prepared by the Corporation for the Advancement of Policy Evaluation. The National Assessment of Title I Interim Report was released in April 2006.

Disclosure of Potential Conflicts of Interests*

The mandate for the National Assessment of Title I included an Independent Review Panel to advise on methodological and other issues that arise in carrying out the evaluation. The Independent Review Panel's function is to insure that the assessment and studies adhere to the highest possible standards of quality with respect to research design, statistical analysis, and the dissemination of findings; and that the studies use valid and reliable measures to document program implementation and impacts; and that they ensure that the final report be reviewed by at least two independent experts in program evaluation. No one on the Independent Review Panel has financial interests that could be affected by the findings from the National Assessment of Title I.

* Contractors carrying out research and evaluation projects for IES frequently need to obtain expert advice and technical assistance from individuals and entities whose other professional work may not be entirely independent of or separable from the particular tasks they are carrying out for the IES contractor. Contractors endeavor not to put such individuals or entities in positions in which they could bias the analysis and reporting of results, and their potential conflicts of interest are disclosed.

Contents

I. Introduction

The No Child Left Behind Act of 2001 (NCLB), which first went into effect beginning with the 2002-03 school year, reauthorized the Title I program and made a number of significant changes. NCLB strengthened the accountability provisions of the law, requiring that states establish assessments in each grade from 3-8 and once in grades 10-12, and set annual targets for school and district performance that would lead to all students reaching proficiency on those assessments by the 2013-14 school year. Schools and districts that do not make adequate yearly progress (AYP) towards this goal are identified as needing improvement and are subject to increasing levels of interventions designed to improve their performance and provide additional options to their students. NCLB also required that all teachers of core academic subjects become highly qualified, which the law defines as holding a bachelor's degree and full state certification, as well as demonstrating competence, as defined by the state, in each core academic subject that he or she teaches. These and other changes were intended to increase the quality and effectiveness not only of the Title I program, but of the entire elementary and secondary education system in raising the achievement of all students, particularly those with the lowest achievement levels.

This report expands and updates the information provided in the *National Assessment of Title I Interim Report* that was released in April 2006.

- New data on the implementation of Title I are provided on the targeting and uses of Title I funds, services for private school students, characteristics of students participating in the school choice and supplemental services options, achievement trends on the NAEP science assessment, and surveys of parents and supplemental service providers. Updated data on student achievement on state assessments, school and district identification for improvement, and highly qualified teachers, and schools' AYP and improvement status are also provided.

- New data are provided for third- and fifth-graders who participated in one of four promising remedial reading interventions during the 2003-04 school year as part of the *Closing the Reading Gap* study. These students' reading skills were assessed again in spring 2005, one year after the end of the intervention, to evaluate sustained effects of the interventions.

A. National Assessment of Title I

As part of NCLB, the Congress mandated a National Assessment of Title I (Section 1501) to evaluate the implementation and impact of the program. This mandate required the establishment of an Independent Review Panel (IRP) to advise the Secretary on methodological and other issues that arise in carrying out the National Assessment and the studies that contribute to this assessment. In addition, the law specifically requires a longitudinal study of Title I schools to examine the implementation and impact of the Title I program.

On November 6, 2002, the President signed the "Education Sciences Reform Act of 2002," establishing a new National Center for Education Evaluation and Regional Assistance (NCEE) in the Institute of Education Sciences. Part D of this Act assigned responsibility for the National Assessment of Title I to NCEE. The creation of this Center represented an important shift in the purposes of program evaluation and the types of methodology used in Department evaluation studies from broader policy and program assessments to specific scientific evaluations of program effectiveness. In the past, Department program evaluation studies of Title I have focused primarily on issues of program implementation, such as targeting of federal resources, compliance with federal laws and regulations, characteristics of program participants, and types of services provided.

However, school superintendents, principals, and teachers often do not have the information they need in order to make sound decisions to improve instruction and raise student achievement. In many areas, the scientific evidence on the effectiveness of education programs is weak, inconsistent, or nonexistent. Evidence is needed on the effectiveness of specific interventions to inform Title I program improvement. NCLB repeatedly emphasizes the importance of adopting scientifically proven educational practices and programs. In an effort to significantly raise the quality of scientific evidence on program effectiveness, NCEE has launched a generation of evaluation studies that use the most rigorous evaluation designs possible to detect the impact of educational practices and programs on student achievement. Under the National Assessment of Title I, NCEE has begun studies of remedial reading programs, reading comprehension programs, and mathematics curricula to assess the effectiveness of educational programs in these important areas of academic achievement. These studies are randomized trials in which schools or teachers are randomly assigned to an educational program or to the control condition. Such experimental designs are the most reliable and accurate way of estimating the effectiveness of an educational intervention.

In response to the requirements in Section 1501, the National Assessment of Title I includes both studies of program implementation and of the effectiveness of specific interventions. Implementation studies, carried out by the Policy and Program Studies Service (PPSS) in the Office of Planning, Evaluation and Policy Development, provide nationally representative data on the implementation of key components of the Title I program. Effectiveness studies, carried out by the Institute of Education Sciences, provide evidence about those practices which produce the best results. Together these two types of studies can provide the information needed to effectively target technical assistance and assist policymakers in making decisions on the best use of resources.

B. Independent Review Panel for the National Assessment of Title I

The mandated function of the Independent Review Panel (IRP) for the National Assessment of Title I is to advise on methodological and other issues that arise in carrying out the assessment. The IRP is to ensure that the assessment and studies adhere to the highest possible standards of quality with respect to research design, statistical analysis, and the dissemination of findings; and that the studies use valid and reliable measures to document program implementation and impacts. The IRP was appointed in November 2002 and is made up of researchers, education practitioners, parents, and members of other organizations involved with the implementation and operation of programs under Title I. A list of current IRP members and their affiliations is included in Appendix A.

The IRP first met in January 2003 and has been instrumental in shaping the direction of implementation and effectiveness studies under the National Assessment of Title I. At this meeting, the IRP noted that an evaluation of the impact of Title I funds on student achievement was not feasible because it would

require random assignment of Title I funds to eligible districts and schools. Past evaluations of activities supported by Title I have provided little information on how to improve student achievement. The IRP recommended that Title I effectiveness studies focus on "what works" evaluations of well-defined interventions for improving achievement of high-poverty students in the critical areas of reading and mathematics. These evaluations would provide information on the effectiveness of specific interventions that could be adopted by schools to improve academic achievement. Additional information on IRP recommendations for effectiveness studies is included under "Future Reports" in Chapter III of this document.

The IRP has also provided essential advice on the conduct of implementation studies. At its first meeting, the panel agreed that the mandated national longitudinal study of Title I schools should be launched as soon as possible, and most members advised that it should focus on program implementation rather than the impact of federal funds for reasons described above. The IRP recommended that the National Longitudinal Study of No Child Left Behind include a survey of parents concerning the Title I school choice and supplemental educational services options in the law.

The IRP has met eight times over the past three years. Several meetings were held in the first year after the panel's appointment in November 2002: January 30-31, 2003; March 17-18, 2003; September 22, 2003; and November 9, 2003. There were also IRP meetings on November 21, 2004, on July 29, 2005, and on June 14-15 and October 15-16, 2006. The IRP has provided valuable advice on the design and implementation of the Title I studies as well as extensive comments on reports from the National Assessment.

C. Key Provisions of Title I under the No Child Left Behind Act

NCLB, which went into effect beginning with the 2002-03 school year, strengthened the assessment and accountability provisions of the law, requiring that states annually test all students in grades 3-8 and once in grades 10-12 with assessments that are aligned with challenging state standards. States must also set targets for school and district performance that lead to all students achieving proficiency on state reading and mathematics assessments by the 2013-14 school year. Schools and districts that do not make adequate yearly progress (AYP) towards this goal for two consecutive years are identified as needing improvement and are subject to increasing levels of interventions designed to improve their performance, as well as to provide additional options to their students. In schools identified for improvement, districts must offer students the option to transfer to another school. If an identified school misses AYP again (for a third year), low-income students in the school must be offered the option to receive supplemental educational services from a state-approved provider. If an identified school misses AYP for a fourth year, the district must take one of a set of "corrective actions" specified in the law, and if the school misses AYP for a fifth year, the district must begin planning to restructure the school.

NCLB also requires that all teachers of core academic subjects become "highly qualified," which the law defines as having a bachelor's degree and full state certification as well as demonstrating competence, as defined by the state, in each core academic subject that he or she teaches. Exhibit 1 provides a more detailed summary of key NCLB provisions.

Exhibit 1 **Key Provisions of the No Child Left Behind Act**	
State assessments	States must implement annual state assessments in reading and mathematics in grades 3-8 and at least once in grades 10-12, and in science at least once in each of three grade spans: 3-5, 6-9, and 10-12. Assessments must be aligned with challenging state content and academic achievement standards. States must provide for participation of all students, including students with disabilities and limited English proficient (LEP) students. States must provide for the assessment of English language proficiency of all LEP students.
Adequate yearly progress (AYP)	States must set annual targets that will lead to the goal of all students' reaching proficiency in reading and mathematics by 2013-14. For each measure of school performance, states must include absolute targets that must be met by key subgroups of students (major racial/ethnic groups, low-income students, students with disabilities, and LEP students). To make AYP, schools and districts must meet annual targets for each student subgroup in the school, and must test 95 percent of students in each subgroup. States also must define an "other academic indicator" that schools must meet in addition to proficiency targets on state assessments.
Schools identified for improvement	Title I schools and districts that do not make AYP for two consecutive years are identified for improvement and are to receive technical assistance to help them improve. Those that miss AYP for additional years are identified for successive stages of interventions, including corrective action and restructuring (see below). To leave identified-for-improvement status, a school or district must make AYP for two consecutive years.
Public school choice	Districts must offer all students in identified Title I schools the option to transfer to a non-identified school, with transportation provided by the district.
Supplemental educational services	In Title I schools that miss AYP for a third year, districts also must offer low-income students the option of supplemental educational services from a state-approved provider.
Corrective actions	In Title I schools that miss AYP for a fourth year, districts also must implement at least one of the following corrective actions: replace school staff members who are relevant to the failure to make AYP; implement a new curriculum; decrease management authority at the school level; appoint an outside expert to advise the school; extend the school day or year; or restructure the internal organization of the school.
Restructuring	In Title I schools that miss AYP for a fifth year, districts also must begin planning to implement at least one of the following restructuring interventions: reopen the school as a charter school; replace all or most of the school staff; contract with a private entity to manage the school; turn over operation of the school to the state; or adopt some other major restructuring of the school's governance. Districts must spend a year planning for restructuring and implement the school restructuring plan the following year (if the school misses AYP again for a sixth year).
Highly qualified teachers	All teachers of core academic subjects must be "highly qualified" as defined by NCLB and the state. To be highly qualified, teachers must have a bachelor's degree, full state certification, and demonstrated competence in each core academic subject that they teach. Subject-matter competence may be demonstrated by passing a rigorous state test, completing a college major or coursework equivalent, or (for veteran teachers) meeting standards established by the state under a "high, objective uniform state standard of evaluation" (HOUSSE).
Use of research based practices	Schools must use effective methods and instructional strategies that are based on scientifically-based research.

II. Title I Implementation Studies

A. Key Evaluation Questions and Studies

To answer questions of program implementation, the Department has relied on surveys of states, districts, schools, teachers, and parents as well as more in-depth case studies and analyses of state performance reports and other extant data sources.

The key evaluation questions guiding the implementation studies are:

- Whom does the Title I Part A program serve? How are the funds distributed? What does the money buy?

- To what extent have states implemented and reported on the annual assessments in reading, mathematics, and science that are required under NCLB? Are students whom Title I is intended to benefit making progress toward meeting state academic achievement standards in reading and mathematics?

- What are the reasons that schools do not make adequate yearly progress? How many and what types of schools are identified for improvement? What assistance is provided to schools and districts identified for improvement?

- How many students are eligible to participate in school choice and supplemental education services, and how many actually do so?

- How have states implemented the standards and procedures for teachers to demonstrate that they are "highly qualified teachers" and how many teachers meet these requirements? To what extent are teachers participating in professional development activities?

The report draws on data from two Department evaluations of NCLB implementation, the National Longitudinal Study of NCLB, and the Study of State Implementation of Accountability and Teacher Quality Under NCLB, both of which collected data in the 2004-05 school year. The report also includes data from other evaluation studies, state performance reports, the National Assessment of Educational Progress, and other sources.

B. Key Findings

These key findings are drawn from *Volume II: Implementation* (referenced at the bottom of this page*) which contains a more extensive discussion of the implementation study findings. Unless otherwise indicated, the key findings reported below describe the Title I program nationally. All findings reported were statistically significant at the 0.05 level.

Title I Participants and Funding

Title I funds go to 93 percent of the nation's school districts and to 56 percent of all public schools. Most Title I funds (74 percent) go to elementary schools, and nearly three-fourths (72 percent) of Title I participants in 2004-05 were in pre-kindergarten though grade 6. Minority students accounted for two-thirds of Title I participants.

- **Fueled by a growing use of Title I schoolwide programs (see Exhibit 2), the number of students counted as Title I participants has tripled over the past decade, rising from 6.7 million in 1994-95 to 20.0 million in 2004-05.** In 2004-05, 87 percent of Title I participants were in schoolwide programs.

- **The number of private school students participating in Title I has increased gradually over the past 20 years, to 188,000 in 2004-05**, although it remains below the high of 213,500 reached in 1980-81. Private school students typically received Title I services from district teachers who traveled to the private school to serve students. Private school principals reported that districts usually consulted with private school representatives about Title I services, although they indicated that professional development, parent involvement, and student assessment were not always covered in those consultations.

- **Funding for Title I, Part A, has increased by 35 percent over the past seven years**, after adjusting for inflation, from $9.5 billion in FY 2000 to $12.8 billion in FY 2007.

- **A majority of Title I funds were targeted to high-poverty districts and schools, but low-poverty districts and schools also received these funds.** In 2004-05, about three-fourths (76 percent) of Title I funds went to high–poverty schools (with 50 percent or more students eligible for free or reduced-price lunch). Low-poverty schools (with less than 35 percent of students eligible for free or reduced price lunch) accounted for 14 percent of Title I schools and received 6 percent of Title I funds.

- **At the district level, Title I targeting has changed little since 1997-98, despite the intent of NCLB to target more funds to high-poverty school districts by allocating an increasing share of the funds through the Targeted Grants and Incentive Grants formulas.** The share of funds appropriated through the Targeted and Incentive formulas rose from 18 percent of total Title I funds in FY 2002 to 32 percent in FY 2004, while the less targeted Basic Grants formula declined from 85 percent to 57 percent of the funds. Despite these shifts, the share of funds actually received by the highest-poverty quartile of districts in 2004-05 (52 percent) was similar to their share in 1997-98 (50 percent).

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* Stullich, Stephanie, Elizabeth Eisner, Joseph McCrary. Report on the *National Assessment of Title I, Volume I, Implementation of Title I*, Washington, D.C.: U.S. Department of Education, Institute of Education Sciences, 2007.

Exhibit 2
Number of Schoolwide Programs and Targeted Assistance Schools, 1994-95 to 2004-05

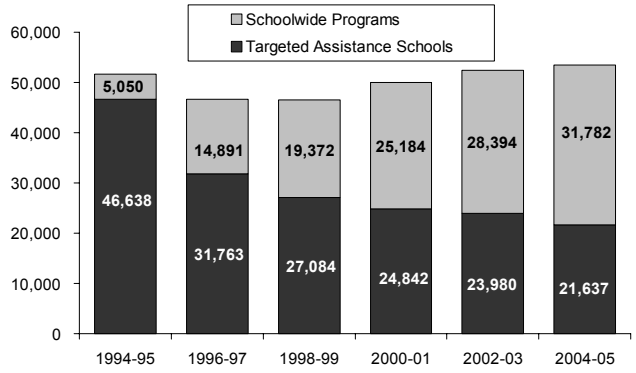


Exhibit reads: The number of schoolwide programs increased from 5,050 in 1994-95 (10 percent) to 31,782 in 2004-05 (58 percent).

Source: Consolidated State Performance Reports (for 50-52 states).

- **At the school level, the share of Title I funding for the highest-poverty schools also remained virtually unchanged since 1997-98, and those schools continued to receive smaller Title I allocations per low-income student than did low-poverty schools.** The average Title I allocation in the highest-poverty Title I schools was $558 per low-income student in 2004-05, compared with $563 in 1997-98 (see Exhibit 3). The middle two poverty groups of schools, however saw statistically significant increases in their per-pupil funding. Low-poverty schools did not see a significant change in their share of funding, but they continued to receive larger Title I allocations per low-income student than did the highest-poverty schools ($763 vs. $558).

- **Most Title I funds were used for instruction, supporting salaries for teachers and instructional aides, providing instructional materials and computers, and supporting other instructional services and resources.** In the 2004-05 school year, nearly three-fourths (73 percent) of district and school Title I funds were spent on instruction, 16 percent were used for instructional support, and another 11 percent were used for program administration and other support costs such as facilities and transportation. About half (49 percent) of local Title I funds were spent on teacher salaries and benefits, with an additional 11 percent going for teacher aides.

Exhibit 3
Average Title I School Allocation Per Low-Income Student, by School Poverty Level, 1997-98 and 2004-05
(in constant 2004-05 dollars)

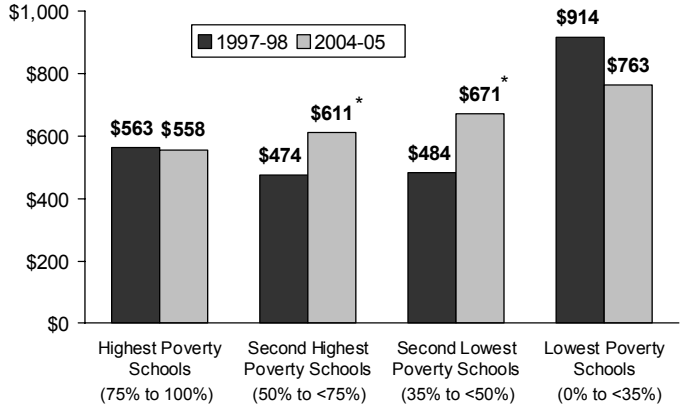


Exhibit reads: The average Title I allocation in the highest-poverty schools was $558 per low-income student in 2004-05, about the same as in 1997-98.

* Indicates that the 2004-05 amount is significantly different from the 1997-98 amount ($p<.05$).

Sources: Study of Education Resources and Federal Funding (1997-98) (n=4,563 schools); National Longitudinal Study of NCLB (2004-05) (n=8,566 schools).

Student Achievement

For both state assessment and NAEP results, recent achievement trends through 2004 or 2005 are positive overall and for key subgroups, particularly in mathematics and at the elementary level. At this early stage of NCLB implementation— states, districts, and schools began to implement the NCLB provisions in 2002-03—it is not possible to say whether the trends described below are attributable to NCLB, to other improvement initiatives that preceded it, or a combination of both.

- **In states that had three-year trend data available from 2002-03 to 2004-05, the percentage of students achieving at or above the state's proficient level rose for most student subgroups in a majority of the states.** For example, state reading assessments administered in the 4th grade or an adjacent elementary grade show achievement gains in elementary reading for low-income students in 27 out of 35 states (77 percent) that had trend data available for this subgroup (see Exhibit 4). Across all student subgroups examined, states showed achievement gains in 78 percent of the cases. Results for mathematics and for 8th grade show similar patterns.

Exhibit 4
Student Achievement Trends on State Assessments in 4th-Grade Reading and Mathematics, from 2002-03 to 2004-05, by Student Subgroup

	Percentage of States Showing Increase in Proportion of Students Performing At or Above the State's Proficient Level		Predicted Percentage of States That Would Meet 100% Proficient Target, Based on Recent Rates of Change	
	Reading	Mathematics	Reading	Mathematics
All students	83%	89%	26%	34%
Low-income	77%	89%	29%	38%
Black	76%	80%	32%	33%
Hispanic	80%	89%	33%	37%
White	71%	89%	24%	35%
LEP	77%	86%	38%	35%
Migrant	76%	81%	39%	42%
Students with disabilities	78%	81%	28%	30%
Average across all subgroups	**78%**	**86%**	**31%**	**35%**

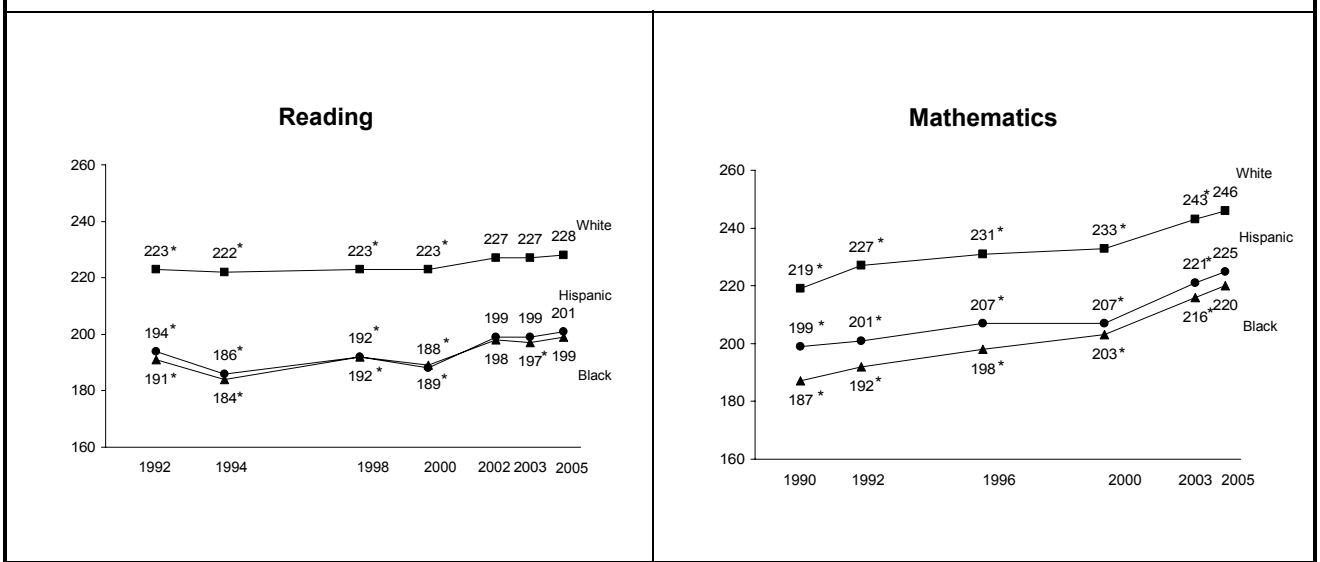
Exhibit reads: The proportion of all students performing at or above states' "proficient" levels in 4th-grade reading (or another nearby elementary grade) increased between 2002-03 and 2004-05 in 83 percent of the states that had consistent trend data available; however, based on the rates of change that states achieved during that period, only 26 percent of the states would reach the goal of 100 percent proficient by 2013-14.

Source: Consolidated State Performance Reports (n = 25 to 36 states). For states that did not consistently assess students in 4th-grade reading and mathematics from 2002-03 to 2004-05, either 3rd-grade or 5th-grade assessments were used.

- **Based on trend data for 36 states, most states would not meet the goal of 100 percent proficiency by 2013-14 unless the percentage of students achieving at the proficient level increased at a faster rate.** For example, 29 percent of the states with consistent elementary reading assessment data for low-income students would meet the 100 percent goal by 2013-14 for this subgroup if they sustained the same rate of growth that they achieved from 2002-03 to 2004-05 (see Exhibit 4). Looking across eight different student subgroups (low-income, black, Hispanic, white, LEP, migrant, students with disabilities, and all students), an average of 31 percent of the subgroups within the 36 states would be predicted to reach 100 percent proficiency in 4th grade reading based on current growth rates. Only one state (Nebraska) would be predicted to reach 100 percent proficiency for all subgroups and assessments that were included in this analysis.

- **Recent NAEP trends showed gains for 4th-grade students in reading, mathematics, and science, overall and for minority students and students in high-poverty schools, but trends for middle and high school students were mixed.** For example, from 2000 to 2005, 4th-grade black students gained 10 points in reading and Hispanic students gained 13 points, while in mathematics, black students gained 17 points and Hispanic students gained 18 points. Over the longer term, black and Hispanic students showed even larger gains in mathematics (33 points and 26 points, respectively, from 1990 to 2005), but somewhat smaller gains in reading (eight points and seven points, respectively, from 1992 to 2005) (see Exhibit 5).

Exhibit 5
Main NAEP Results in Reading and Mathematics, 1990 to 2005:
Average Scale Scores in 4th Grade by Race/Ethnicity



* Indicates that the score is significantly different from the one in 2005 ($p<.05$).

Source: National Center for Education Statistics, Main NAEP.

- **Neither 8th- nor 12th-grade students made gains in reading or science achievement.** Eighth-grade students made significant gains in mathematics, but not in reading or science. At the 12th-grade level, reading and science achievement in 2005 was unchanged from the preceding assessments (2002 for reading and 2000 for science) and showed significant declines from the first years those assessments were administered (1992 for reading and 1996 for science). Recent trend data for 12th-grade mathematics are not available.

- **State assessments and NAEP both provided some indications that achievement gaps between disadvantaged students and other students may be narrowing.** For example, state assessments showed a reduction in the achievement gap between low-income students and all students in most states, typically a reduction of one to three percentage points. On the Trend NAEP, which has used a consistent set of assessment items since the 1970's, achievement gains for black and Hispanic substantially outpaced gains made by white students, resulting in significant declines in black-white and Hispanic-white achievement gaps, but recent changes in achievement gaps often were not statistically significant.

Under NCLB, high schools are held accountable for graduation rates, but methods for calculating graduation rates vary considerably across states. The averaged freshman graduation rate (calculated by the National Center for Education Statistics based on data from the Common Core of Data) is useful for providing a common standard against which state-reported graduation rates may be compared. The

median state graduation rate in 2004 was 84 percent based on state reports and 77 percent based on the averaged freshman graduation rate.

- **The recent trend in the averaged freshman graduation rate has been fairly steady, and the mean graduation rate in 2004 (75 percent) was slightly higher than in 1996 (73 percent).** However, these longitudinal data may not be strictly comparable because of changes in reporting over time.

Implementation of State Assessment Systems

During the 2005-06 school year, all states administered assessments intended to meet NCLB requirements for reading and mathematics, and as of September 2007, 24 state assessment systems had been approved by the Department, through a peer review process, as meeting all NCLB testing requirements. The remaining 28 states fell into one of two categories: approval expected (8), or approval pending (20). The eight states currently designated as "approval expected" submitted evidence indicating that their assessments were fully compliant with the statutory and regulatory requirements, but certain elements were not yet complete because of the nature of assessment development. For the 20 states designated as "approval pending," the evidence submitted indicated that one or more fundamental components were missing or did not meet the statutory and regulatory requirements. Although science assessments are not required until 2007-08 under NCLB, three states had their general and alternate assessments in science approved ahead of schedule along with their reading and mathematics assessments.

- **Many state approaches to assessing English language proficiency (ELP) were still evolving as of 2004-05.** Although all states were implementing some kind of ELP assessment in 2004-05, 44 states indicated that they anticipated making revisions to their ELP assessments. Twenty states reported that their ELP assessment met NCLB requirements, 27 states planned to implement an ELP assessment that meets NCLB requirements by 2005-06, and five states had not decided which ELP assessment to use to meet NCLB requirements.

- **As of 2004-05, states varied in the extent to which they have met the requirement to annually assess 95 percent or more of their students across various subgroups.** For the low-income student subgroup, 48 states assessed at least 95 percent of students in reading and 49 states assessed at least 95 percent of students in math. For the students with disability subgroup, 45 states assessed at least 95 percent of students in reading and 46 states met the requirement in math. However, for the LEP student subgroup, 38 states met the requirement in reading and 45 states met the requirement in math.

Accountability and Support for School Improvement

States identified 12 percent (11,648) of all schools for improvement for 2005-06 (based on test scores for 2004-05 and earlier). Title I schools accounted for 84 percent of all identified schools, and the 9,808 identified Title I schools represented 18 percent of all Title I schools. About two-thirds (68 percent) of the identified Title I schools were in their first year or second year of improvement, with another 14 percent in corrective action and 19 percent in restructuring status.

- **Schools with high concentrations of poor and minority students were more likely to be identified than other schools, as were schools located in urban areas.** Just over one-third of high-poverty schools (32 percent) and schools with high percentages of minority students

(31 percent) were identified schools in 2004-05, compared with 4 percent of schools with low concentrations of these students (see Exhibit 6).

Exhibit 6
Percentage of Schools Identified for Improvement, By School Characteristics, 2005-06

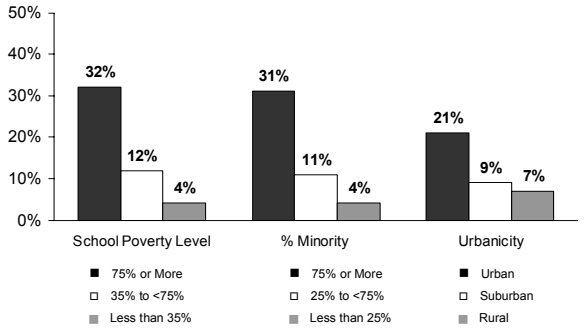


Exhibit reads: In 2005-06, 32 percent of high-poverty schools were identified for improvement, compared with 4 percent of low-poverty schools.

Source: Study of State Implementation of Accountability and Teacher Quality Under NCLB (based on data reported by 51 states and between 80,812 and 87,728 schools).

Adequate Yearly Progress

Three-fourths (75 percent) of all schools and districts met all applicable AYP targets in 2004-05 testing. The number of all schools missing AYP (22,093) based on 2004-05 testing is nearly double the number of schools identified for improvement for 2005-06 (11,648). If many non-identified schools that did not make AYP in 2004-05 testing missed AYP again the following year, the number of identified schools could rise substantially in 2006-07.

- **Schools most commonly missed AYP for the achievement of all students and/or multiple subgroups; only in a minority of cases did schools miss only one AYP target.** Based on data from 39 states, among schools that missed AYP in 2004-05, 43 percent did not meet achievement targets for the "all students" group in reading, mathematics, or both and another 19 percent missed AYP for the achievement of two or more subgroups (see Exhibit 7). Only 21 percent missed AYP solely due to the achievement of a single subgroup. Four percent missed solely due to the "other academic indicator," and 3 percent missed solely due to insufficient test participation rates. The remaining 10 percent of schools that missed AYP missed for other combinations of AYP targets.

Exhibit 7
AYP Targets Missed by Schools That Did Not Make Adequate Yearly Progress, 2004-05

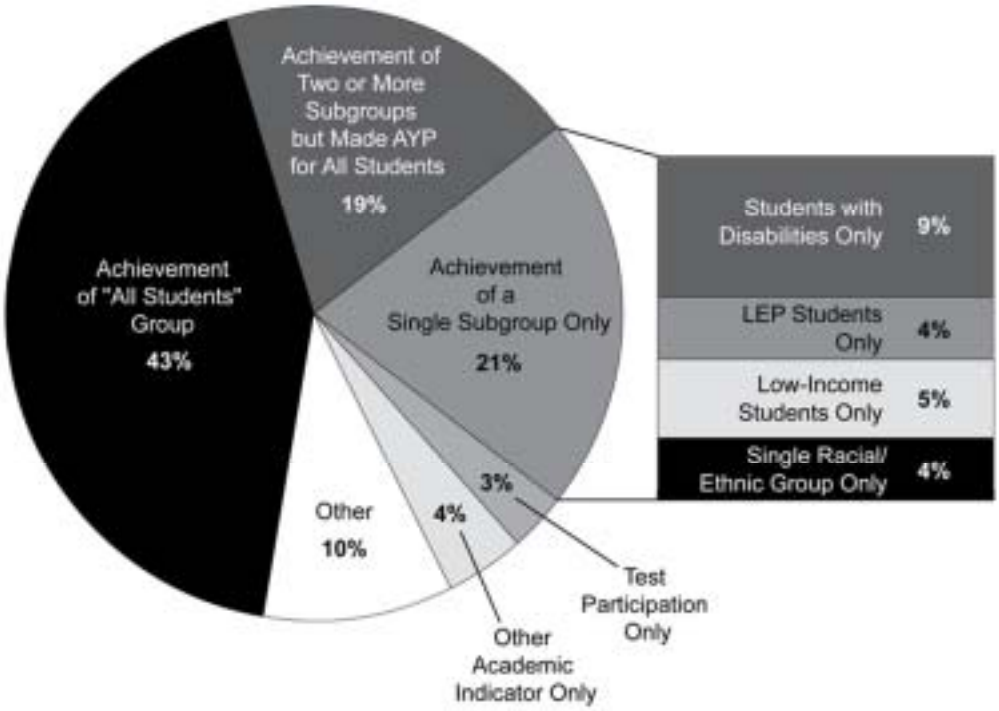


Exhibit reads: In 2004-05 testing, 43 percent of schools missed AYP for the achievement of the "All Students" group in reading, mathematics, or both.

Source: Study of State Implementation of Accountability and Teacher Quality Under NCLB (based on data from 39 states and 19,471 schools that missed AYP in these states).

- **Schools in states that had set more challenging proficiency standards than other states, as measured relative to NAEP, were less likely to make AYP and have further to go to reach the NCLB goal of 100 percent proficient.** In states that had higher proficiency standards in 4th and 8th grade reading (based on using NAEP to benchmark the states against a common metric), 70 percent of schools made AYP in 2003-04, compared with 84 percent of schools in states that had lower proficiency standards.

- **NCLB required states to set starting points for the percentages of students achieving at the proficient level in order to measure progress towards the goal of 100 percent proficiency. States that had higher standards tended to have lower starting points and thus had further to go to reach 100 percent proficiency, compared with states that had set lower standards.** For example, for 8th grade mathematics, states with higher proficiency standards had an average starting point of 16 percent, and therefore need to raise their percentage of students performing at the proficient level by 84 percentage points, while states with lower proficiency standards had an average starting point of 51 percent and need to raise their percent proficient by 49 percentage points (see Exhibit 8).

Exhibit 8
Improvement Needed to Reach 100 Percent Proficiency by 2013-14, by Level of Difficulty of State Academic Achievement Standards, for 8th Grade Mathematics

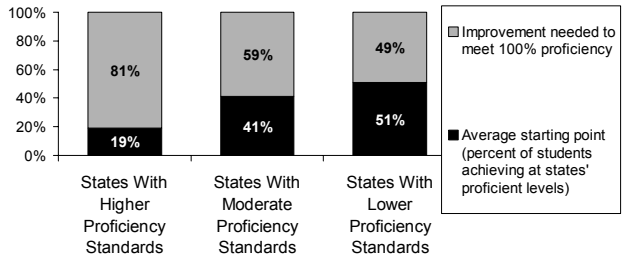


Exhibit reads: States that had set higher proficiency standards than other states (measured relative to NAEP) had an average AYP starting points of 19 percent and needed to increase their percentage of students achieving at the proficient level by 81 percentage points in order to reach NCLB's goal of 100 percent proficiency by 2013-14.

Note: States were required to set starting points for measuring progress towards the goal of 100 percent proficiency, based on the percentage of students achieving at the proficient level in 2001-02, either for the lowest-achieving student subgroup in the state or for the school at the 20th percentile of enrollment among schools ranked by their percent proficient (whichever is higher).

Sources: Study of State Implementation of Accountability and Teacher Quality Under NCLB (n=34 states). Categorizations of states as having higher or lower proficiency standards are based on data from the National Center for Education Statistics (2007), Mapping 2005 State Proficiency Standards Onto the NAEP Scales (NCES 2007-482). Data on average starting points are from State Accountability Workbooks and State Educational Agency Websites.

School Improvement Activities

Fifteen states notified schools of the final determinations on whether or not they had been identified for improvement for 2004-05 (based on 2003-04 testing) before September 2004. Thirty states provided preliminary results by that time. NCLB regulations require states to notify schools and districts of their school improvement status prior to the beginning of the school year; this is important to enable districts with identified schools to notify parents of eligible students about their Title I choice options in a timely manner.

- **Identified schools were more likely to report needing assistance in a variety of specific areas than non-identified schools, and they also reported receiving more days of assistance than non-identified schools.** For example, 80 percent of identified schools reported needing technical assistance to improve the quality of professional development, compared with 53 percent of non-identified schools. Similarly, 74 percent of identified schools

reported needing assistance to get parents more engaged in their child's education, compared with 46 percent of non-identified schools.

- **Nearly one-third (30 percent) of elementary schools identified for improvement reported increasing the amount of instructional time in reading by more than 30 minutes per day in 2004-05, and 17 percent reported a similar increase in instructional time for mathematics.** Non-identified schools less frequently reported such increases. Fifty-five percent of identified secondary schools also more commonly reported increasing instructional time for low-achieving students in reading compared to 36 percent of non-identified schools.

- **Almost three-fourths of all schools offered extended-time instructional programs, and the percentage of students served through after-school programs doubled from 1997-98 to 2004-05** (from 5 percent to 10 percent). In schools that implemented after-school programs, the programs provided an additional 134 hours of instruction annually, on average, or about a 12 percent increase in instructional time for participating students.

- **Twenty-two percent of principals and 30 percent of elementary teachers in identified schools were not aware that their school had been identified as in need of improvement.** Parents in a sample of eight urban school districts were less likely to know whether their child's school had been identified as low-performing, compared with principals and teachers; however, parents in schools that had been identified for improvement were significantly less likely than other parents to express satisfaction with their school.

School Choice and Supplemental Educational Services

Although more students were eligible to participate in the Title I school choice option than in supplemental educational services, a larger number of students actually participated in the supplemental services option. Based on district reports, more than twice as many students were eligible to transfer to another school under the Title I school choice option in 2004-05 (5.2 million) as were eligible to receive supplemental services (2.4 million). However, nearly ten times as many students actually participated in the supplemental services option (446,000) as participated in the school choice option (48,000) in that year (see Exhibit 9).

- **Student participation in both Title I choice options has increased several fold since the first year of implementation of the NCLB choice provisions.** Participation in the school choice option more than doubled over the three-year period from 2002-03 to 2004-05, while participation in supplemental services increased more than ten-fold.

Exhibit 9
Number of Students Participating in Title I School Choice and Supplemental Services, 2002-03 to 2004-05

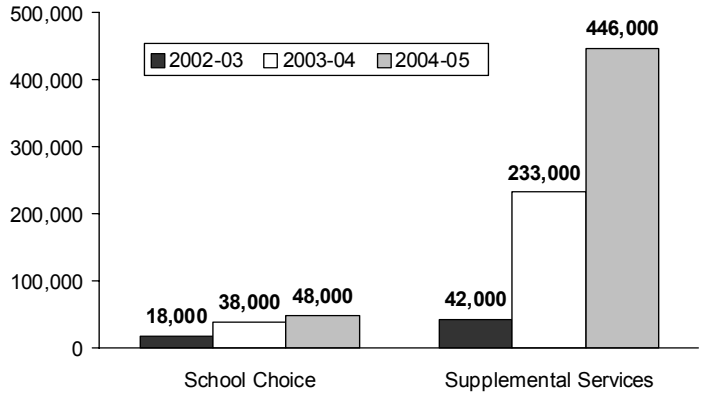


Exhibit reads: The number of students participating in Title I school choice rose from 18,000 in 2002-03 to 48,000 in 2004-05.

Source: Study of Title I Accountability Systems and School Improvement Efforts (2002-03); National Longitudinal Study of NCLB and Study of State Implementation of Accountability and Teacher Quality Under NCLB (2003-04); Consolidated State Performance Reports (2004-05).

- **In a sample of nine urban districts*, African-American students had the highest participation rate of all racial and ethnic groups in Title I supplemental services and an above-average participation rate in Title I school choice (16.9 percent and 0.9 percent, respectively).** Hispanic students, LEP students, and students with disabilities had relatively high participation rates in supplemental services and relatively low participations rates in school choice (see Exhibit 10).

- **Although nationally nearly all districts required to offer school choice and supplemental services reported that they notified parents about these options, a survey of eligible parents in eight urban school districts* found that many parents were unaware of these choice options.** Among parents with a child eligible for the Title I school choice option, 27 percent said they had received notification about this option from the school district, while 53 percent of parents with a child eligible for supplemental services said they had been notified.

* An analysis of Title I choice options in nine large urban school districts provides more in-depth information about the characteristics of participating students in these districts; a survey of parents was also conducted in eight of the nine districts. Because this district sample was not nationally representative, findings cannot be generalized to the nation.

Exhibit 10
Participation Rates for Title I School Choice and Supplemental Educational Services, By Student Subgroup, in Nine Large Urban School Districts, 2004-05*

	School Choice	Supplemental Services
White	1.1%	10.1%
Black	0.9%	16.9%
Hispanic	0.4%	11.6%
LEP	0.3%	13.1%
Students with disabilities**	0.4%	14.6%

Exhibit reads: In a sample of nine large urban school districts, 1.1 percent of eligible white students participated in the Title I school choice option.

* Data for one district are for 2003-04.
** Data for students with disabilities are based on seven districts.

Source: National Longitudinal Study of NCLB, Analysis of Title I Choice Options in Nine Urban Districts.

- **Most participating students received supplemental services from a private provider, but school districts and public schools also served a substantial share of participants.** Private firms accounted for 86 percent of approved providers in May 2007, while school districts and public schools accounted for only 11 percent of providers. However, earlier data, from 2003-04, indicate that school districts and public schools serve a relatively high proportion of participating students (40 percent).

- **Based on a survey of supplemental service providers in 16 school districts*, services were most often provided at the student's school.** Sixty-one percent of providers in the 16 districts reported that services were always or often provided at the student's school; other locations were the local office of the provider (26 percent), libraries or community centers (19 percent), and over the internet (11 percent).

- **Services are provided both through one-on-one tutoring and through group instruction.** In the 16 districts, over half of the providers said that they often or always served students one-on-one (52 percent) or in small groups (52 percent), while 34 percent said services were often or always provided in large groups. Services were provided for an average of 57 hours per student per year in those districts, and students attended an average of 78 percent of the sessions. Maximum funding per student, as reported by districts, was $1,434 in 2004-05.

- **States reported that they were working to develop and implement systems for monitoring and evaluating the performance of supplemental service providers, but, as of early 2005, 15 states had not established any monitoring process, 25 states had not yet established any standards for evaluating provider effectiveness, and none had finalized their evaluation standards.** Seventeen states said they will evaluate the provider services against student achievement on state assessments. One of these states planned to use a matched control

* A survey of 125 supplemental services providers in 16 school districts provides additional information about the services provided in these districts. Because the district sample was not nationally representative, findings cannot be generalized to the nation.

group. The most common approaches that states have implemented to monitor providers are surveying the districts about provider effectiveness (25 states) and using providers' reports on student-level progress (18 states).

- **Although NCLB assigns states the responsibility for monitoring and evaluating providers, a survey of providers in 16 districts found that the providers reported more frequent monitoring by districts than by states.** For example, over half (51 percent) of the providers said that district staff observed supplemental service sessions at least a few times a year, compared with only 22 percent that experienced this frequency of observations by state staff.

Teacher Quality and Professional Development

The large majority of teachers across the country have been designated as "highly qualified" under NCLB. According to state-reported data for 50 states, 91 percent of classes were taught by highly qualified teachers in 2004-05. Principal and teacher reports provide somewhat lower estimates of the percentage of classes taught by highly qualified teachers. This is partly due to a sizeable percentage of teachers not knowing their "highly qualified" status. For example, 74 percent of teachers reported that they were considered highly qualified under NCLB, 23 percent said they did not know their status, and 2 percent said they were not highly qualified. Special education teachers and secondary mathematics teachers were more likely to report that they were considered not highly qualified under NCLB than were general elementary teachers and secondary English teachers.

- **Students in schools that have been identified for improvement were more likely to be taught by teachers who said they were not highly qualified than were students in non-identified schools.** For example, only one percent of elementary teachers in non-identified schools said they were considered not highly qualified, compared with 5 percent in schools that were in the first or second year of being identified for improvement, 8 percent in schools in corrective action, and 6 percent of schools in restructuring.

- **Among teachers who said they were highly qualified under NCLB, those in high-poverty schools had less experience and were more likely to be teaching out-of-field, compared with their peers in low-poverty schools.** For example, 12 percent of highly qualified teachers in high-poverty schools had fewer than three years of teaching experience, compared with 5 percent of highly qualified teachers in low-poverty schools. Similarly highly qualified secondary English and mathematics teachers in high-poverty schools were less likely to have a degree in the field that they teach (41 percent compared with 52 percent in low-poverty schools).

- **High-poverty and high minority districts were more likely than other districts to say that competition with other districts was a barrier to attracting highly qualified teachers, and were also more likely to report using financial incentives and alternative certification routes in an effort to overcome these barriers.** For example, 29 percent of high-poverty districts and 75 percent of high-minority districts reported using financial incentives, compared with 18 percent of low-poverty districts and 12 percent of low-minority districts.

- **Most teachers reported receiving some professional development in reading and math content and instructional strategies, but fewer than one-quarter of the teachers participated in such training for more than 24 hours over the 2003-04 school year and summer.** For example, 90 percent of elementary teachers participated in at least one hour of

professional development focused on instructional strategies for teaching reading, but only 20 percent participated for more than 24 hours over the 2003-04 school year and summer (see Exhibit 11).

- **Teachers in high-poverty schools were more likely to participate in professional development focused on reading and mathematics than were teachers in low-poverty schools.** For example, 53 percent of secondary English teachers in high-poverty schools reported participating in professional development focused on in-depth study of topics in reading or English compared with 36 percent of their colleagues in low-poverty schools.

Exhibit 11
Percentage of Teachers Participating in Professional Development (PD) Focused on Instructional Strategies for Reading and Mathematics, 2003-04

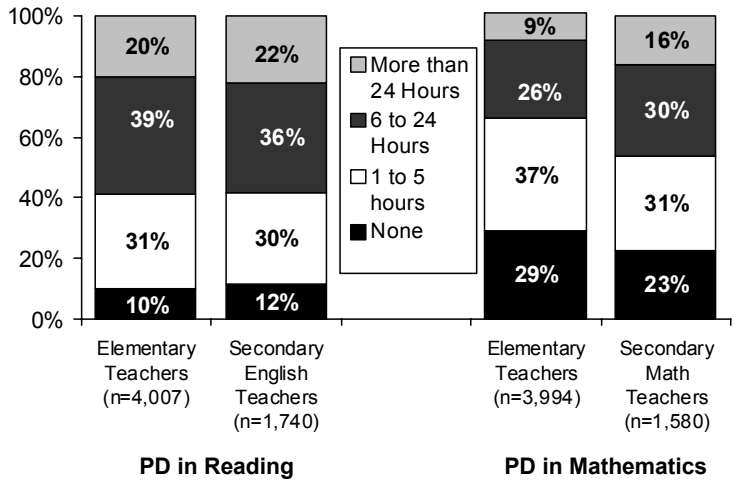


Exhibit reads: Twenty percent of elementary teachers reported that they received more than 24 hours of professional development focused on instructional strategies for teaching reading during the 2003-04 school year.

Source: National Longitudinal Study of NCLB, Teacher Survey.

III. Title I Impact Studies

A central principle of NCLB is that states, districts, schools, and teachers adopt instructional practices backed by evidence of effectiveness from scientifically based research. This principle has created a demand for rigorous evaluation evidence currently unavailable for many education programs and subject areas. For this reason, the Department's evaluation strategy for Title I features a strong emphasis on evaluation studies that are designed to produce rigorous scientific evidence on the effectiveness of specific education programs and practices that are critical to the effective use of Title I funds.

At the second meeting of the Independent Review Panel on March 17-18, 2003, presentations were made by reading and mathematics experts on what we know and need to know in these areas to raise student achievement. Ultimately, three large-scale evaluations have been undertaken. Findings from the first study, examining the effects of remedial reading programs for 3rd and 5th graders, are included in *Volume II, Closing the Reading Gap, Findings from a Randomized Trial of Four Reading Interventions for Striving Readers*. Impacts on student achievement at the end of the intervention year, as well as impacts one year after the interventions ended, can be found below in Section A. Closing the Reading Gap. Evaluations of the effectiveness of reading comprehension interventions for 5th graders and of early elementary math curricula were started during the 2006-07 school year. A full description of the two latter evaluations are described below in Section B. Future Reports. The rationales for these three large-scale evaluations of specific interventions are described briefly below in Sections A and B.

A. Closing the Reading Gap

This evaluation examines four widely used programs for elementary school students with reading problems. The programs are Corrective Reading, Failure Free Reading, Spell Read P.A.T., and Wilson Reading, all of which were hypothesized to be more intensive and delivered by better-trained teachers than the reading instruction typically provided in public schools. The programs incorporate explicit and systematic instruction in the basic reading skills in which struggling readers are frequently deficient. Corrective Reading, Spell Read P.A.T., and Wilson Reading were implemented to provide word-level instruction, whereas Failure Free Reading focused on building reading comprehension and vocabulary in addition to word-level skills. Recent reports from small-scale research and clinical studies provide some evidence that the reading skills of students with severe reading difficulties in late elementary school can be substantially improved by providing, for a sustained period of time, the kinds of skillful, systematic, and explicit instruction that these programs offer [1].

Conducted just outside Pittsburgh, Pennsylvania, in the Allegheny Intermediate Unit (AIU), the evaluation has explored the extent to which the four reading programs can affect both the word-level reading skills (phonemic decoding, fluency, accuracy) and reading comprehension of students in grades three and five who were identified as struggling readers by their teachers and by low test scores.

[1] Torgesen, J.K. "Recent discoveries from Research on Remedial Interventions for Children with Dyslexia." In M. Snowling and C. Hulme, eds., *The Science of Reading*. Oxford: Blackwell Publishers, 2005.

Ultimately, it provides educators with rigorous evidence of what could happen in terms of reading improvement if intensive, small-group reading programs like the ones in this study were introduced in many schools.

Key Evaluation Questions and Study Design

This study is a large-scale, longitudinal evaluation comprising two main elements. The first element of the evaluation is an impact study designed to address the following questions:

- What is the impact of being in any of the four remedial reading interventions, considered as a group, relative to the instruction provided by the schools? What is the impact of being in one of the remedial reading programs that focuses primarily on developing word-level skills, considered as a group, relative to the instruction provided by the schools? What is the impact of being in each of the four particular remedial reading interventions, considered individually, relative to the instruction provided by the schools?

- Do the impacts of the interventions vary across students with different baseline characteristics?

- To what extent can the instruction provided in this study close the reading gap and bring struggling readers within the normal range, relative to the instruction provided by their schools?

To answer these questions, we based the impact study on a scientifically rigorous design—an experimental design that uses random assignment at two levels: (1) 50 schools from 27 school districts were randomly assigned to one of the four interventions; and (2) within each school, eligible children in grades three and five were randomly assigned to a treatment group or to a control group. Students assigned to the intervention group (treatment group) were placed by the program providers and local coordinators into instructional groups of three students. They received supplemental reading instruction in these small groups in addition to regular reading instruction they would have usually received—unless they were pulled out of class during their regular reading instruction time. Students in the control groups received the same instruction in reading that they would have ordinarily received. Children were defined as eligible if they were identified by their teachers as struggling readers and if they scored at or below the 30th percentile on a word-level reading test and at or above the 5th percentile on a vocabulary test. From an original pool of 1,576 third and fifth grade students identified as struggling readers, 1,502 were screened, and 1,042 met the test-score criteria. Of these eligible students, 779 were given permission by their parents to participate in the evaluation, and 772 were randomly assigned—558 to the treatment group and 214 to the control group.

The second element of the evaluation is an implementation study that has two components: (1) an exploration of the similarities and differences in reading instruction offered in the four interventions; and (2) a description of the regular instruction that students in the control group received in the absence of the interventions, and of the regular instruction received by the treatment group beyond the interventions.

Test data and other information on students, parents, teachers, classrooms, and schools were collected several times over a two-year period. Key data collection points include the period just before the interventions began, when baseline information was collected, and the periods immediately after and one year after the interventions ended, when follow-up data were collected.

The Interventions

New instructional programs were not designed for this evaluation. Either parts or all of four existing and widely used remedial reading instructional programs were employed. The programs are classified as either *word level* or *word level plus comprehension*. W*ord level* interventions include methods that focus on improving word-level reading skills so that they no longer limit children's ability to comprehend text. Such methods devote the majority of their instructional time to establishing phonemic awareness, phonemic decoding skills, and word and passage reading fluency. Methods in this classification sometimes include activities to check comprehension (such as asking questions and discussing the meaning of what is read), but this instruction is incidental to the primary focus on improving word-level reading skills. The bulk of instructional and practice time in methods included within this classification is focused on building children's ability to read text accurately and fluently. The second intervention classification—referred to as *word level plus comprehension*—includes methods that more evenly balance instructional time between activities to build word-level skills and activities devoted to building vocabulary and reading comprehension strategies. These interventions include extended activities that are designed to increase comprehension and word knowledge (vocabulary), and these activities would take roughly the same amount of instructional time as the activities designed to increase word reading accuracy and fluency.

- ***Spell Read Phonological Auditory Training (P.A.T.)*** provides systematic and explicit fluency-oriented instruction in phonemic awareness and phonics, along with every-day experiences in reading and writing for meaning. The phonemic activities include a wide variety of specific tasks focused on specific skill mastery and include, for example, building syllables from single sounds, blending consonant and vowel sounds, and analyzing or breaking syllables into their individual sounds. Each lesson also includes reading and writing activities intended to help students apply their phonically based reading skills to authentic reading and writing tasks. The Spell Read intervention had originally been one of the two "word-level plus comprehension" interventions, but after the time-by-activity analysis, we determined that it was more appropriately classified as a "word-level" intervention. Because the word-level instructional content in Spell Read is more structured than the instruction designed to building reading comprehension, the relatively short instructional sessions in this study led to a different balance of word-level and comprehension instruction than was anticipated.

- ***Corrective Reading*** uses scripted lessons that are designed to improve the efficiency of instruction and to maximize opportunities for students to respond and receive feedback. The lessons involve explicit and systematic instructional sequences, including a series of quick tasks that are intended to focus students' attention on critical elements for successful word identification (phonics and phonemic analysis), as well as exercises intended to build rate and fluency through oral reading of stories that have been constructed to counter word-guessing habits. Although the Corrective Reading program does have instructional procedures that focus on comprehension, they were originally designated as a "word-level intervention," and the developer was asked not to include these elements in this study.

- ***Wilson Reading*** uses direct, multi-sensory, structured teaching based on the Orton-Gillingham methodology. The program is based on 10 principles of instruction, some of which involve teaching fluent identification of letter sounds; presenting the structure of language in a systematic, cumulative manner; presenting concepts in the context of

controlled as well as noncontrolled text; and teaching and reinforcing concepts with visual-auditory-kinesthetic-tactile methods. Similar to Corrective Reading, the Wilson Program has instructional procedures that focus on comprehension and vocabulary, but since Wilson Reading was originally designated as a "word-level" intervention, the developer was asked not to include these in this study.

- ***Failure Free Reading*** uses a combination of computer-based lessons, workbook exercises, and teacher-led instruction to teach sight vocabulary, fluency, and comprehension. The program is designed to have students spend approximately one-third of each instructional session working within each of these formats, so that they are not taught simultaneously as a group. Unlike the other three interventions in this study, Failure Free does not emphasize phonemic decoding strategies. Rather, the intervention depends upon building the student's vocabulary of "sight words" through a program involving multiple exposures and text that is engineered to support learning of new words. Students read material that is designed to be of interest to their age level while also challenging their current independent and instructional reading level. Lessons are based on story text that is controlled for syntax and semantic content.

The interventions provided instruction to students in the treatment group from November 2003 through May 2004. During this time students received, on average, about 90 hours of instruction, which was delivered five days a week to groups of three students in sessions that were approximately 55 minutes long. Instruction was provided by teachers who were recruited from participating schools on the basis of experience and characteristics and skills relevant to teaching struggling readers. They received, on average, nearly 70 hours of training and professional development support during the intervention year. According to an examination of videotaped teaching sessions, instruction was judged to be faithful to each intervention model. The program providers themselves also rated the teachers as generally above average in both their teaching skill and fidelity to program requirements.

Measures of Reading Ability

Seven measures of reading skill were administered several times for the evaluation to assess student progress in learning to read. These measures assessed phonemic decoding, word reading accuracy, text reading fluency, and reading comprehension.

Phonemic Decoding

- Word Attack (WA) subtest from the Woodcock Reading Mastery Test-Revised (WRMT-R)
- Phonemic Decoding Efficiency (PDE) subtest from the Test of Word Reading Efficiency (TOWRE)

Word Reading Accuracy and Fluency

- Word Identification (WI) subtest from the WRMT-R
- Sight Word Efficiency (SWE) subtest from the TOWRE
- Oral Reading Fluency subtest from Edformation, Inc. This report refers to the reading passages as "AIMSweb" passages, which is the term used broadly in the reading practice community.

Reading Comprehension

- Passage Comprehension (PC) subtest from the WRMT-R

- Passage Comprehension from the Group Reading Assessment and Diagnostic Evaluation (GRADE)

The scores analyzed in this report are from the tests near the end of the 2004-2005 school year, one year after the interventions ended. Results from analyzing the scores on these tests from one year earlier—the end of the intervention year are presented in the National Assessment of Title I Interim Report.[2] In addition to analyzing data from seven reading tests administered by the study, Pennsylvania System of School Assessment (PSSA)reading and mathematics scores for each student were analyzed and included in the results. Students in the evaluation sample took these standards-based PSSA tests from late March to early April of the 2003-2004 school year, the year during which the interventions took place.

Key Findings

These key findings are drawn from *Volume II: Closing the Reading Gap, Findings from a Randomized Trial of Four Reading Interventions for Striving Readers.*[3] All findings reported were statistically significant at the 0.05 level.

Characteristics of Students in the Evaluation

The characteristics of the students in the evaluation sample are shown in Exhibit 12.

- About 45 percent of the students qualified for free or reduced-price lunches. In addition, about 28 percent were African American, and 72 percent were white. Fewer than two percent were Hispanic. Roughly 32 percent of the students had a learning disability or other disability.

- On average, students in the evaluation sample scored about one-half to one standard deviation below national norms (mean 100 and standard deviation 15) on measures used to assess their ability to decode words.

- This sample, as a whole, was substantially less impaired in basic reading skills than most other samples assessed in previous research with older reading disabled students (Torgesen 2005).

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[2] Torgesen, Joseph, David Myers, Allen Schirm, Elizabeth Stuart, Sonya Vartivarian, Wendy Mansfield, Fran Stancavage, Donna Durno, Roseanne Javorsky, andCinthis Haan. National Assessment of Title I Interim Report to Congress: Volume II: Closing the Reading Gap, First Year Findings from a Randomized Trial of Four Reading Interventions for Striving Readers, 2006.

[3] Torgesen, Joseph, Florida Center for Reading Research; Allen Schirm, Laura Castner, Sonya Vartivarian, Wendy Mansfield, Mathematic Policy Research; David Myers and Fran Stancavage, American Institutes for Research; Donna Durno and Rosanne Javorsky, Allegheny Intermediate Unit; and Cinthia Haan, Haan Foundation. Report on the *National Assessment of Title I, Volume II, Closing the Reading Gap: Findings from a Randomized Trial of Four Reading Interventions for Striving Readers,* Washington, D.C.: U.S. Department of Education, Institute of Education Sciences, 2007.

Exhibit 12

Baseline Characteristics of the Analysis Sample
3rd Grade and 5th Grade

	Grade Level					
Baseline Means	Combined		3rd		5th	
Student Characteristics						
Age	9.7		8.7		10.7	
Male (%)	54		52		56	
Hispanic (%)	2		2		1	
Race--White (%)	72		70		74	
Race--African American (%)	28		30		26	
Race--Other (%)	a		a		a	
Family income less than $30,000 (%)	49		48		49	
Family income between $30,000 and $60,000 (%)	35		34		36	
Family income over $60,000 (%)	16		18		15	
Eligible for Free or Reduced Price Lunch (%)	45		45		46	
Has any learning or other disability (%)	32		34		30	
Mother has bachelor's degree or higher (%)	13		13		13	
Reading Tests	Standard Score	Percentile	Standard Score	Percentile	Standard Score	Percentile
Screening Tests						
TOWRE Sight Word Efficiency	84.3	15	84.4	15	84.1	15
TOWRE Phonemic Decoding Efficiency	83.0	13	85.6	17	80.6	10
Peabody Picture Vocabulary Test--Revised	94.7	36	94.4	35	95.0	37
Baseline Tests						
WRM Word Identification	88.7	23	88.7	22	88.7	23
TOWRE Phonemic Decoding Efficiency	83.2	13	85.5	17	81.0	10
WRM Word Attack	92.8	32	92.4	31	93.2	33
TOWRE Sight Word Efficiency	85.3	16	86.6	19	84.2	15
AIMSWeb (Raw score)	NA	NA	40.9	NA	77.0	NA
WRM Passage Comprehension	92.1	30	91.6	29	92.6	31
GRADE	88.8	23	86.1	18	91.2	28
Woodcock Johnson Spelling	89.8	25	88.5	22	90.9	27
Woodcock Johnson Calculation	94.8	36	95.4	38	94.2	35
Sample Size	729		329		400	

Note: Weights used to account for differential randomization probabilities and nonresponse.

Note: All standard scores have mean 100 and standard deviation 15, except for CTOPP and Clinical Evaluation of Language Fundamentals-IV, which have mean 10 and standard deviation 3. Standard scores unavailable for the Aimsweb test.

Note: The percentile score shown for each test is the percentile corresponding with the mean standard score.

a Values suppressed to protect student confidentiality.

Impact Findings

In the first report from the evaluation (Torgesen et al. 2006), impacts on reading test scores were presented for the end of the intervention year, when the students in the evaluation were third and fifth graders. That report presented findings on student outcomes at the end of the intervention year. The second (and last) report (Torgesen et al. 2007) from the evaluation, presents estimates of impacts on reading test scores as of the end of the following year, when most of the students were fourth- and sixth-graders. Student outcomes are referred to as their "grade cohorts," that is the students' grade level when they entered the evaluation.

For purposes of this summary, the focus is on the impact of being randomly assigned to receive any intervention compared to receiving the instruction that would normally be provided. These findings are the most robust because of the larger sample sizes. The full report also estimates impacts for each of the interventions and various student subgroups. Key findings are as follows:

- **The interventions improved some reading skills.** For the third-grade cohort, the four interventions combined had positive impacts on phonemic decoding, word reading accuracy and fluency, and reading comprehension, although impacts were not detected for all measures of accuracy and fluency or comprehension (see Exhibit 13). For the fifth-grade cohort, the four interventions combined improved phonemic decoding on one measure, but led to a small reduction in oral reading fluency. The three word-level interventions combined had similar impacts to those for all four interventions combined, although they did not have an impact on either measure of comprehension for students in the third grade cohort. There were impacts on both measures of phonemic decoding for students in the fifth-grade cohort. For students in the third-grade cohort, Failure Free Reading (the only word level plus comprehension program) had an impact on one measure of phonemic decoding, two of the three measures of word reading accuracy and fluency, and one measure of comprehension. However, this intervention did not have any impacts for students in the fifth-grade cohort.

- **The interventions did not improve PSSA scores.** For the third-grade cohort, we did not detect significant impacts of the four interventions combined on reading and mathematics test scores from the Pennsylvania System of School Assessment (see Exhibit 14). For the fifth-grade cohort, the four interventions combined lowered the reading and mathematics scores.

- **Younger students benefited more.** The interventions generally helped students in the third-grade cohort more than students in the fifth-grade cohort (see Exhibits 13 and 14). However, the interventions did not consistently benefit any one subgroup within each grade level more than another subgroup.

- **The interventions narrowed some reading gaps.** The "reading gap" describes the extent to which the average 3rd or 5th grade student in the intervention group or in the control group is lagging behind the average 3rd or 5th grade student in the population. The four interventions combined generally narrowed the reading gap for students in the intervention groups compared with students in the control group for the third-grade cohort. Being in one of the interventions reduced the reading gap in Word Attack skills by about two-thirds for students in the third-grade cohort. On other word-level tests and a measure of reading comprehension, the interventions reduced the gap for students in the third-grade cohort by about one-sixth to one-third. For students in the fifth grade cohort, the interventions reduced the gap in Word Attack skills by one-half (see Exhibit 15).

The key findings presented in this report for the seven tests administered for this study one year after the interventions ended are similar to the findings from the end of the intervention year. In the earlier report (Torgesen et al. 2006) the four interventions combined and the three word-level interventions had impacts for student in the third-grade cohort on phonemic decoding, word reading accuracy and fluency, and reading comprehension. There were fewer significant impacts for students in the fifth-grade cohort than for students in the third-grade cohort.

Exhibit 13

Impacts on Reading Test Scores for 3rd and 5th Grade Cohorts
One Year After the Intervention Year

		All Interventions		Word-level Interventions		Failure Free Reading		Spell Read		Wilson Reading		Corrective Reading	
Grade 3 Cohort	Baseline	Control Gain	ABCD Impact	Control Gain	BCD Impact	Control Gain	A Impact	Control Gain	B Impact	Control Gain	C Impact	Control Gain	D Impact
Word Attack	92.4	-0.3	5.3 *	0.3	5.5 *	-2.2	4.9 *	-0.3	5.4 *	0.5	5.8 *	0.7	5.2 *
TOWRE PDE	85.5	1.1	4.0 *	1.0	4.9 *	1.3	1.3	3.4	4.9 *	1.8	4.1 *	-2.3	5.5 *
Word Identification	88.7	-0.1	2.3 *	0.0	2.5 *	-0.4	1.8	1.8	0.7	-2.2	4.1 *	0.6	2.6 *
TOWRE SWE	86.6	3.5	1.7 *	3.7	1.6 *	2.7	2.0 *	4.0	0.9	2.8	2.6 *	4.3	1.4
AIMSweb	40.9	33.7	5.3	33.4	4.5	34.4	7.9 *	30.1	6.0 *	31.9	3.6	38.3	3.9
Passage Comprehension	91.6	-0.3	2.1 *	0.3	1.3	-2.1	4.4 *	1.2	0.1	-2.5	3.5	2.3	0.3
GRADE	86.1	-7.5	1.0	-6.9	0.4	-9.3	2.8	-10.0	2.1	-10.4	0.1	-0.1	-1.1
Sample Size	329		329		240		89		91		70		79

		All Interventions		Word-level Interventions		Failure Free Reading		Spell Read		Wilson Reading		Corrective Reading	
Grade 5 Cohort	Baseline	Control Gain	ABCD Impact	Control Gain	BCD Impact	Control Gain	A Impact	Control Gain	B Impact	Control Gain	C Impact	Control Gain	D Impact
Word Attack	93.2	1.5	2.7 * #	1.8	3.8 *	0.4	-0.8 #	0.0	3.5	2.3	7.8 *	3.1	0.2 #
TOWRE PDE	81.0	5.3	1.7	5.2	2.4 *	5.4	-0.3	4.9	3.2	4.2	2.6	6.6	1.4
Word Identification	88.7	3.0	-0.6 #	3.4	-0.6 #	1.7	-0.6 #	1.5	0.1	4.3	0.0 #	4.3	-1.9 #
TOWRE SWE	84.2	3.0	1.4	3.1	1.4	3.0	1.5	1.5	3.4 *	2.7	1.1	5.0	-0.4
AIMSweb	77.0	30.9	-3.9 * #	30.7	-3.9 * #	31.6	-4.1 #	26.5	-3.3 #	29.7	-3.0	35.9	-5.3
Passage Comprehension	92.6	-0.4	-1.1 #	-0.8	-0.7	0.8	-2.5 #	-2.8	-0.9	-1.6	0.9	1.9	-2.1
GRADE	91.2	-3.5	0.7	-4.7	1.2	0.2	-0.9	-4.8	-1.1	-8.9	4.7	-0.4	0.0
Sample Size	400		400		272		128		100		88		84

Note: The Failure Free, Spell Read, Wilson Reading, and Corrective Reading interventions are labeled A, B, C, and D, respectively. These labels are arbitrary and not related to performance. ABCD is the label for the four interventions combined and BCD is the label for the three word-level intervention combined.

Note: Raw scores were analyzed for the AIMSweb, and standard scores were analyzed for all other tests.

Note: According to the first row of estimates, students in the third-grade cohort achieved an average standardized Word Attack score of 92.4 at "baseline," that is, shortly after the beginning of third grade—the intervention year. For the Failure Free Reading intervention, the average standardized Word Attack score one year after the intervention year fell by 2.2 points from the baseline score for the students in the control group (the "control gain"). Also one year after the intervention year, the average score for the students in the treatment group for the Failure Free Reading intervention was 4.9 points higher than for the students in the control group (the "impact"), a difference that is statistically significant, as indicated by the asterisk. According to the columns for "All Interventions," the average score for the control group was 0.3 points lower than the baseline score, and the average score for the treatment group was 5.3 points higher than the average for the control group, a statistically significant difference.

* Impact is statistically significant at the 0.05 level.
# Impact is statistically different from the 3rd grade cohort impact at the 0.05 level.

Exhibit 14

Impacts on PSSA Reading and Math Scores for 3rd and 5th Grade Cohorts
Late March/Early April of the Intervention Year

Grade 3 Cohort	All Interventions ABCD Impact	Word-level Interventions BCD Impact	Failure Free Reading A Impact	Spell Read B Impact	Wilson Reading C Impact	Corrective Reading D Impact
PSSA Reading	-15.6	-3.8	-51.1 *	-39.9	52.5	-23.8
PSSA Math	20.2	14.2	38.4	-15.5	56.6 *	1.4
Sample Size	329	240	89	92	71	77

Grade 5 Cohort	All Interventions ABCD Impact	Word-level Interventions BCD Impact	Failure Free Reading A Impact	Spell Read B Impact	Wilson Reading C Impact	Corrective Reading D Impact
PSSA Reading	-27.3 *	-25.3	-33.4 *	-30.0	-23.8	-22.1
PSSA Math	-28.8 * #	-34.0 * #	-13.4	-20.1	-56.4 * #	-25.4 *
Sample Size	408	280	128	102	92	86

Note: The Failure Free, Spell Read, Wilson Reading, and Corrective Reading interventions are labeled A, B, C, and D, respectively. These labels are arbitrary and not related to performance. ABCD is the label for the four interventions combined and BCD is the label for the three word-level intervention combined.

Note: According to the first row of estimates, students in the third-grade cohort assigned to the Failure Free Reading intervention achieved a standardized score on the PSSA Reading test that was 51.1 points lower than the average score achieved by the students in the control group, a statistically significant difference, as indicated by the asterisk. The average standardized score for students participating in any intervention was 15.6 points lower than the average score for students assigned to a control group, a difference that is not statistically significant.

* Impact is statistically significant at the 0.05 level.
# Impact is statistically different form the 3rd grade impact at the 0.05 level.

Exhibit 15

Relative Gap Reduction (RGR): All Interventions Combined
One Year After the Intervention Year

Grade 3 Cohort	Average at Baseline	Gap at baseline (Std. Units)	Average at follow-up		Gap at follow-up (Std. Units)		Impact	RGR
			Intervention Group	Control Group	Intervention Group	Control Group		
Word Attack	92.4	0.50	97.4	92.1	0.17	0.53	5.3 *	0.68
TOWRE PDE	85.5	0.97	90.5	86.6	0.63	0.90	4.0 *	0.29
Word Identification	88.7	0.76	90.9	88.6	0.61	0.76	2.3 *	0.20
TOWRE SWE	86.6	0.90	91.7	90.0	0.55	0.67	1.7 *	0.17
AIMSweb	NA	NA	NA	NA	NA	NA	NA	NA
Passage Comprehension	91.6	0.56	93.4	91.3	0.44	0.58	2.1 *	0.24
GRADE	86.1	0.93	79.6	78.6	1.36	1.42	1.0	0.05

Grade 5 Cohort	Average at Baseline	Gap at baseline (Std. Units)	Average at follow-up		Gap at follow-up (Std. Units)		Impact	RGR
			Intervention Group	Control Group	Intervention Group	Control Group		
Word Attack	93.2	0.45	97.3	94.7	0.18	0.36	2.7 *	0.50
TOWRE PDE	81.0	1.27	88.0	86.3	0.80	0.91	1.7	0.13
Word Identification	88.7	0.75	91.1	91.7	0.60	0.56	-0.6	-0.07
TOWRE SWE	84.2	1.05	88.6	87.2	0.76	0.85	1.4	0.11
AIMSweb	NA	NA	NA	NA	NA	NA	NA	NA
Passage Comprehension	92.6	0.49	91.0	92.2	0.60	0.52	-1.1	-0.15
GRADE	91.2	0.59	88.4	87.7	0.77	0.82	0.7	0.06

Note: RGR is defined as RGR=(Impact/100-Average for Control Group at follow-up).

Note: Gap is defined as (100-Average Score)/15, where 100 is the population average and 15 is the population standard deviation.

Note: Values for AIMSweb are not available because normed standard scores are unavailable.

Note: According to the first row of estimates, students in the third-grade cohort achieved an average standardized score of 92.4 on the Word Attack test at "baseline," that is, shortly after the beginning of third grade—the intervention year. One year after the intervention year, that is, at "follow-up," the students participating in any intervention achieved an average standardized score of 97.4, and the students in the control group achieved an average standardized score of 92.1, implying a statistically significant impact of 5.3 points. The "gap at baseline," measured as the difference between the population average (100) and the study sample average (92.4) divided by the population standard deviation (15), was 0.5. One year after the intervention year, the gap was reduced 68 percent (see the "RGR"), when the reduction is measured as the impact (5.3) divided by the difference between the population average (100) and the control group average (92.1). The calculations described in this note might produce results that are slightly different from the estimates in the table due to rounding.

* Impact is statistically significant at the 0.05 level.

B. Future Reports

Reading Comprehension Interventions

The decision to conduct an evaluation of the efficacy of reading comprehension interventions for informational materials in content areas such as social studies or science resulted from a series of discussions between the IRP and reading experts, as well as from the advice of a separate expert panel convened to identify important and policy-relevant evaluation questions to study in reading. The expert panel's advice was that there are increasing cognitive demands on student knowledge in middle elementary grades where students become primarily engaged in reading to learn, rather than learning to read. Children from disadvantaged backgrounds lack general vocabulary as well as vocabulary related to academic concepts that enable them to comprehend what they are reading and acquire content knowledge. They also do not know how to use strategies to organize and acquire knowledge from informational text in content areas such as science and social studies.* The panel advised that strategies for improving comprehension are not as well developed as those for decoding and fluency. While there are multiple techniques for direct instruction of comprehension in narrative text that have been well-demonstrated in small studies, there is not as much evidence on teaching reading comprehension within content areas.

This evaluation of reading comprehension is addressing the following questions:

- Can promising reading comprehension interventions improve student reading achievement of informational text?

- What are the most effective reading comprehension interventions for improving student reading achievement of informational text?

- Under what conditions and practices do reading comprehension interventions improve student reading achievement of informational text?

Five interventions were competitively selected by an expert panel and were piloted in three 5th grade classrooms each during the 2005-06 school year. Selection of the interventions was based on existing research evidence, quality of the intervention approach, capability to implement the intervention, and appropriateness of the intervention for the target population. All of the selected interventions supplement the core reading curriculum in teaching reading comprehension of text containing information such as science or social studies content. At the end of the 2005-06 school year, four interventions were selected to participate in the full-scale evaluation beginning in the 2006-07 school year. Those interventions and their publishers are:

- ***CRISS*** (Project CRISS): CRISS teaches a wide array of comprehension and note-taking strategies using science text. Students then apply the strategies to the actual texts used in their classrooms. The program teaches students the difference between reading a text for basic information, reading for understanding a physical or natural phenomenon, and how to create succinct summaries. It also stresses active reading strategies such as asking oneself questions

* National Institute of Child Health and Human Development (2000). *Report of the National Reading Panel, Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction* (NIH Publication No. 00-4769). Washington, DC: US Government Printing Office.

while reading and then jotting down the answers. The program is designed to be used for 30 minutes each day in the beginning of the year and then to be incorporated into all content areas. Teachers participate in three days of initial training and one day of follow-up training.

- ***ReadAbout*** (Scholastic): Students are taught reading comprehension skills such as author's purpose, main idea, cause and effect, compare and contrast, summarizing, and inferences primarily through a computer program. The program is designed to be used for 30 minutes per day, and students apply what they have learned during this time to a selection of science and social studies trade books. Teachers receive two days of initial training plus two additional days during the school year.

- ***Read for Real*** (Chapman University; Zaner-Bloser): In Read for Real, teachers use a six-volume set of books to teach reading strategies appropriate for before, during and after reading such as previewing, activating prior knowledge, setting a purpose, main idea, graphic organizers, and text structures. Students use the materials for 30 to 45 minutes per day. Each of these units includes vocabulary, fluency, and writing activities. Teachers participate in three days of initial training and two, one-day follow-up training sessions.

- ***Reading for Knowledge*** (Success for All Foundation): Reading for Knowledge, a 30-minute daily program, makes extensive use of cooperative learning strategies and a process called SQRRRL (Survey, Question, Read, Restate, Review, Learn). Teachers receive two days of initial training in addition to monthly follow up sessions.

Eighty-nine schools within nine districts were randomly assigned to one of the four reading comprehension interventions or to a control group prior to the 2006-07 school year. Each intervention is being implemented in all 5th grade classrooms in each school. The impact of the interventions on a standardized reading comprehension assessment as well as informational texts in science and social studies will be estimated. The first report on the effectiveness of the reading comprehension interventions is expected in Spring 2008.

Mathematics Curricula

The decision to conduct an evaluation of the effectiveness of mathematics curricula resulted from a series of discussions with and recommendations from the IRP, the Office of Elementary and Secondary Education, and an expert panel convened to provide advice on policy-relevant questions that would be important to address in an impact evaluation focused on mathematics. Information on the effectiveness of mathematics curricula is crucial to improving performance on state mathematics assessments under NCLB. There is considerable controversy about what mathematics children should learn and how it should be taught, but there is very little reliable information available to educators and policy makers about which curricula are most likely to improve mathematics achievement.[*]

This evaluation is focusing on early elementary grades because disadvantaged children are behind their more advantaged peers in basic mathematics competencies even before entering elementary school. If basic concepts are not mastered in early elementary grades, students have great difficulty understanding more advanced mathematics concepts in upper elementary grades. The evaluation will compare different

[*] The National Academy of Sciences (2004). *On Evaluating Curricular Effectiveness: Judging the Quality of K-12 Mathematics Evaluations*. Washington, DC: The National Academies Press.

approaches to teaching early elementary mathematics since there are many mathematics curricula that are being widely implemented without evidence of their effectiveness.

The major evaluation questions are:

- What is the relative effectiveness of different math curricula on student achievement for early elementary school students in disadvantaged schools?

- Which math curricula result in sustained impact on student math achievement?

These questions are being addressed through an experimental methodology in which schools are randomly assigned to selected math curricula. The study design calls for recruitment of 10-15 school districts with a total of 100 schools across all sampled districts. Within each sampled district, each sampled school has been randomly assigned to one of the four curricula. Since all schools have a core mathematics curriculum, including the curricula being tested in the study, there will not be a no-treatment control group. For some of the schools, the intervention curriculum is their regular curriculum. The difference in math achievement among the schools using each math curricula will be the measure of the relative effectiveness of each math curriculum on student achievement.

- What is the relationship between teacher knowledge of math content and pedagogy and the effectiveness of math curricula?

Teacher knowledge of mathematics content and pedagogy is being assessed prior to training on the curriculum that their school is implementing allowing for a subgroup analysis of the impact of the curricula on student achievement taught by teachers with varying expertise. It is hypothesized that some math curricula may require higher levels of teacher knowledge than others for successful implementation. The teacher assessment being used is "Learning Mathematics for Teaching" developed by the Consortium for Policy Research in Education for the Study of Instructional Improvement.

- Under what conditions is each math curriculum most effective?

This question will be addressed by correlational analyses. Fidelity of implementation of each curriculum will be measured, as well as characteristics of students, teachers, schools, and districts. These measures will be correlated with the relative impacts of the math curricula on student achievement.

Four commercially-available mathematics curricula were competitively selected by an expert panel to represent a variety of approaches to teaching mathematics. Selection of the interventions was based on existing evaluation evidence, extent of use of curricula in schools, capability to implement the intervention, and appropriateness of the intervention for the target population. These curricula represent varying approaches to mathematics instruction and include widely used curricula. The curricula are:

- ***Investigations in Number, Data, and Space*** (Pearson Scott Foresman) is a child-centered approach to teaching mathematics through activities, discussions, and problem solving. Students are involved in meaningful mathematical problems, and teachers engage in ongoing learning about mathematics content and how children learn mathematics.

- ***Math Expressions*** (Houghton Mifflin) combines conceptual understanding with opportunities to develop fluency with problem solving and computation. Both reform and traditional mathematics approaches are incorporated along with new teaching strategies.

- ***Saxon Math*** (Harcourt Achieve) provides a multi-sensory approach designed to enable all children to develop a solid foundation in the language and basic concepts of mathematics. This is accomplished through hands-on activities that actively engage students. Concepts are reviewed and practiced over time leading to mastery and fluency.

- ***Scott Foresman-Addison Wesley Mathematics*** (Pearson Scott Foresman) provides explicit instruction of essential mathematics skills and concepts, using concrete manipulatives and pictorial and abstract representations. Ongoing assessment and diagnosis are coupled with strategic intervention to meet the needs of individual students.

The evaluation began in the 2006-07 school year with curricula being implemented in the first grade. The curricula will be implemented in the first and second grades during the 2007-08 school year and extended to the third grade in the 2008-09 school year.

Four school districts with forty schools have agreed to implement the curricula in all first grade classrooms during the 2006-07 school year. Data will be collected on student mathematics achievement at the beginning and end of the 2006-07 school year and on implementation of each curriculum in the spring of 2007. The student mathematics assessment developed for the Early Childhood Longitudinal Study will be used in this study. This assessment is individually-administered and computer adaptive.

Additional districts with approximately 60 schools are being recruited to begin participation in the study in the 2007-08 school year. The additional schools will implement the curricula in their first and second grades. The original 40 schools will continue implementation of the curricula in their first grade classrooms as well as in their second grade classrooms. Data will be collected on the implementation of each curriculum and student mathematics achievement for first- and second-graders during the 2007-08 school year. The first report on the relative effectiveness of the mathematics curricula is planned for Spring 2009.

Appendix A
National Assessment of Title I
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