When Schools Stay Open Late: The National Evaluation of the 21st-Century Community Learning Centers Program

First Year Findings

2003

U.S. DEPARTMENT OF EDUCATION OFFICE OF THE UNDER SECRETARY

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January 2003

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When Schools Stay Open Late:
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Summary of First-Year Findings

In an era when most parents work, many Americans want their children to have access to safe and supervised after-school activities that can help develop academic, personal, and social skills. In 1994, Congress authorized the 21st-Century Community Learning Centers (21st-Century) program to open up schools for broader use by their communities. In 1998, the program was refocused on supporting schools to provide school-based academic and recreational activities after school and during other times when schools were not in regular session, such as on weekends, holidays, and during summers. As an after-school program, 21st-Century grew quickly from an appropriation of $40 million in fiscal year 1998 to $1 billion in fiscal year 2002. It now supports after-school programs in about 7,500 rural and inner-city public schools in more than 1,400 communities. Programs operate in public school buildings and offer academic, recreational, and cultural activities during after-school hours. A distinguishing characteristic of 21st-Century programs is the inclusion of academic activities. Grants made after April 1998 included a requirement that programs include academic activities.

This study, conducted for the U.S. Department of Education with support for additional data collection and analysis from the Charles Stewart Mott Foundation, presents the first-year findings of the largest and most rigorous examination to date of school-based after-school programs.[1] The study was designed to examine the characteristics and outcomes of typical programs and did not attempt to define or identify the characteristics of the best programs. Programs selected to be in the study operated in elementary and middle schools. Some were in their second year of funding when the study began collecting data and others were in their third year of funding. Most grantees that were part of the study had operated some type of after-school program before receiving a 21st-Century grant and were using their grant funds to expand or modify their services and activities. About 65 percent of middle school grantees and about 57 percent of elementary school grantees in the study had operated after-school programs in one or more schools that were part of the 21st-Century grant.

The study currently is collecting another year of follow-up data and has expanded to include more programs serving elementary school students. The additional data from the second follow-up year and from the newly included programs will be the basis for two future reports. The first will update the findings for middle school students using another year of follow-up data and will present first year findings for elementary school students using a larger number of elementary school programs. The second will update the findings for elementary school students using another year of follow-up data.

[1]This study focuses on school-based programs that are part of the 21st-Century program. Results do not extrapolate to all after-school programs in general.

Key Impact Findings

The first-year findings reveal that while 21st-Century after-school centers changed where and with whom students spent some of their after-school time and increased parental involvement, they had limited influence on academic performance, no influence on feelings of safety or on the number of "latchkey" children and some negative influences on behavior.[2] In brief, the key findings are:

- ***Limited Academic Impact.*** At the elementary school level, reading test scores and grades in most subjects were not higher for program participants than for similar students not attending the program. In addition, on average, programs had no impact on whether students completed their homework or completed assignments to their teacher's satisfaction.

  For middle school students, grades in most subjects were not different than for similar students not attending the 21st-Century program. Grades for math were higher for 21st-Century participants, but the overall difference was small. A subgroup analysis found larger grade point improvements for black and Hispanic middle school students and their teachers also reported less absenteeism and tardiness compared with nonparticipants. Teachers for middle school students were more likely to say assignments were completed to their satisfaction, although program participants were not more likely to do or complete the homework assigned. Another subgroup analysis found that students who attended programs more frequently, both at the middle school and elementary school levels, did not have higher academic outcomes compared with students that attended less frequently. Other analyses did not find statistically significant relationships between program characteristics, including program maturity, and academic impacts.

- ***Adult Care Increased but Self-Care Unaffected.*** The findings indicate that programs reduced the proportion of students being cared for by parents and by older siblings, and increased the proportion of students being cared for by non-parent adults. The net effect was to increase the proportion of students being cared for by an adult (either a parent or a non-parent adult), by reducing the proportion being cared for by an older sibling.

  Programs did not reduce the percentage of students in self-care (who are commonly referred to as "latchkey" children). Students were defined to be in self-care if they (or their parents, for elementary school students in grades K-2) indicated that they were not in the presence of adults or older siblings after school (they were by themselves, with others their age, or with younger siblings after school). Other definitions of self-care, such as whether students ever said they were by themselves after school, were analyzed with similar results. The most common care arrangement for nonparticipants was for students to go home after school and be cared for by a parent, which was true for about 53 percent of middle school students in the comparison group and 67 percent of elementary school students in the control group.

[2] A "center" refers to after-school services operated in one school, and a "program" refers to one or more centers operated in one school district. The study measured impacts at the program level but not at the center level.

- ***No Improvements in Safety and Behavior.*** Programs did not increase students' feeling of safety after school. At the middle school level, participants were more likely to report that they had sold drugs "some" or "a lot" and somewhat more likely to report that they smoked marijuana "some" or "a lot" (although the incidence was low). Participants also were more likely to have had their property damaged. (Data on these items were not collected for elementary school students.) No impacts were found on other measures of behavior.

- ***Increased Parental Involvement.*** At the middle school level, programs were associated with increased parent involvement at their child's school. Parents of program participants were more likely to volunteer at their child's school and attend open houses or parent-teacher organization meetings. Parents of elementary school level program participants were more likely to help their child with homework or ask about things they were doing in class.

- ***Negligible Impact on Developmental Outcomes.*** Programs had no impacts on developmental outcomes, such as whether students felt they were better able to plan, set goals, or work with a team. At the middle school level, program participants were less likely to rate themselves as "good" or "excellent" at working out conflicts with others.

Key Implementation Findings

The first-year findings indicate that grantees generally had succeeded in implementing their planned programs and in gaining support from and creating working relationships with school principals and teachers. Most programs provided academic, enrichment, and recreation activities, with homework help being the most common academic activity. The mix across the three activity areas varied according to locally determined needs and preferences. A few programs focused only on providing academic activities, but none focused only on providing recreational activities. The federal grant and other funding sources enabled programs to spend about $1,000 for each student enrolled during the school year, equivalent to about a 16 percent increase in education spending. Other implementation findings include:

- ***Low Levels of Student Participation.*** Attendance in the programs was low, averaging less than two days a week, despite the fact that programs typically were available to participants four to five days a week.

- ***Programs Staffed Predominantly by School-Day Teachers.*** A third of the program coordinators and three out of five program staff members were school-day teachers. To accommodate the varying schedules and requirements of teachers, staff members often worked only a few days a week and for short periods.

- ***Limited Efforts to Form Partnerships and Plan for Sustainability.*** Programs did not collaborate much with other community organizations. In general, centers contracted with community agencies to provide specific after-school sessions rather than as partners with shared governance or combined operations. Programs also were slow to begin planning to sustain themselves after the 21st-Century grant ends. Even among those grantees within months of their grant's end, sustainability planning was almost nonexistent.

Overall, the findings suggest that policymakers and program developers need to consider ways to address low student participation and low academic content. Considering program structures that would facilitate more frequent attendance, such as focusing on serving students having difficulty in reading or math and asking them to participate a minimum number of days each week, may be worth considering. Efforts to increase the academic content and quality of activities also may be fruitful. Especially for middle school students, the challenge will be how to both attract students and help students improve their academic performance.

Methodology

While research has evaluated other after-school programs, this study—conducted by Mathematica Policy Research, Inc. (MPR) and its partner, Decision Information Resources, Inc.—is one of the few that is consistent with the principles of scientifically based research set out in the recent No Child Left Behind Act. The study is unique in the large number of after-school programs that were included and in its application of rigorous techniques for measuring impacts.

The evaluation's design includes a middle school study and an elementary school study. The middle school study is based on a nationally representative sample of after-school programs and participants and a matched comparison group of students which is similar to the program participant group. Similar students were identified in host schools or in other schools in the participating districts. Thirty-four school districts and 62 centers in the districts are included in the study.

The elementary school study uses random assignment of students to treatment and control groups. The study involved 14 school districts and 34 centers. Results presented here are from seven school districts selected in the first year of the study; another seven school districts were added in the second year of the study and data currently are being collected in these districts. The elementary school programs that were part of the study appear to be typical of elementary school 21st-Century programs along most dimensions (although they tended to be more urban and served a larger percentage of minority students than the average elementary program). However, caution should be exercised in applying the findings to all elementary school programs. Programs in the study had more applicants for their slots than they could serve, which facilitated the use of an experimental design, but the programs were not statistically sampled.

The findings presented in this report are based on one year of data collected in school year 2000-2001 from students, parents, teachers, principals, program staff members, and school records. Evaluators collected baseline and follow-up data for 4,400 middle school students and 1,000 elementary school students, and conducted site visits, lasting between two and four days, to all grantees at least once. MPR is continuing to study the programs and will prepare two additional reports based on another year of follow-up data and another round of visits to each program.

General Information about 21st-Century Programs

Annual performance reports submitted by grantees to the U.S. Department of Education indicate general characteristics and context of 21st-Century programs. The reports also are

informative about centers in the study. Nationwide, the average grantee ran three or four centers that together reported enrollment of almost 700 students over the course of the school year. Attendance varied by day, with some students attending regularly and others more occasionally, and with students enrolling and exiting from the program at different points during the year. Fifty-seven percent were minority students, compared with 37 percent of students nationwide. Most centers (95 percent) were located in elementary or middle schools or located in schools that included some combination of K-8. Typically, centers were open 10 or more hours a week, after school, and a third were open 20 hours or more a week. Some were open on Saturdays, and many offered summer programs. Sixty-six percent of host schools were considered high-poverty (at least half their students were eligible for free or reduced-price lunches). Nationally, 17 percent of schools are high-poverty. Center budgets averaged about $196,000 a center, or about $1,000 per enrolled student, with the 21st-Century grant accounting for about 70 percent of budgets. Programs typically were free both for students and parents.

The rest of this summary looks at findings for middle school programs, then at findings for elementary school programs. These findings are based on the various samples that were drawn by this study. We present the findings for middle and elementary schools separately because of differences in how the programs were selected for the evaluation and how impacts were measured.

Findings for Middle School Programs

Middle school centers in the study usually offered the following activities:

- ***Academic help,*** primarily supervised daily homework sessions. Nearly 9 of 10 middle school centers (89 percent) provided homework help. Slightly more than half (54 percent) provided homework help and other academic support, such as tutoring, state test preparation, and help sessions in reading, writing, and math skills. Help sessions usually were scheduled between one and three days a week, staffed by certified teachers, and targeted to particular students, such as those referred by a classroom teacher or those performing poorly on state standardized tests.

  In spite of the focus on homework support, fewer than two in five students (38 percent) said that the centers were a good place to get homework done. Consistent with this finding, site visitors observed that homework sessions usually were organized with students in large groups proctored by teachers or other staff members, with students talking to each other and staff members not checking the homework for quality or completeness.

- ***Recreation activities,*** such as using the gym, playing board games, or using computers. These often were part of the daily student fare although content varied according to the day.

- ***Cultural and interpersonal enrichment,*** including crafts, drama, music, mentoring, role modeling and conflict resolution, and issue forums. These activities were offered most days of the week but not necessarily every day. Specific activities might occur just once or twice during the week.

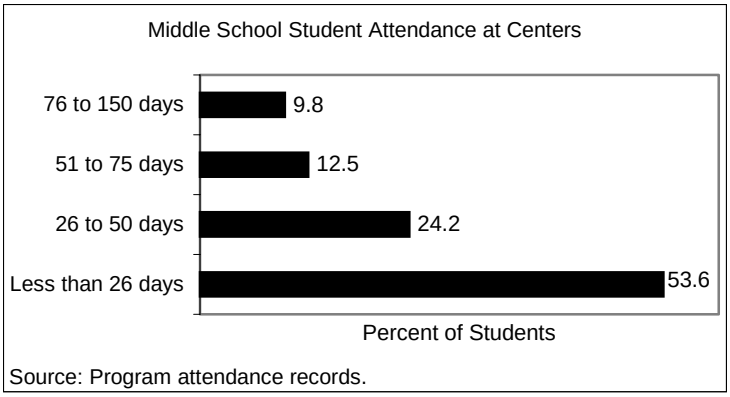
Characteristics of Staff in Middle School Centers

- ***Average Student-Staff Ratio across Centers:*** About 11-to-1. Academic activities had much lower ratios than recreational activities.
- ***Average Work Week:*** For coordinators, four to five days a week, five hours a day. For other staff members, three days a week, three hours a day, often in cycles and not continuously throughout the school year. About a third of coordinators and three-fifths of other staff members were teachers.
- ***Compensation:*** Fifty-five percent of middle school coordinators were paid by the hour, with an average hourly wage of about $17. Most other staff members also were paid by the hour, with an average hourly wage of about $16.

SOURCE: Survey of program staff for grantees in the national evaluation. Staff in the elementary school centers that were part of the national evaluation had similar characteristics.

Management and Staffing

Officials from the host school or district oversaw most middle school programs. Program directors usually had supervisory and administrative roles, while program coordinators handled day-to-day details of the centers, such as recruitment, scheduling, staffing, parent and community outreach, and attendance monitoring. Nearly all other staff members were directly involved in student activities or instruction and spent most of their time working with students. Survey data showed that middle school teachers believed that, as a result of working with students at the centers, they improved their teaching skills and had better relationships with some students.



Source: Program attendance records.

Student Participation

Middle school students in the study attended centers for 32 days—about one day a week—during the 2000-2001 school year. More than half attended for fewer than 25 days, a quarter attended for more than 50 days, and almost 10 percent attended for more than 75 days (see box). Program staff attributed the low attendance to the lack of interesting or appealing activities and to competition from other organized activities, especially sports. Center policies also made it

easy not to attend—many allowed students to participate on a drop-in basis, choosing each day whether or not to participate.

Not all students chose to participate in 21st-Century programs. Students who had chosen not to participate (surveyed in six selected programs) said that they would rather "hang out" after school, were involved in other organized activities after school, or were not interested in the activities. Almost half of the students thought the centers were "mostly a place kids go when their parents are at work," and a quarter considered them "just for kids who need help in school." Participants who had stopped attending echoed these sentiments.

A Typical Middle School Center

The center is open four days a week for two and a half hours a day. About 60 students participate on a given day. Activities begin with a homework session at 2:30 p.m., when the regular school day ends. Homework sessions are held in regular classrooms in one wing of the school. To participate in other recreational and enrichment activities, students must attend the homework sessions. In these sessions, students eat a snack provided by the program and work on their assignments. Each session has about 15 students and a teacher. Homework time ends at 3:45 p.m., and students then participate in a mix of recreational and enrichment activities. The center's activities include table tennis, Pep Club, tennis, golf, and board games. Enrichment activities include classes in martial arts, cooking, and choral music. Some activities, such as martial arts classes, are popular and are scheduled throughout the year. Others, such as cooking, change every 12 weeks to reflect changing student interest. The center's activities end at 5 p.m. and students go home on school buses.

Learning Outcomes

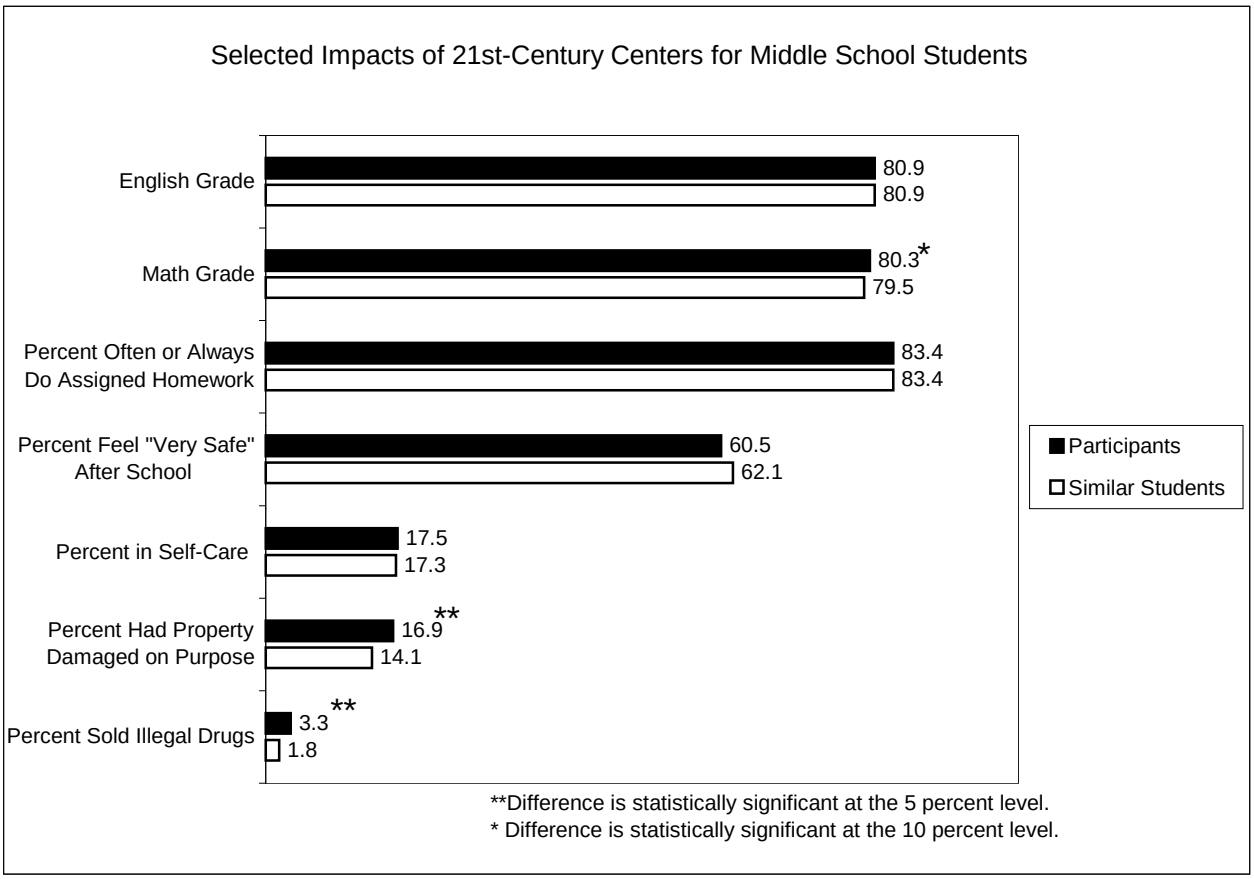
The objective of improving learning outcomes distinguished 21st-Century after-school programs, and more than 75 percent of parents of participants said they believed participation would help their child do better in school. However, participants were just as likely as comparison group students to complete homework, although they were more likely to do so to their teachers' satisfaction, and participants had about the same English, science, and social studies or history grades as similar students. Participants had slightly higher math grades (see box on next page), and slightly higher school attendance.

Additional Analyses and Other Outcomes

The evidence on the effect of programs on student effort in school is mixed. According to teachers, program students were more likely than similar students to try hard in reading or English class, be attentive in class, and participate and volunteer in class. However, teachers also report similar rates of frequent homework completion for program participant and nonparticipants. In addition, program participants report spending a similar number of hours watching TV.

Another program objective was to reduce students' exposure to unsafe settings. However, programs did not increase the extent to which students felt safer after school, and, although rates were not high, participants were more likely to report that they sold drugs, smoked marijuana, and, especially for girls, had their personal property damaged or were "picked on." Other measures of behavior—such as suspensions, absences, and teacher reports of discipline problems—were the same in both groups.

In general, program participation did not change students' interpersonal skills. Program students were no more likely to report getting along with others their age, feeling included, being good at working with others in a team, or setting a goal and working to achieve it. In fact, middle school participants were less likely their nonparticipant peers to rate themselves as good or excellent at working out conflicts with others.



NOTE: Reported impacts were estimated using regression models to adjust for baseline differences between program participants and the similar students. The adjustment variables in the regression models included student demographic characteristics, household socioeconomic status, and students' baseline test scores, attendance, disciplinary problems, and self-reported grades.

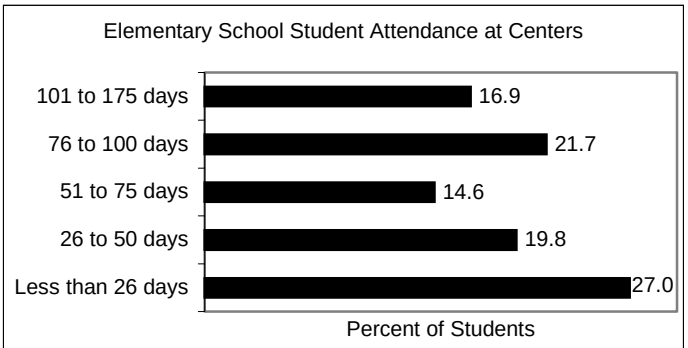
Impacts by program characteristics were also estimated. These analyses focused on two types of program characteristics: (1) program emphasis on academics and (2) levels of participant attendance. Interestingly, programs that emphasized academic activities over

recreation and other activities were not more likely to increase test scores or grades. Similarly, no relationship is evident between average attendance of a program and impacts by program.

Additional analysis looked at the impacts for frequent participants compared to infrequent participants. The analysis suggests that frequent participants were more likely to be from disadvantaged households and to want to improve in school, as their better behavior in school and their more frequent attendance itself indicate. However, the analysis did not reveal that more frequent participation led to better outcomes.

Findings for Elementary School Programs

Researchers selected elementary school centers that had more applicants than they could accept, because these centers could implement experimental designs. Elementary school programs in the study were more likely to be in urban areas and to serve more disadvantaged students than other elementary school programs, but most characteristics were similar to other elementary school programs.



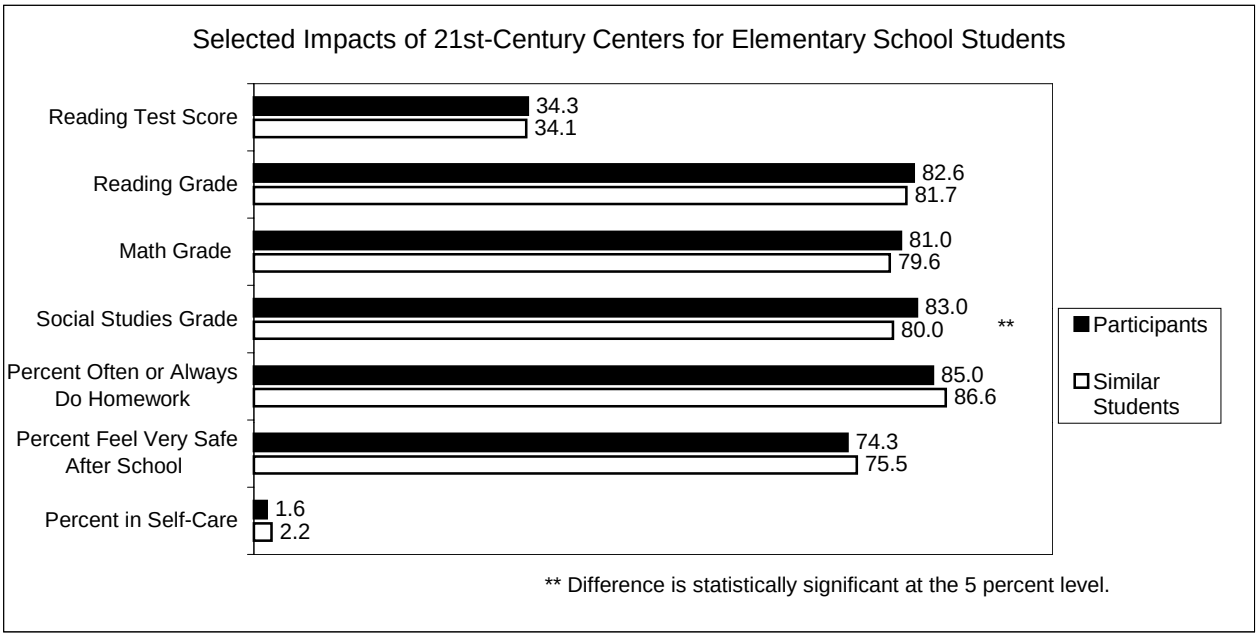
Source: Program attendance records.

Elementary school students attended for 58 days, on average, during the school year, and more than one-third of students attended for more than 75 days. These attendance levels may not be typical of attendance levels of elementary school programs in general because the evaluation looked only at oversubscribed programs.

The elementary school programs in the study increased the time students spent at school or outside the home and reduced the time spent at home after school cared for by a parent or sibling. Programs did not reduce self-care, the incidence of which was low (about two percent of students).

The programs had no effects on reading or math grades or reading test scores. For example, in spring 2001, program students had an average percentile reading score of 34.3, compared with a score of 34.1 for similar students. Social studies grades were higher by a statistically significant margin (83, compared with 80), but grades in other subjects were not.

Programs did not appear to improve student effort in school. Parents and teachers had different views about whether effort improved. According to teachers, program students were more likely than similar students to try hard in reading or English class. According to parents, however, program students were less likely than similar students to work hard in school. However, students reported no differences in homework completion, time spent watching television, or time spent reading for fun.



NOTE: Impacts were estimated using regression models to adjust for differences between treatment group and control groups in fall 2000. The adjustment variables in the regression included indicators of students' demographic characteristics, household socioeconomic status, and students' fall test scores, as well as previous year attendance, disciplinary problems, and self-reported grades.

Programs did not affect whether students felt safe or unsafe after school and did not affect student behavior in school. Suspensions, absences, and teacher reports of discipline problems were the same for both groups.

Program participation did not change students' interpersonal skills. Program students were no more likely to report getting along with others their age, feeling included, being good at working with others in a team, or setting a goal and working to achieve it.

A Typical Elementary School Center

The center is open five days a week for two and a half hours a day. About 80 students participate every day, with most participating three or four times a week. After the school day ends, students have a snack provided by the program and play outside for 30 minutes. At 2:30 p.m., third-, fourth-, and fifth-grade students participate in a homework session. Kindergarten, first-, and second-grade students have "story time." To participate in other recreational and enrichment activities, students must attend the homework session (or story time). In the homework session, students work on assignments or read a book if they have completed their homework. Each homework classroom has about 20 students, two at a table, and a college student or paraprofessional. At 3:30 p.m., homework and story time end, and recreational and enrichment activities begin. All students participate in two 45-minute electives. Recreational activities include arts and crafts, games, computers, and team sports. Enrichment activities include music, drama, and dance. Homework assistance and access to computers are provided throughout the year. Other electives change quarterly based on student interest. At 5 p.m., the second elective ends, and students gather in the school library to be picked up by school buses. If they have parental permission, some older students walk home after signing out.

Directions for the Future

These findings reflect the challenges school-based after-school programs face to improve student outcomes. Even for after-school programs oriented toward providing academic support as well as recreational and social activities, there were few improvements in homework completion, grades, and test scores. The lack of academic improvement may be due to the low attendance rates and the length of the follow-up period. However, analyses of those who participate more frequently found that more attendance alone may not make measurable differences in outcomes. In addition, too few participants may have received sustained, substantive academic support. Both participation rates and the content of program academic offerings may need more attention.

The No Child Left Behind Act restructures the 21st-Century program and focuses more attention on the program's potential for improving academic outcomes, especially for disadvantaged students. An additional year of follow-up and the expansion of the number of elementary school programs in the study will provide another opportunity to assess whether the programs (as they are currently implemented) are likely to meet these objectives.

I. Introduction

Most parents work, but most schools dismiss their students hours before the workday ends. During the intervening hours—"out-of-school time"—many parents want their children to be able to develop academic, personal, and social skills in safe, supervised settings. In 1994, Congress created the 21st-Century Community Learning Centers program to support efforts by communities to make greater use of school buildings when schools were not in session. The program, operated by the U.S. Department of Education (ED), later refocused its efforts to provide after-school opportunities and made its first grants supporting after-school activities in 1998. By 2002, more than 1,400 school districts and communities were participating.

In September 1999, ED selected Mathematica Policy Research, Inc. (MPR) and its partner, Decision Information Resources, Inc., to conduct a national evaluation of the program. The Charles Stewart Mott Foundation also contributed to the evaluation through a grant to MPR. This report provides findings from the evaluation's first year of qualitative and quantitative data collection from students, parents, teachers, principals, and program staff members, as well as from visits to the programs and observations of their activities.

Underlying the interest in after-school programs is their potential to improve a wide range of outcomes.[3] Programs could improve academic outcomes by helping students become more capable in the classroom, learn more subject matter, and have higher grades and test scores. They could improve developmental outcomes by helping children and youths learn social skills, appreciate their own and other cultures, and become more sure of themselves and their own values. And programs could keep children and youths safe. The evaluation examined how

[3]See, for example, *Safe and Smart* (1998) and *Working for Children and Families (*2000), both prepared by ED and the U.S. Department of Justice.

21st-Century programs were implemented, how they were structured, whom they served, and the issues they faced in meeting their objectives. It also examined whether and how programs improved academic and developmental outcomes.

A. The 21st-Century Community Learning Centers Program

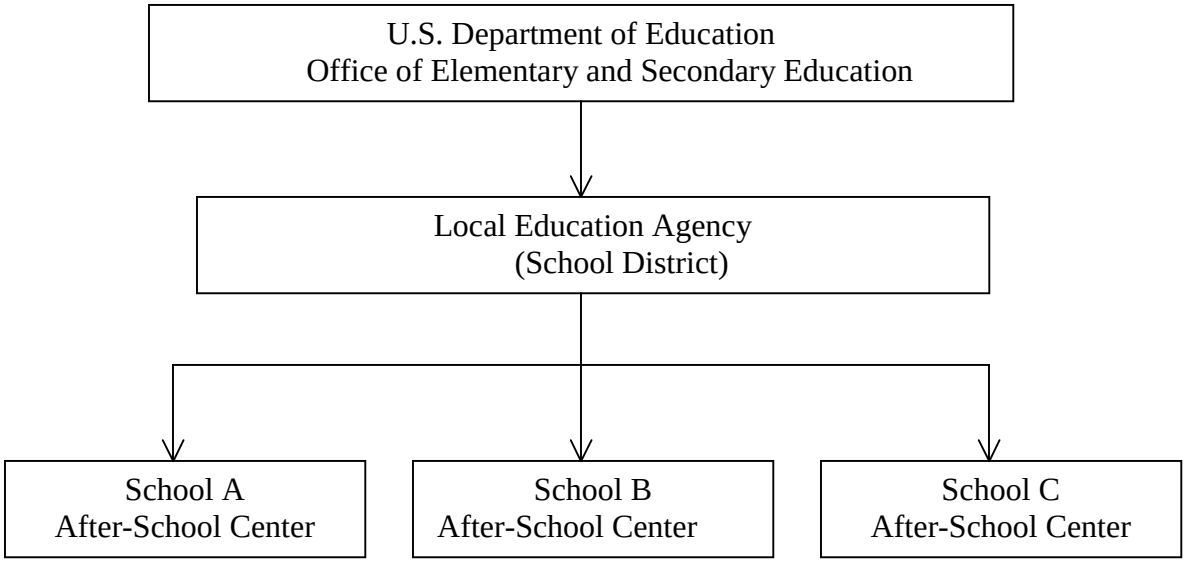
The Improving America's Schools Act of 1994 (P.L. 103-382) created the 21st-Century program. In fiscal year 1998, Congress appropriated $40 million for it, and ED awarded grants to 99 school districts. Subsequently, the appropriation and the program's scale increased substantially, with the appropriation rising to $1 billion in fiscal year 2002 and the number of grantees to nearly 1,600. In all, ED has funded seven cohorts of grantees. The national evaluation focuses mostly on the first three rounds (or cohorts) of grantees receiving 21st-Century grants.

The legislation stipulated grants of three years' duration, awarded only to local education agencies (which usually are school districts). The average grant award for the first three cohorts of grantees was slightly under $400,000. Figure I.1 diagrams the general structure of a 21st-Century grant as it moves from ED to the level of local schools. The school districts receiving grants must use their funds to operate school-based programs. Often, the grants support after-school centers in public school buildings, although grant funds can be used to operate summer and before-school programs.[4] The programs the grantees offer at the after-school centers must incorporate at least 4 of 13 activities listed in the authorizing legislation. These activities include integrated education, health, social service, recreational, or cultural programs, literacy education programs, children's day care services, and telecommunications and technology education programs.

[4]The national evaluation did not investigate grantees' summer and before-school program offerings.

Figure I.1

Structure of 21st-Century Community
Learning Center Grants



Although only districts and schools are eligible to receive grants, the federal statute strongly encouraged grantees to collaborate with other public agencies, nonprofit organizations, and businesses in their communities. The statute required local education agencies to describe "the collaborative efforts to be undertaken" with such organizations. It also defined community learning centers as places to be operated by local education agencies "in conjunction with" organizations external to schools.

Data from annual performance reports that grantees submitted to ED in April and October 2001 give the size of the centers that grantees operated, the most common services the centers

provided, and the types of schools in which centers were operating.[5] The following information from the reports gives highlights of centers' features:

- The average grantee operated between three and four centers and reported enrolling nearly 700 students and 250 adults (parents or other adults from the community) over the course of the year.
- Nearly all centers were open 10 or more hours a week, usually after school, and a third were open 20 hours or more. Some were also open on Saturdays, and many offered summer programs.
- Most centers were in elementary and middle schools or in schools that included a combination of K-8 grade levels. Five percent of centers operated in high schools.
- Nearly all centers reported providing reading, math, and science activities. Enrichment activities, such as art and music, and technology activities also were common.
- Schools that centers served had more minority students than the average school. Fifty-seven percent of students in schools that centers served were minority students, compared with 37 percent of students nationwide.
- Schools that centers served were more likely to be high-poverty schools. Sixty-six percent were high-poverty (meaning that more than half their students were eligible for free or reduced-price lunches), while 17 percent of schools nationwide fall into this category.
- Most centers reported that they collaborated with local organizations to provide services, set goals and objectives, and share techniques.
- Nearly all centers reported communicating with their host schools to recruit and refer students, provide feedback on students, set goals and objectives, communicate curricula, and share instructional practices. Nearly all centers reported that at least one of their staff members worked in the host school.

The highlights do not convey the substantial variation in centers' schedules, staffing, and emphases, which we discuss in subsequent chapters.

Other after-school programs around the country, such as the Beacons, LA's BEST, programs supported by the After-School Corporation in New York, and Boys and Girls Clubs, are similar

[5]Annual performance report data are for grantees in the first through fifth cohorts that submitted reports to ED in April and October 2001. Grantees are responsible for gathering and reporting the data.

to the 21st-Century program in many respects. An important difference is the requirement that 21st-Century grantees offer academic activities.[6] Furthermore, until recently, only local education agencies could receive a 21st-Century grant, and the centers supported by the grant had to be located in a public education facility.

The No Child Left Behind Act, which became law in January 2002 (P.L. 107-110), changed the 21st-Century program in major ways. As the program operated before this legislation, ED received funds, carried out grant competitions, and made awards under set criteria to those submitting the highest-rated grant applications. Grants were for three years, and grantees were not required to match federal funds with state or local funds. For the new program, each state will be allotted funds and will carry out its own grant competition and make awards. Local education agencies, as well as community and nonprofit organizations, will be eligible for awards. States may specify up to a dollar-for-dollar match in making awards, and the grant period can be from three to five years, at the discretion of the state.

B. A Conceptual Framework for the National Evaluation

A previous report (Dynarski et al. 2001) describes the evaluation's design. An accompanying concept paper (Moore et al. 2000) examines design aspects enhanced by the grant from the Mott Foundation and the integration of the evaluation components. The report and the concept paper together laid out the evaluation's conceptual framework, discussed statistical aspects regarding how grantees were selected for the evaluation, and presented the instruments and protocols used to gather data. The key highlights of the design include an emphasis on rigorous estimation of effects and multifaceted data collection that allowed the evaluation to

[6]Many of these other programs, however, include improving educational performance among their goals and offer time for homework, reading, and, sometimes, tutoring.

explore many questions about program operation and implementation in addition to its impacts on children and youths.

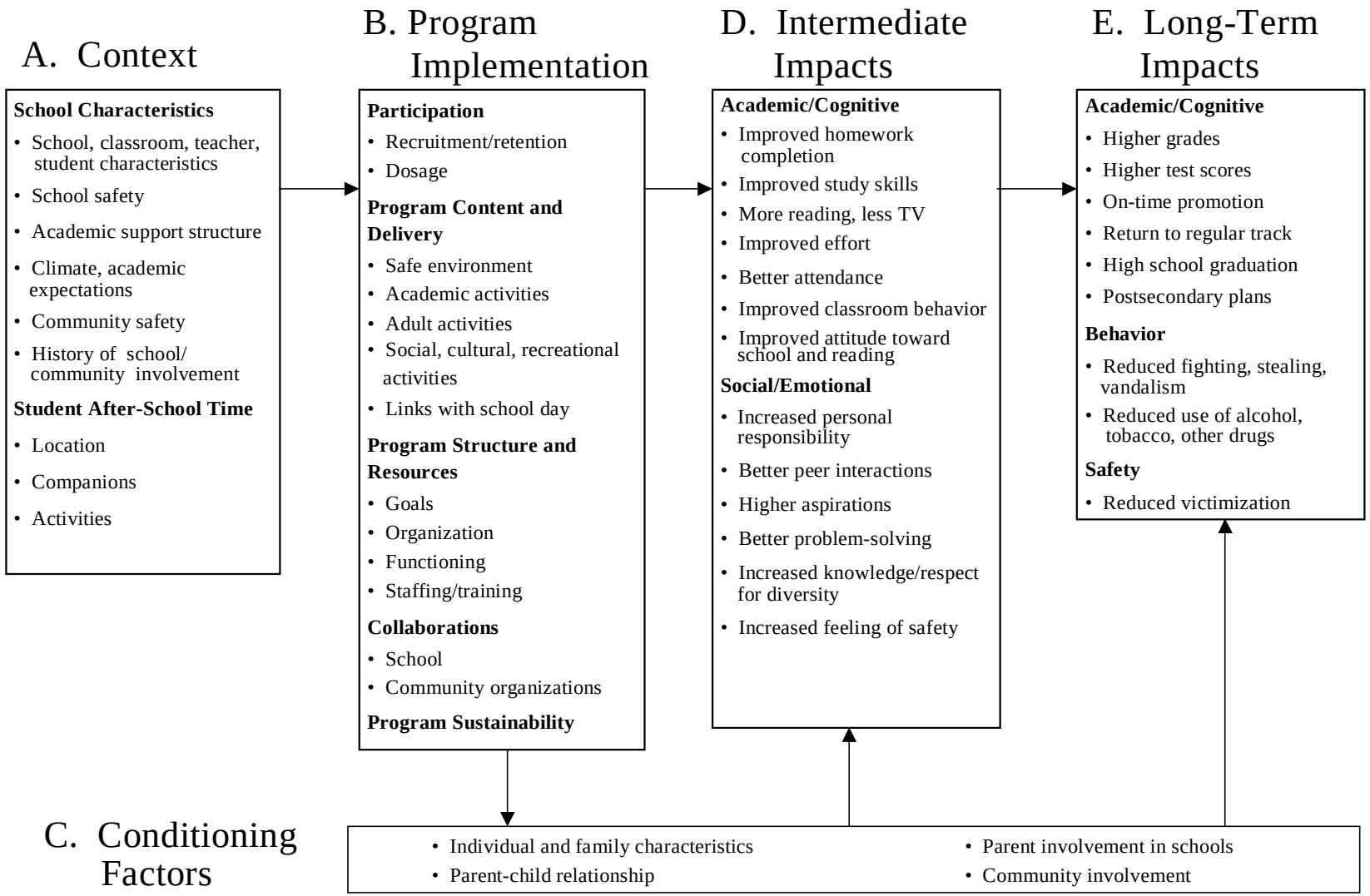
The logic model shown in Figure I.2, which presents the five topical areas central to the national evaluation, guided the outcomes measured and the issues considered in studying program implementation. These areas are (A) the context in which an after-school program operates; (B) the implementation of the after-school program itself; (C) family, individual, and community conditioning factors that influence after-school programs and that, in turn, affect (D and E) student intermediate and long-term outcomes. The figure highlights how after-school programs are embedded in the larger constellation of school, community, and family influences that contribute to student outcomes in and out of school.

Context. The national evaluation set out to identify the circumstances under which after-school programs are implemented. These circumstances include the educational and policy climate, perceptions about safety, community relationships, and demographic characteristics of the school, district, and community.

Program Implementation. To help us learn which practices and approaches are effective in different settings and for different student groups, it is necessary to know the details of how programs operate. The following measures of program implementation help us understand how programs were implemented and structured: student participation, program content and structure, collaboration with host schools and community organizations, and efforts toward sustainability.

Intermediate and Long-Term Impacts. Because 21st-Century programs provide many services and activities, the programs could have many impacts, including improved safety, better

Figure I.2
Logic Model for Understanding the Impacts of 21st-Century Programs



academic performance, positive behavioral changes, and increased personal competence. The conceptual framework separates effects into intermediate effects and the longer-term effects that are presumed to follow. For example, if students attend school more often and try harder in the classroom (intermediate effects), they are more likely to improve their grades and test scores (long-term effects). Similarly, if students exhibit greater personal responsibility and associate with peers who share positive values, risky behaviors are more likely to decline.

Conditioning Factors. External factors and relationships may influence the effects of after-school programs on students. For example, specific features of after-school programs may affect older students differently from the way they affect younger students. Students with learning deficits may benefit more from after-school programs than students at less risk. Students with behavioral difficulties may benefit differently from students without them.

C. Key Features of the Design

The design report presents more detail about the aspects of the evaluation's implementation and impact data collection and analysis design. Here, we discuss the key features of the design.

1. Different Designs Used to Evaluate Centers Serving Middle School Students and Those Serving Elementary School Students

The national evaluation was designed to use rigorous techniques to measure impacts of after-school programs on students in middle and elementary schools. Comparison-student designs (with matching to identify comparison students) were used to measure the impacts of middle school programs, and experimental designs were used to measure the impacts of elementary school programs.[7] We chose a comparison-student design for middle school

[7]In general, students selected for the middle school sample attended grades 6 through 8, while students sampled at the elementary school level attended kindergarten through grade 5. Some districts had middle schools

programs because of the paucity of oversubscribed middle school centers. Because centers serving elementary school students were more likely than those serving middle school students to be oversubscribed, the evaluation was able to identify a set of elementary school centers that could implement rigorous experimental designs, with random assignment of students to treatment groups and control groups.

Middle School Sample. To evaluate middle school centers, we selected as a probability sample a set of grantees that operated such centers. The evaluation team used students attending 21st-Century centers during a one-month window in the fall of 2000 to form the treatment groups, and identified similar students not attending these centers to form the comparison groups. Thirty-five grantees from cohorts one through three that operated centers serving middle school students were selected at random from 16 strata. (Grantees were not excluded if they operated elementary school centers, as long as they operated at least one center that served middle school students.) The stratification ensured representation of grantees' geographic region and urban and rural areas. Findings for the middle school centers in the evaluation generalize to first- through third-cohort grantees serving middle school students, because the grantees were a random sample of all middle school grantees in those cohorts. At the start of data collection activities, first-cohort grantees were beginning their third year of funding and second and third cohort grantees were beginning their second full year of funding. Second-cohort grants were awarded in November 1998 and some grantees may not have begun serving students until the fall of 1999.

Ultimately, 34 middle school grantees agreed to participate in the evaluation. Annual performance report data provide a sense of how the sample of middle school grantees

(continued)
that included fifth grade or elementary schools that included sixth grade, in which case the national evaluation used those definitions.

represented the full set of middle school grantees. Table I.1 presents characteristics of all centers and of those in the evaluation from which performance report data were gathered (25 of the 34 grantees). The table shows that characteristics of middle school centers in the national evaluation, as expected from the random sampling procedure used, are similar to those of middle school centers in general. For example, the average center had 23 staff members, and the average sampled center had 21. Middle school centers in the evaluation served fewer students (238 compared with 243) and had fewer attending for 30 days or more (79, compared with 101). The racial and ethnic composition of enrolled students was similar.

For each grantee, the evaluation team used propensity score matching techniques (Rosenbaum and Rubin 1983) to select a group of comparison students for program participants. (Appendix B describes technical aspects of how the matching was done.) Ultimately, we obtained parental consents and follow-up data for 4,264 students. The evaluation was able to collect the first wave of follow-up data for 32 grantees. Delays in getting baseline data from two grantees impinged on the first follow-up effort in those districts, so data from the second follow-up effort in those two districts will be included in the next report.

The middle school comparison design offers a rigorous assessment of the impacts of after-school programs on middle school students. The design used for the assessment, however, was dictated by the lack of oversubscription for most middle school programs. The findings lack the same high degree of internal validity of random-assignment designs. We used analytic techniques to try to minimize this shortcoming, but, ultimately, the shortcomings temper our ability to attribute measured effects to the 21st-Century programs alone. Nevertheless, the

Table I.1

Characteristics of Centers in the National Evaluation

	Middle School Centers	National Evaluation Sample of Middle School Centers	Elementary School Centers	National Evaluation Sample of Elementary School Centers
Characteristics of Staff Members				
Average Number	23.0	21.0	22.0	24.0
School Day Teachers (%)	39.6	40.6	34.1	35.2
College Students (%)	11.5	13.6	14.8	27.2
High School Students (%)	10.0	5.4	11.8	1.4
Parents (%)	9.1	5.7	10.7	4.5
Youth Development Workers (%)	7.6	4.6	6.3	12.8
Other Community Members (%)	12.1	9.4	10.5	13.4
Student Attendance				
Average Number Attending Fewer than 30 Days	142.0	159.0	88.0	51.0
Average Number Attending 30 Days or More	101.0	79.0	97.0	103.0
Percent Attending Fewer than 30 Days	58.4	66.8	47.6	33.1
Percent Attending 30 Days or More	41.6	33.2	52.4	66.9

Table I.1 (*Continued*)

	Middle School Centers	National Evaluation Sample of Middle School Centers	Elementary School Centers	National Evaluation Sample of Elementary School Centers
Race/Ethnicity of Enrolled Students (Percent)				
White	40.0	45.3	39.7	28.2
Black or African American	25.3	23.8	22.8	66.8
Hispanic	22.1	22.9	27.6	1.8
Asian	2.4	1.5	2.0	1.9
Native Hawaiian or Other Pacific Islander	1.0	0.1	0.7	0.3
American Indian or Alaska Native	5.5	2.3	5.4	1.0
Percent Eligible for Free or Reduced-Price Lunches				
Less than 25 percent	12.3	19.0	11.1	0.0
25 to 49 percent	24.1	14.3	19.6	28.6
50 to 74 percent	25.9	33.3	24.3	0.0
75 to 100 percent	37.7	33.3	45.1	71.4
Sample Size	**768**	**46[a]**	**792**	**11[a]**

SOURCE: Annual performance reports.

[a]Annual performance report data were not available for 16 middle school centers and 7 elementary school centers that were included in the national evaluation.

information in this report provides the best available estimate to date of the impacts nationwide of 21st-Century programs on students in this age group.

Elementary School Sample. To implement the elementary school evaluation design, we randomly assigned about 1,000 students at seven grantees during fall 2000 and collected data for them at baseline and in spring 2001. These seven grantees and their student samples generate the elementary school findings presented in this report. To augment the size of the elementary school sample, we randomly assigned another 1,600 students in seven additional elementary grantees in fall 2001 and collected baseline data. We will include results for these students in the next report, scheduled for winter 2003. Because the first-year findings may change when the full set of elementary school grantees is included in the analysis, the elementary school findings in this report should be viewed as preliminary.

Findings for the elementary school centers in the evaluation do not generalize to all elementary school centers, because the ones in the evaluation were chosen for their ability to carry out the experimental design. Table I.1 shows characteristics of all elementary school centers that submitted annual performance report data, as well as characteristics of 11 of the 18 centers in the first cohort of the national study for which performance report data were available. In general, the elementary centers for which we report results at this time serve a larger percentage of minority students, especially African Americans, than elementary centers in the same grantee cohorts, and are in schools with higher poverty levels. However, although not a representative sample, the elementary school findings have strong internal validity for attributing student outcome differences to the 21st-Century program. Consequently, they have important implications for understanding how after-school programs serving younger students can affect outcomes.

2. Impacts Estimated for a Range of Academic and Nonacademic Outcomes, Using Data from Students, Parents, and Teachers

We gathered data for a wide range of outcomes from student questionnaires, school records, parent questionnaires, and teacher questionnaires. (Appendix A describes the evaluation's data collection procedures and response rates for the instruments.) Outcomes included academic performance and homework completion, behavior, feelings of safety, and personal and social development. Teachers who received questionnaires were English teachers of the middle school students and regular classroom teachers of the elementary school students the evaluation sampled.

Two major considerations in evaluating after-school programs are the different levels of participation among enrolled students and the activities that were available on the days they did attend. The national evaluation addressed the first by collecting attendance information from each center for students in the sample. However, because of the lack of routinely kept records of attendance at each activity in the centers, as well as the burden associated with imposing such a system on center staff, the evaluation could not obtain a detailed breakdown of the degree to which each student in the sample participated in specific activities.

3. Program Implementation Assessed Based on Visits to Grantees and Other Data

Research staff conducted site visits to all grantees in the evaluation at least once during the 2000-2001 school year. Most visits lasted two to four days and included interviews with staff members associated with centers, host schools, districts, and collaborating community organizations. Six grantees were visited twice as part of the enhancement study supported by a grant from the Mott Foundation. Site visit reports were coded using qualitative analysis software, and site visitors completed several assessment forms that allowed researchers to categorize center programs (for example, to distinguish the degree of emphasis placed on

academics and developmental activities).[8] In addition, questionnaires were administered to principals, to all center staff members, and, in the six grantees that were part of the enhancement study, to a sample of students in the host schools who did not attend the centers during the school year. The data on nonparticipants provided insights into why the students did not participate and factors that would have encouraged them to participate.

D. Organization of Report and Presentation of Findings

The chapters that follow describe the implementation of the middle school centers, the impacts of middle school centers, and the implementation and impacts of elementary school centers. We separate centers by the grade levels served because of the differences in how we measured impacts for the two types. We studied implementation using the same methods for collecting and analyzing the data, but the design differences give a somewhat different meaning to the middle school and elementary school implementation findings. The middle school findings can be generalized to first- to third-cohort grantees serving middle school students, whereas the elementary school findings cannot be generalized to all grantees serving elementary school students.

Throughout the rest of this report, we present findings from perspectives (for example, from the grantee, the center staff members in the schools, principals and teachers at host schools, and participating students and comparison students) appropriate to the topic being discussed. Furthermore, for subsequent chapters that relate impact results, we analyzed student impacts at

[8]Volume 2 of the design report contains examples of the assessment forms.

the grantee level, not the individual center level.[9] A range of implementation findings are presented at the individual center level.

Throughout the report, we use the terms "grantee" or "project" to apply to activities and operations at the level of the school districts sampled as part of the national evaluation. We reserve the term "programs" for the activities and offerings of the 21st-Century learning centers in the evaluation. "Project directors" are those charged with oversight of the grant by the school district, and "center coordinators" are those who directly oversee after-school programs in the school buildings.

[9]We found less variation for centers within grantees, for example, than across them, which supports our use of the grantee as a unit of analysis. Furthermore, student matches at the middle school level were based on the treatment sample for the grantee as a whole, which precluded analyses by individual centers within a given grantee.