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Early Outcomes of the GEAR UP Program

Final Report

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Policy and Program Studies Service

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CONTENTS

Contents (continued)

Contents (continued)

Contents (continued)

Figures

Contents (continued)

Figures (continued)

Contents (continued)

Tables

Contents (continued)

Tables (continued)

Contents (continued)

Tables (continued)

Contents (continued)

Tables (continued)

Contents (continued)

Tables (continued)

Contents (continued)

Tables (continued)

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Executive Summary

In 1998, Congress authorized the Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) program. The purpose of the program is to foster increased knowledge, expectations, and preparation for postsecondary education among low-income students and their families. GEAR UP projects may provide services to students, parents and teachers at high-poverty schools with at least 50 percent of students eligible for free or reduced price lunch. Services may include: tutoring, mentoring, college field trips, career awareness, colleges-readiness counseling, classes, meetings, parent education about access to higher education, curriculum reform, and teacher training. GEAR UP is based on a model of providing services to an entire grade cohort, and grantees are required to offer services to all students in the target grade or grades according to their needs, but individual participation is voluntary. GEAR UP services must begin no later than the seventh grade. The GEAR UP model also stresses partnerships of schools, districts, community organizations and postsecondary institutions. The first grants were awarded in August of 1999. Most of the first GEAR UP grantees began by serving sixth- or seventh-graders in fall of 1999, with the intention of providing continuing services to this cohort of students as they progressed through high school.

Evaluation Design

The five-year contract supporting the evaluation started at about the same time as the first grants were awarded. Because the GEAR UP program was new, the evaluation was given the task of describing the projects as they existed as well as evaluating key student and parent interim outcomes. As a random assignment study was not possible, a quasi-experimental evaluation design was used.

There were two major goals of the evaluation. The first was to provide descriptive information on the early implementation of the program and the second was to observe the association between GEAR UP participation, and student and parent outcomes. To provide the descriptive information the study conducted site visits to a sample of 20 of the initial partnership projects. From these partnerships, a sample of 18 middle schools and 18 matched comparisons schools was selected and up to 140 seventh-grade students were randomly selected from each school. Student and parent surveys were administered about midway through the seventh grade and near the end of the eighth grade. Student school records and GEAR UP participation records were also obtained.

The design focused on GEAR UP's intended middle school outcomes, with plans for subsequent studies to examine the longer term outcome of entry into postsecondary education since it was more than five years before the first program participants would be college-age. This report primarily discusses interim GEAR UP outcomes for middle school students and their parents. In addition, using qualitative data from the site visits, the report examines the secondary outcomes for GEAR UP on middle schools and the sustainability of the program's activities after federal funds are no longer available. The interim outcomes examined are those identified in the conceptual framework of the GEAR UP program: improved knowledge, behavior and expectations. The outcomes for GEAR UP associated with high school

achievement and preparation for and enrollment in college will be examined in subsequent data collections and reports.[1]

Data Sources and Limitations

The information for the evaluation comes from site visits, surveys of students and parents, student transcripts and school administrative records for a sample of GEAR UP middle school students and from a matched comparison group of non-GEAR UP middle school students. A number of factors in the evaluation design lead to some important limitations on the strength of conclusions that are drawn in the report. First of all, it was not a randomized experiment. The set of cooperating grantees and schools is a small purposive sample, leading both to concerns about generalizability and power to detect small effects—particularly schoolwide effects such as curriculum changes and the resulting shift in course-taking patterns. The comparison schools could not be matched on historical college attendance rates, as would have ideally been desired, and because service provision started prior to baseline data collection in the seventh grade, it was not possible to remove all seventh-grade differences between the two sets of students without simultaneously removing some of the effects of early information services.

Two important parts of the evaluation were to describe the actual interventions and to assess the prospects for the sustainability of the program's activities after federal funds are no longer available to these grantees. These goals required intensive onsite activities that could only be done at a small number of schools due to the associated costs. Thus, the school sample size is small. Eighteen schools from GEAR UP projects and 18 non-GEAR UP comparison schools participated in the evaluation. The analytic procedures used in the report fully adjusted significance levels for the small number of study schools. There is, however, the possibility that effects were missed because the process for adjusting significance levels sharply reduced the statistical power. The reduction in statistical power was particularly acute for school-level outcomes because the sample size (36 schools) is so small.

As a result of these factors—project selection procedure and sample size—the procedure for selecting matching comparison schools and the difficulties in obtaining baseline measurements, the findings in this report are more suggestive than definitive.

Key Findings

- Attending a GEAR UP school as measured near the end of eighth grade was positively associated[2] with parents' knowledge of opportunities and benefits of postsecondary education for their children (table 3-3c).

- Attending a GEAR UP school as measured near the end of eighth grade was positively associated with students' knowledge concerning postsecondary education opportunities available to them (table 3-3a).

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[1] In September 2004, the U.S. Department of Education issued a contract to determine high school outcomes, such as academic preparation for postsecondary education and postsecondary enrollment.

[2] Throughout the report, an "association" is discussed only if the supporting hypothesis test was significant at the 5 percent level, meaning there would have been only a 5 percent chance of finding the difference by chance. Some associations are discussed when the significance level of the test was at the 10 percent level. These are qualified by the phrase "modest evidence." If no evidence was found even at the 10 percent level, the phrase "no evidence" is used.

- Attending a GEAR UP school as measured near the end of eighth grade was positively associated with parents' involvement in the school and their children's education (tables 3-3b and 3-3d).

- Attending a GEAR UP school as measured near the end of eighth grade was positively associated with parents' having higher academic expectations for their children (tables 3-2c and 3-2d). However, there was no evidence of an association between attending a GEAR UP school and the strength of student intentions to attend college, expectations for postsecondary education or overall orientation toward college (tables 3-2a, 3-2b and 3-4c).

- There was no evidence of an association between attending a GEAR UP school and grades or school behavior, such as attendance or disciplinary problems (table 3-1i).

- Attending a GEAR UP school as measured near the end of eighth grade was positively associated with taking above-grade-level science courses in middle school (table 3-1a).

While these general statements are true, there were differences in the magnitude and statistical significance of the associations by various classifications of students. In no case, however, was the direction of the association (i.e., positive versus negative) different across the classifications. Students were categorized by their race or ethnicity, whether any members of their family had gone to college (so called first-generation students) and the degree to which their seventh-grade orientation to going to college was not at the extremes of their cohort (i.e., had orientations toward definitely going to college or definitely not going to college). Because the vast majority of students in the study were from low-income families, no categorization of students by income was possible.

For the most part, the results reported above for all students were true across the various classifications of students. A notable exception is presented below.

- For African-American students attendance at a GEAR UP school as measured near the end of eighth grade was positively associated with the number of rigorous (or above-grade-level)[3] courses taken during middle school. African-American students from GEAR UP schools averaged 1.0 rigorous course as compared to 0.5 of a course among African-American students from non-GEAR UP schools (table 3-1f).

The site visits to the sampled GEAR UP middle schools revealed the following:

- GEAR UP middle school staff, participating in the study focus groups, reported that GEAR UP middle schools were more likely than non-GEAR UP middle schools to offer honors and above-grade-level classes. They perceived that some of these changes took place with the implementation of the GEAR UP projects in 1999 (section 4.1).

- Most of the teachers who participated in focus groups expressed positive opinions about GEAR UP-sponsored professional development, although there was some

[3] Academic rigor is determined by the number of core academic courses taken that are considered to be above grade level for an average eighth-grade student.

variation in how useful or relevant teachers felt individual sessions were for them or to GEAR UP's purpose (section 4.2).

Finally, the study examined GEAR UP on two important issues: transitioning the program to high school and sustainability beyond the federal grant.

- Projects reported some difficulty transitioning into high schools; such as inadequate staffing and administrative barriers, which were similar to those reported two years earlier when the grants were just starting out in middle schools. Projects reporting the smoothest transitions tended to provide services to high school students that were similar to those provided to middle school students (section 6.1).

- Early evidence suggests that some aspects of GEAR UP will be sustained in middle schools beyond the period of federal funding. About half of the projects studied were optimistic about continuing, and one-third had made specific plans to do so as they neared the third year of their grants (section 6.2).

1. Introduction

1.1 Context and Purpose of the Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) Program

Early intervention is believed to influence a student's behaviors and outcomes and facilitate equal opportunity for postsecondary education.

The economic success of individuals and the larger economy has become increasingly dependent on individuals continuing their education beyond high school, whether through college or some other form of postsecondary vocational training. For this reason, policymakers and educators have focused greater attention over the past decade on improving access to postsecondary education for all students. The federal government began the practice of initiating and supporting programs to facilitate equal opportunity for higher education among historically underrepresented groups such as ethnic minorities and low-income families with the enactment of the *Higher Education Act of 1965*. In addition, over the past decade, school reform efforts have focused on standards and accountability and have been geared toward the whole school and all of its students. A consensus has emerged that it is necessary to intervene early in order to influence student behavior and outcomes in high school and beyond. According to the Carnegie Council on Adolescent Development (1995), adolescence is the last chance for social institutions to influence youth behavior and attitudes.

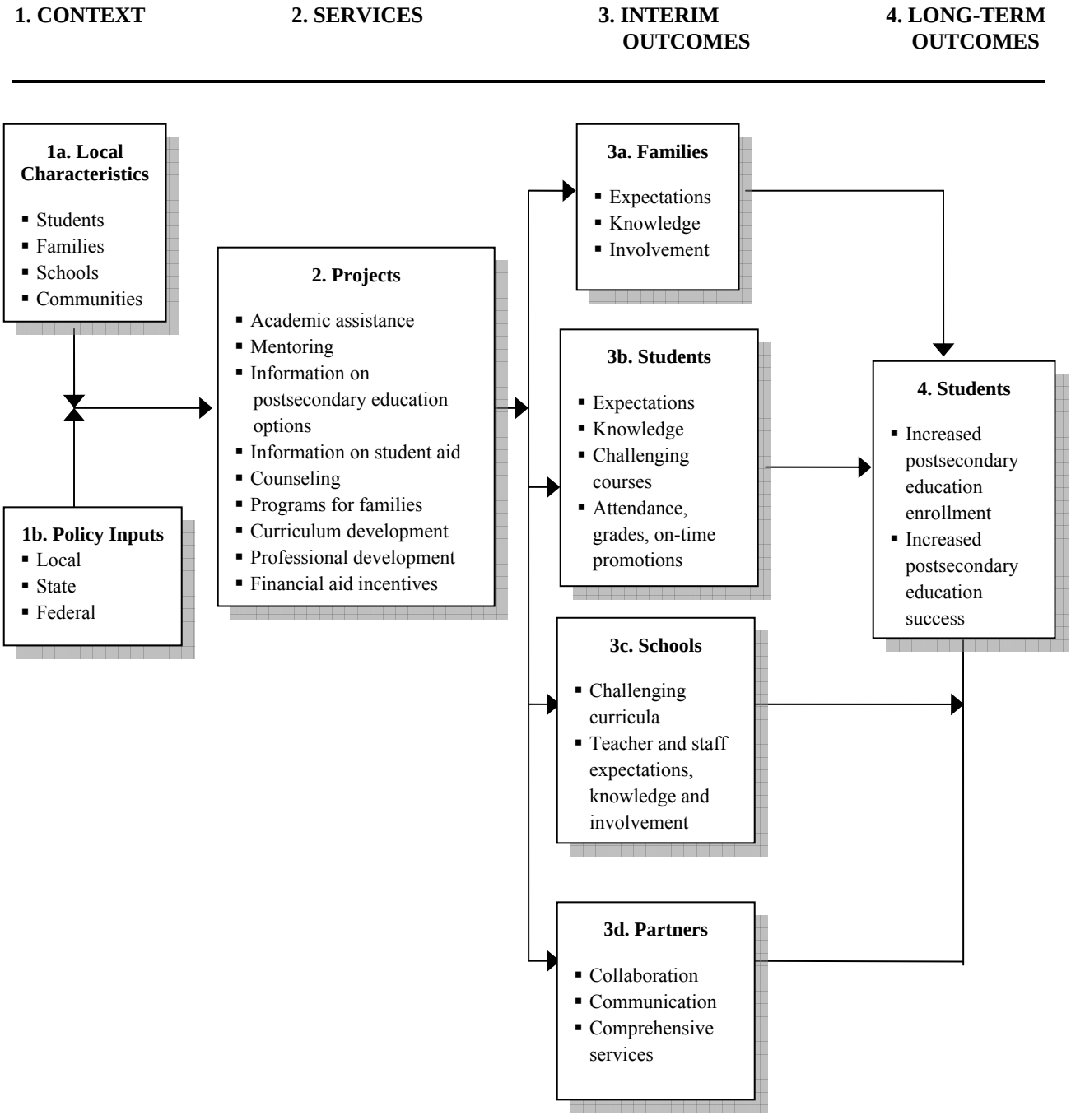
GEAR UP promotes equal access to postsecondary education for low-income students.

The GEAR UP program was authorized under the 1998 amendments to the *Higher Education Act* to further address the continuing imbalance in postsecondary attendance rates by specifically promoting equal access to higher education for low-income students. Initiatives such as the I Have A Dream project placed an emphasis on the role of peers. Research in this area led to GEAR UP's cohort approach, which is unique compared to other federal programs that seek to promote college for low-income youths. Grants were awarded to either states or partnerships between a college or university and a school district.

The use of partnerships is a unique feature of GEAR UP. The GEAR UP program requires a variety of entities to work together to provide services to a cohort (or whole grade) of students, starting no later than the seventh grade and following them through high school. The long-term outcomes sought by the GEAR UP program are increased postsecondary education enrollment and success for those targeted by the program.

The conceptual framework that guides GEAR UP is depicted in figure 1-1. The framework shows that within a context of targeted students, families, schools and communities, GEAR UP projects provide various types of services. It is anticipated that these services are derived from research-based best practices.

Figure 1-1. Conceptual framework of the impact of GEAR UP



Source: Westat analysis of *HEA 1988* Amendments, 2007.

Furthermore, these services are intended to result in interim (or early) outcomes that are logically associated with the desired longer term outcomes of the program.

Federal Grants

The GEAR UP legislation stipulates that projects be awarded five-year grants. During the 108th Congress, appropriation language was introduced and passed that included a provision to fund a sixth year for all GEAR UP projects so that projects starting with a cohort of seventh-graders could continue serving these students through 12th grade. The legislation is nonprescriptive about how grantees should operate or the services that should be provided, but consistent with the conceptual framework, it does mandate that grantees increase postsecondary access and completion through the promotion of the following:

The GEAR UP legislation gives projects latitude in determining services needed by schools, students and parents.

- Information to students and parents (e.g., appropriate information on college preparatory courses, cost of college attendance, financial assistance and different programs of study),
- Individualized academic and social support to students,
- Parent involvement in education,
- Educational excellence,
- School reform, and
- Student participation in rigorous courses.

The first GEAR UP grants were awarded in August 1999 to two types of recipients: (1) partnerships of school districts, colleges and other organizations and (2) state agencies. Partnership grantees are charged with establishing strong and lasting partnerships among school districts, colleges and other entities to operate the projects. State GEAR UP grantees do not have this requirement. In its first round of awards, the U.S. Department of Education awarded $75 million in federal resources to 164 partnership grantees and $42 million to 21 state grantees. Table 1-1 shows the history of the program funding and awards. The legislation stipulates that two-thirds of the federal funds are to be awarded to partnership grantees and the remaining one-third to state grantees.

By FY 2005, there were 641 GEAR UP projects.

Partnership grants require recipients to begin providing services to students no later than seventh grade and to continue services to these students in participating high schools until graduation. This requirement means that, in nearly all school districts in the program, middle schools have been the first schools to participate in GEAR UP. (A small number of grantees chose to begin providing services at the elementary school level when the elementary school included a seventh grade. A handful of grantees chose to provide services to students living in housing authorities, which are exempt from the age requirements.) In all participating middle schools, at least 50 percent of the students must

GEAR UP partnerships must begin providing services to a cohort of students no later than the seventh grade.

Table 1-1. History of program funding and awards

Fiscal year	Funding (dollars in millions)	Number of new awards
1999	$120	185 (164 partnerships, 21 states)
2000	$200	80 (73 partnerships, 7 states)
2001	$295	8 (6 partnerships, 2 states)
2002	$285	51 (45 partnerships, 6 states)
2003	$294	0
2004	$298	0
2005	$306	125 (98 partnerships, 27 states)
Total	$1,798	641

Note: A total of 245 grants were active in 2005–06, of which 125 were new awards and 120 were continuations from prior years.

be low-income (i.e., eligible for free or reduced-price lunches).[4] GEAR UP partnership grantees must provide assistance to **all** students in designated grade levels (called cohorts) in participating schools, unlike other federal programs designed to increase college access for students who meet specified criteria.

The cohort approach recognizes that in schools with high rates of family poverty, all students are at greater risk of poor academic performance and low rates of college attendance (Howley and Bickel 2000; Howley, Strange, and Bickel 2000; and Guskey 1997). The GEAR UP approach of serving all students also allows services to be integrated into the school day and regular educational offerings, providing greater opportunities for academic assistance and education reform.

1.2 Goals of This Evaluation

This study looks at key interim outcomes.

Given the timeframe of this evaluation, the goal was to focus on student and parent outcomes near the end of eighth grade that were considered to be associated with an increased likelihood of attending postsecondary education after high school. The conceptual framework, figure 1-1, for the GEAR UP program guided the study design for the national evaluation. Within the context of the conceptual framework, the National Evaluation of GEAR UP had the dual purpose of describing the projects as they existed and evaluating their outcomes. Because the GEAR UP legislation is nonprescriptive about how to meet the stated goals, services provided by partnerships varied considerably. Brief lists of the general types of services that may be offered are shown in box 2 in figure 1-1. As shown in box 3 (a-d), interim outcomes are intended at the family, student, school and partner levels. Data were collected at each of these levels.

[4] Children from families with incomes at or below 130 percent of the poverty level are eligible for free meals (breakfasts, lunches and snacks) under the National School Lunch Program. Those with incomes between 130 percent and 185 percent of the poverty level are eligible for reduced-price meals. For the period July 1, 2000, through June 30, 2001, 130 percent of the poverty level was $22,165 for a family of four; 185 percent was $31,543 (*Federal Register*, vol. 65, no. 65 (April 4, 2000): 17620).

At the base of the outcomes study were 18 GEAR UP partnership projects. One GEAR UP middle school was selected and agreed to participate from each of these 18 partnerships. In addition, 18 non-GEAR UP comparison schools were selected and agreed to participate. An additional two projects agreed to participate in the case studies but not the outcomes study.

The outcome study comprises students from 18 GEAR UP schools and 18 non-GEAR UP schools.

The long-term outcomes for GEAR UP, which are shown in box 4 of the conceptual framework (figure 1-1), are increased rates of participation and success in postsecondary education. These long-term outcomes are the focus of the followup evaluation.

This report:

- Describes how GEAR UP projects are using their federal dollars (chapter 2),
- Looks at student and parent outcomes near the end of eighth grade (chapter 3),
- Looks at school-level process outcomes at the GEAR UP projects and partner schools (chapter 4),
- Describes the organizational structures and experiences of GEAR UP projects (chapter 5), and
- Discusses the future prospects for GEAR UP beyond the study period (chapter 6).

The core of this report focuses on the outcomes for the GEAR UP program for student preparation for college. As discussed in more detail later, the evaluation was unable to address the question about effective strategies because of incomplete information on services provided to individuals. We attempted to look at the outcomes of different services on students where complete data were provided. Because the analysis is limited to a small group of projects, this analysis appears in appendix I.

This report focuses on student preparation for college.

To capture a middle school perspective about postsecondary education, data were collected from and about a sample of students and their parents in late fall 2000. This represented the baseline measure for examining the outcomes of the GEAR UP projects. We followed up with these same students and their parents in spring 2002 when most were completing the eighth grade.

Data were collected at the beginning of seventh grade and end of eighth grade.

Two primary features of the GEAR UP program made it infeasible to use an experimental or random assignment design in this study (as would clearly be preferred given the research questions). First, GEAR UP projects are required by law to serve an entire grade level of students, so random assignment to treatment and control was not possible at the student level. Second, random assignment of schools within projects was not possible since many districts participating in the partnerships only had one middle school within their district. In addition, districts consciously selected the schools with the most need to participate in GEAR UP.

The study used a matched comparison group design.

Accordingly, the study used matched comparison schools to evaluate GEAR UP's outcomes. For each GEAR UP middle school in the sample, a middle school that was not receiving GEAR UP funds was selected for comparative purposes. The two schools were matched on the demographics of the students served and the communities in which they were located using the Common Core of Data (CCD). When possible, non-GEAR UP schools were located in the same school district as the GEAR UP schools. As in the GEAR UP schools, a sample of seventh-grade students was selected in the non-GEAR UP schools. The full complement of student-level data collected on GEAR UP school students was also collected on the non-GEAR UP school students. Analyses primarily examined outcome measures between the GEAR UP students and students from the non-GEAR UP group at the end of eighth grade.

The remainder of this report focuses on the GEAR UP partnership grantees and the outcomes for the students they served between fall 2000 and spring 2002. State GEAR UP grantees did not participate in the outcomes study because they can serve students at any age and are not required to continue providing services to the same students each year.

1.3 Methodology

A total of 20 partnership grantees were selected to reflect a variety of programmatic approaches.

The National Evaluation of GEAR UP began in fall 1999 just as the GEAR UP projects themselves were getting underway. A sample of 20 partnerships was selected and recruited. Projects were first categorized according to three strata: whether the project was located in a state with a state GEAR UP grant; whether the primary grant holder was a school district or postsecondary institution; and whether the project intended to provide the bulk of its services directly to students. Projects that were not planning to serve a new cohort of seventh-graders in fall 2000 were ineligible. Approximately one-third of the 164 first year partnership grantees did not have a seventh-grade cohort in fall 2000. Because the study was not about the program's implementation, projects that were not yet operational because they lacked a project director or had not yet started working with schools were excluded from the sample. During the selection process, every effort was made through stratification to include projects with different programmatic approaches and a mix of primary grant holders (i.e., school districts, colleges and universities).[5]

One middle school from each of the 18 GEAR UP projects was simultaneously selected with a comparison school.

The second stage in the sampling process was the selection of middle schools within each of the 18 participating projects.[6] Given GEAR UP program requirements, assigning schools randomly to GEAR UP projects was not feasible. Thus, the National Evaluation of GEAR UP used a comparison-group approach. Because more than one middle school could participate in each GEAR UP project, a GEAR UP middle school was simultaneously selected with a middle school in the same or nearby school district with

[5] Based on the programmatic approaches in their grant applications, grantees were categorized as interacting primarily with students directly, interacting primarily at the school level or interacting equally with schools and students.

[6] Two partnerships declined participation in the outcome study but did agree to participate in the case studies.

similar students but without GEAR UP.[7] A simple random sample of up to 140 students for whom parental consent to participate in the study was obtained was then selected for each sampled GEAR UP and comparison school. Table 1-2 summarizes the sampling rate for students in the national evaluation.

Up to 140 students with parental consent were randomly sampled from each middle school.

Table 1-2. Student sample selection at schools in the national evaluation

	Number
Seventh-grade enrollment fall 2000	9,121
Parent consent to participate obtained	6,941
Sampled	4,692

Chapter 2 compares the characteristics of sampled GEAR UP and non-GEAR UP students. GEAR UP and non-GEAR UP students are closely matched on the percentage of female, minority and low-income students; percentage of students with special needs; and percentage of students with English language deficiencies. These students and their parents were the basis for the longitudinal outcomes study. Because all types of GEAR UP projects are not represented in the study, the results of the outcome analysis are not generalizable to the full GEAR UP program. They are, however, representative of those projects similar to the ones that participated in the evaluation.

Information for this report comes from several different sources and includes the following:

- **Descriptive information from site visits.** During each of the first three years of GEAR UP, researchers conducted site visits to the 20 partnerships to explore the nature and status of the program. During those visits, site visitors asked project, district and school personnel as well as partners about the design and approach of the GEAR UP project; the partnerships, program administration and activities that had been undertaken or were planned; the project staffing; and the role of the project in education reform at the school. Site visitors asked project directors what activities were underway to enable comparable efforts to continue after the end of the grant. Site visitors also conducted group interviews with students, parents and teachers.

Three rounds of site visits were conducted to provide information on program operations.

- **Outcome information about participating students and their parents.** Data were collected on students at 18 GEAR UP and 18 non-GEAR UP comparison schools through student records and student and parent surveys, as well as records of students' and parents' participation in GEAR UP-sponsored activities. GEAR UP

Data were collected from students, parents, student records and transcripts and project activity records.

[7] Data from NCES' Common Core of Data (CCD) were used to select the "best" school matches based on student demographics, percentage of students eligible for free or reduced-price lunches and the grade span of the school. Geographic proximity was also taken into consideration in those instances when a comparison school was not available within the same school district. Later analyses showed that students were closely matched. Appendix A, contained in this volume, discusses the comparison selection process, and appendix E, discusses the removal of baseline differences.

schools in the evaluation were connected to 18 of the 20 sites visited. Surveys were conducted early in seventh grade with both students and parents and then again near the end of eighth grade. Data on participation in GEAR UP activities were collected continuously between September 2000 and June 2002 on sampled GEAR UP students and their parents. Not all projects provided these data.

Annual Performance Reports provided information about all GEAR UP partnership grantees.

- **Information from the 2002 GEAR UP Annual Performance Reports (APRs).** The APR provided aggregate data on all GEAR UP projects. Data on the number and demographic composition of students served were used to determine the comparability of the evaluation's sample of projects to the GEAR UP program overall. All GEAR UP grantees funded before April 2002 submitted APRs for the period May 2001 to April 2002.

Because of high mobility rates, this report focuses on students who remained in the same school throughout the study period.

Schools that draw from communities with high rates of poverty often have high mobility rates as well. While some of the schools in the evaluation reported relatively stable student populations, especially those schools located in rural areas, other schools reported annual student turnover rates of 50 percent or greater. For this reason, in the national evaluation, many students who started the seventh grade in a GEAR UP school did not finish seventh grade—or start the eighth grade—in the same school. By spring 2002, 16 percent of the students in the study left the school they attended in fall 2000. (See appendix A for more information on the handling of students leaving sampled schools.) The mobility figures are similar for students in both the GEAR UP and non-GEAR UP schools. Students who were initially sampled in the fall of their seventh grade but who were not enrolled in the same school in the spring of the eighth grade were not included in the analyses reported herein.

An analysis of students who left their original sampled school before the end of eighth grade showed that these students differed on specific characteristics from those who remained. (See appendix B for a full analysis of students who left their sampled schools.) By controlling for resulting baseline differences between those students who remained and those who left their sampled schools, the validity of the findings in this report is not affected.

1.4 Scope of Report

The legislation establishing GEAR UP mandated an evaluation of the program. This report is the final product of the National Evaluation of GEAR UP, which began in fall 1999. The report describes the program, as implemented, and examines the outcomes of GEAR UP in middle school on early indicators of future postsecondary enrollment. This report does not include an analysis of the outcomes of specific early intervention services on interim outcomes since complete service records were not obtained from all projects. Appendix I does provide an analysis of services on a limited number of projects and students where complete service information was obtained.

1.5 Limitations

A number of factors in the evaluation design lead to some important limitations on the strength of conclusions that are drawn in the report: It was not a randomized experiment; the set of cooperating grantees and schools is a small purposive sample, leading both to concerns about generalizability and power to detect small effects—particularly schoolwide effects such as curriculum changes and the resulting shift in course-taking patterns; the comparison schools could not be matched on historical college attendance rates, as would have ideally been desired; and because service provision started prior to baseline data collection in the seventh grade, it was not possible to remove all seventh-grade differences between the two sets of students without simultaneously removing some of the effects of early information services. More detail on these limitations is provided below.

This study can report only on "interim outcomes" of students and their parents: increased knowledge, improved behavior and increased expectations. The GEAR UP students had not yet completed high school so the longer term outcomes of increased postsecondary enrollment and completion could not be obtained. The program had not been in effect long enough to serve students from the seventh through the 12th grade and into college.

The information for the evaluation comes from site visits, surveys of students and parents and school administrative records, including student transcripts for a sample of GEAR UP middle school students and from a matched comparison group of non-GEAR UP middle school students. Because GEAR UP projects were newly funded in 1999, the selection of sites for this evaluation was limited to those projects that were up-and-running within the first six months after receiving their awards. Matching was done at the school level and involved a limited set of demographic type variables. It was not possible to match on historical postsecondary education pursuit rates because this information is not available at the middle school level. Only a small number of schools (18 GEAR UP and 18 comparison) were involved in the study in order to allow in-depth reporting on the implementation process. The significance levels of the statistical tests between the two groups are fully adjusted for the small number of schools in the study.

The main substance of the report involves statistical analyses of differences between the GEAR UP and non-GEAR UP school students and their parents. As noted above, these comparisons adjust for some, but not all, of the baseline differences between the two groups. Because the GEAR UP programs were already active in fall of 2000 before the baseline measurements were collected, some discretion was required in deciding which baseline differences should be controlled (removed) through adjustment techniques. Both students and parents were surveyed in the late fall and early winter of seventh grade (2000–01 school year) after the start of the GEAR UP program. The seventh-grade data showed that the GEAR UP projects had been very active in the early fall, holding GEAR UP kickoff convocations with students and parents, taking students on field trips to local colleges and providing other services.

On the other hand, grant applications and site visit evidence showed that school districts generally began their GEAR UP projects in schools with the greatest proportion of at-risk students. In fact, survey, transcript and administrative records data showed that GEAR

UP schools were less committed to the educational process and had somewhat higher signs of socioeconomic distress. Thus a paradoxical pattern was encountered in which students in GEAR UP schools at the time of the seventh-grade surveys had less positive attitudes about school in general and worse study habits, but had been exposed to substantially more information about postsecondary education options than their non-GEAR UP counterparts. Judgments had to be made about which data elements reflected GEAR UP early intervention activities (therefore not appropriate for use as baseline covariates) and which could still serve as baseline covariates. These judgments were made before looking at eighth-grade data. Variables were identified that were very unlikely to be affected by GEAR UP in this short period of time, and other variables were identified that could be affected.

The following are likely to be the result of early GEAR UP services and using these as covariates would covary out the GEAR UP program effect we want to measure:

- GEAR UP students reported more frequent meetings with adult mentors such as a Big Brother or Big Sister,
- More GEAR UP students reported having a one-on-one counseling or advising session about getting ready for college,
- More GEAR UP students reported attending a class or meeting about getting ready for college,
- More GEAR UP parents reported attending meetings about college preparatory curricula,
- More GEAR UP parents reported finding out about child participation in the kinds of activities sponsored by GEAR UP through letters or written notices,
- More comparison parents reported having no information about college entrance requirements,
- More GEAR UP students had at least heard of two-year and community colleges,
- More GEAR UP parents reported that their seventh-graders had visited a college campus,
- More GEAR UP parents reported attending meetings about the types of classes their children should be taking to get ready for college, and
- More GEAR UP parents reported receiving written materials of college preparatory curricula.

On the other hand, the following are not likely to be the result of GEAR UP, at least not in the first few months of the program, and are used as covariates:

- Fewer GEAR UP parents perform volunteer services in the schools,
- Class skipping by minority students is more common in GEAR UP schools,
- GEAR UP students spend more time watching TV and playing video games,
- Comparison students more strongly affirm the importance of hard work in school,
- White mobility is higher in GEAR UP schools,
- Adult educational attainment among mobile families is lower in GEAR UP schools, and
- Student-parent conversations among white families about community, national and world events were less common in GEAR UP schools.

Another important part of the evaluation was to describe the actual interventions and to assess the prospects for the sustainability of the program's activities after federal funds are no longer available to these grantees. These goals required intensive onsite activities that could only be done at a small number of schools due to the associated costs. Thus, the school sample size is small. Eighteen schools from GEAR UP projects and 18 non-GEAR UP comparison schools participated in the evaluation. The analytic procedures used in the report fully adjusted significance levels for the small number of study schools. There is, however, the possibility that effects were missed because the process for adjusting significance levels sharply reduced the statistical power. The reduction in statistical power was particularly acute for school-level outcomes because the sample size (36 schools) is so small. Throughout the report, an "association" is discussed only if the supporting hypothesis test was significant at the 5 percent level, meaning there would have been only a 5 percent chance of finding the difference by chance. There are some associations discussed when the significance level of the test was at the 10 percent level. These are qualified by the phrase "modest evidence." If no evidence was found even at the 10 percent level, the phrase "no evidence" is used.

The statistical power is reasonably good for self-reported student and parent data but poor for school-level data because of the small number of schools. Power is also poor for school reported student-level data. Although course taking is analyzed at the student level, it is strongly influenced by school-level decisions about course offerings, thereby resulting in low power

Due to the limitations in the selection of study schools, the small number of schools in the sample, the procedure for selecting matching comparison schools and the timing of baseline measurements, the findings in this report are portrayed as merely suggesting effects rather than as proving them. The language of the report generally refers to associations, although these associations are adjusted in ways that should give them better inferences about causal relationships than would be the case with simple raw associations.

1.6 Organization of This Report

An Executive Summary is provided at the beginning of this volume. The remainder of this volume is organized into five chapters. Chapter 2 provides descriptive information about GEAR UP students in the national evaluation, their parents and the services they received while in middle school. Chapter 2 also provides descriptive information about non-GEAR UP students and the services offered at their middle schools. Outcomes for GEAR UP middle school students and their parents are the focus of chapter 3. School-level outcomes for GEAR UP are covered in chapter 4 and look at changes that took place in GEAR UP schools since the implementation of the project. Particular focus is given to changes in academic curriculum, professional development opportunities and teachers' attitudes. Chapter 5 provides background information on the GEAR UP partnerships by describing the organization and management of the projects participating in the national evaluation. The chapter looks at the relationship between partners, including their efforts to communicate and collaborate. The last chapter of the report, chapter 6, looks at the projects' transitions as the students moved from middle school into high school and evidence that the projects will continue beyond the end of their federal GEAR UP grant. Appendix A details the measurement methodology for the National Evaluation of GEAR UP. Appendix B describes how the student sample was drawn, how missing data were handled and how variances were estimated.

Additional information can be found in the appendices.

A detailed description of the development of outcome indices, including the College Orientation Index, is presented in appendix C. A validation of the College Orientation Index using the National Education Longitudinal Study[8] appears in appendix D. Because a simple comparison of change across two sets of matched schools was not possible, appendix E details the process undertaken to remove any differences between the two groups of students that existed at baseline. A simulation study using hierarchical linear modeling (HLM) is presented in appendix F. Appendix G describes the method used for analyzing the student transcript data. An analysis of standardized test scores is presented in appendix H, and appendix I describes the method for analyzing program activity records. The glossary of variables is contained in appendix J. Appendix K contains the data collection instruments used for the study.

[8] The National Education Longitudinal Study (NELS) is a study of the educational experiences and transitions of students conducted by the National Center for Education Statistics. NELS began with a sample of eighth-graders in 1988 and conducted followups with these students in 1990, 1992, 1994 and 2000.

2. Middle School Students and Their Parents

At the time the GEAR UP legislation was written, there was growing concern that students were not being adequately prepared for the job market, which increasingly required education beyond high school. The literature pointed to several important factors in addressing the problem of students not being prepared to succeed in the information economy. Studies showed that to change student behavior one needed to intervene early in their education careers. Other studies found that student success was linked to enrollment in gateway courses such as algebra (Atanda 1999; Oakes 1990). Also important were the positive results achieved by the I Have A Dream Foundation, which adopts a cohort of students at an early age and promises funds for college if the youths stay in school and prepare academically for college. School reform was also a central issue at the time GEAR UP was designed. This led to the curriculum reform and professional development features of GEAR UP that set it apart from other early intervention programs funded by the U.S. Department of Education.

GEAR UP's goal is to increase postsecondary attendance and success among low-income students.

The overarching goal of the GEAR UP program is to increase postsecondary attendance and success among low-income students. The GEAR UP legislation also stipulates that funded partnership projects must begin providing services to students no later than the seventh grade and follow those students through high school. At the time the first grants were awarded in fall 1999, projects could receive federal funding for a maximum of five years. Funding was later extended to include a sixth year. Because the vast majority of projects were designed to begin with an initial cohort of incoming seventh-graders, the sixth year of funding meant that projects could provide services to these students through all of their high school years before the federal funding ran out. For later cohorts, projects would need to secure funding from other sources to serve those students through the 12th grade.

Projects serve cohorts of students beginning no later than seventh grade.

Because the initial years of the GEAR UP program were focused on middle school students, this chapter lays the foundation for determining the outcomes for GEAR UP on these students by addressing the following questions.

The evaluation focuses on outcomes during middle school.

- What are the characteristics of middle school students who are being served by GEAR UP partnerships? How well do the GEAR UP students who participated in the national evaluation represent middle school students overall? How similar are GEAR UP students to students in non-GEAR UP schools in the national evaluation?

- What services are the national evaluation of GEAR UP students receiving? Do students in the non-GEAR UP schools in the national evaluation receive services similar to those provided in GEAR UP schools?

- What services do parents of national evaluation of GEAR UP students receive?
- How frequently do GEAR UP students and their parents participate in GEAR UP-sponsored activities?

Projects were designed to meet the needs of the population they were serving.

With the target low-income population in mind, the GEAR UP program was designed with enough flexibility to permit a project to develop models of service that fit the needs of individual schools and their students within the cohort structure. The GEAR UP program and those projects in the national evaluation served a higher percentage of minority students than the average middle school in the United States.

Projects assessed student needs and targeted services accordingly.

The varying intensities of services and differences in the services provided an opportunity to understand how projects serve a cohort of students. Most GEAR UP projects planned their offerings so that some services, such as remedial services, were not provided to all students. In addition, participation in many widely reported GEAR UP services was limited, voluntary or both. Most of the schools in the study did not spend resources solely on services that could be provided equally to all students. Rather, their programs were designed to provide services to those students and parents who were targeted or who volunteered to participate. These projects typically assessed the students to determine their individual needs and how best to serve them.

Professional development and curriculum reform efforts were undertaken by some projects.

In addition, only the projects having a widespread effect on instruction, through reform of core curricula or extensive in-service training to improve instruction, were likely to provide a service that affected an entire cohort at a relatively intense level. One of the projects in the national evaluation was offering a new curriculum in a core academic subject that affected instruction for all students. A few additional projects were embarked on reforms that could have affected curricula for all or could have affected all students through policy changes in the future, such as persuading a district to mandate eighth-grade algebra for all students or by encouraging students to explore career choices and use instructional software programs.

2.1 Student Characteristics

In 2001, GEAR UP served about 3 percent of middle school students.

In its third year of operation, GEAR UP was reaching roughly 3 percent of the middle school population across the United States. Nationally, there were more than 10.8 million students enrolled in sixth through eighth grades in fall of 2000 (U.S. Department of Education 2003a). For the school year 2001–02, about 220,000 middle school students were being served by 243 GEAR UP partnerships.[9]

[9] Because some students had already moved on to high school, an additional 80,000 GEAR UP students who were in high school were also participating in GEAR UP-sponsored activities.

Table 2-1 compares the demographics of GEAR UP and non-GEAR UP middle school students participating in the national evaluation and lays the foundation for discussing GEAR UP's outcomes for students and parents in the next chapter.[10] The table also compares the characteristics of students in GEAR UP nationally and in all public middle schools with those GEAR UP and non-GEAR UP students in the national evaluation. Because the sites selected for the evaluation are a subset of the GEAR UP projects, this section establishes how similar the students in the national evaluation were to GEAR UP students program-wide. This section also looks at how students being served by GEAR UP compare to middle school students nationally.

Table 2-1. Comparison of characteristics of GEAR UP and non-GEAR UP students in the national evaluation

Characteristics	All public middle schools (%)	GEAR UP program nationally (%)	National Evaluation of GEAR UP[a]	
			GEAR UP middle schools (%)	Non-GEAR UP middle schools (%)
Gender				
Male	51	50	50	50
Female	49	50	50	50
Race/ethnicity				
African-American	17	30	25	19
Asian	4	3	3	6
Hispanic	16	36	31	25
Native American	1	5	7	2
White	62	26	35	48
Special programs				
IEP[b]	13	11	12	10
LEP[c]	8	12	12	8
NSLP[d]	37	N/A[e]	65	62

[a] Comparison between GEAR UP and non-GEAR UP students who remained in the evaluation through the end of eighth grade.

[b] Individualized Education Program

[c] Limited English Proficient

[d] National School Lunch Program

[e] Not available, however, to be eligible, at least 50 percent of the students in the school must be eligible for free or reduced-price meals.

SOURCE: 2001 Common Core of Data, 2001–02 GEAR UP Annual Performance Reports, and 2001–02 National Evaluation of GEAR UP student record data.

[10] Methods used to control for baseline differences, such as those discussed here, are presented in Appendix E, Removal of Baseline Differences.

In 2002, 74 percent of GEAR UP students nationally were minorities.

Although non-GEAR UP schools in the national evaluation were selected based on their similarity to GEAR UP schools, by the end of eighth grade, differences in attrition (mobility) resulted in the differences shown in table 2-1. (Because a perfect match during sample selection was not feasible, appendix E describes the methods used to control for baseline differences between the two groups.) While there was virtually no difference in the percentages of boys and girls, GEAR UP partnerships served a higher percentage of minority students than the national average for middle school students. (See table 2-1.) Nearly two-thirds (65 percent) of GEAR UP students in the national evaluation were members of minority groups compared to roughly three-quarters (74 percent) of the middle school students participating in GEAR UP during 2001–02. By comparison, minority students made up only 38 percent of the middle school population nationally (U.S. Department of Education 2003b). More than one-half (52 percent) of the non-GEAR UP students in the national evaluation were members of minority groups.

The GEAR UP students in the national evaluation were fairly representative of the GEAR UP program.

GEAR UP serves a needier population than the typical middle school.

The schools participating in GEAR UP served a needier student population than the typical public school in the United States during 2001–02. This is primarily because the GEAR UP legislation requires that 50 percent or more of the students at participating schools qualify for free or reduced-price lunches under the National School Lunch Program (NSLP). Nationally, nearly 17.4 million students (37 percent) were reported as eligible for free or reduced-price meals during 2001–02 (U.S. Census Bureau 2000). Many of the schools in GEAR UP, however, had NSLP eligibility rates well in excess of 50 percent of their student populations, with GEAR UP partnership projects reporting that 65 percent of their students, on average, were eligible for NSLP that year. In the two sets of schools, similar percentages of students were eligible for the NSLP (65 percent GEAR UP versus 62 percent non-GEAR UP).

Students who have been identified as having special educational needs are required to have individualized education programs (IEPs) to monitor their education progress. The percentage of students with IEPs being served by GEAR UP was similar to the percentage of students nationally with IEPs. Approximately 13 percent of all students nationally had IEPs compared with 11 percent of the GEAR UP middle school students nationally (U.S. Department of Education May 2003a). Approximately 10 percent of the students attending non-GEAR UP schools in the national evaluation were identified as having special educational needs. Comparatively, 12 percent of the GEAR UP students in the national evaluation had IEPs.

During 2000–01, the most recent year for which data are available, more than 870,000 middle school students nationally (8 percent) were identified as limited English proficient (LEP) (U.S. Department of Education October 2002). During 2001–02, 12 percent of GEAR UP students program-wide needed additional English language instruction. In the national evaluation, 12 percent of GEAR UP students and 8 percent of non-GEAR UP students were identified as having limited English skills.

2.2 Services Provided to Middle School Students

GEAR UP and non-GEAR UP students participating in the national evaluation were asked about the types of activities they participated in during the eighth grade. Table 2-2 shows the percentage of students self-reporting participation in each type of activity. Compared to non-GEAR UP students, GEAR UP students reported receiving more mentoring and one-on-one counseling about high school and college. GEAR UP students were also more likely to attend classes or meetings about getting ready for college and were more likely to visit a college campus by the end of eighth grade than non-GEAR UP students. GEAR UP students, however, reported receiving less tutoring in mathematics and homework help than their non-GEAR UP counterparts.

GEAR UP students were more likely to visit college campuses and receive information about getting ready for college.

Information on the full range of activities and services undertaken by GEAR UP projects participating in the national evaluation was obtained through detailed activity records as well as from the three rounds of site visits to the projects conducted in spring 2000, 2001 and 2002. Each of the projects participating in the national evaluation was asked to maintain records on all of the services they provided to students and parents between September 2000 and June 2002, which covers school years 2000–01 and 2001–02. Those projects that provided services to students during the intervening summer were also asked to collect information on all services they provided during that time period. (Sample copies of three types of activity forms used can be found in Appendix K, Data Collection Instruments.) Projects were asked to provide a general description of each activity that included:

- Type of activity (e.g., tutoring, field trip, workshop),
- Subject matter covered (e.g., English, college financial aid),
- Timing of the activity (e.g., after school, weekend),
- Number of students or parents attending each activity,
- Leader of the activity (e.g., classroom teacher, project staff), and
- Duration of the activity (e.g., days, hours, minutes).

Few projects provided detailed records of the services provided to students although all were asked.

The projects were asked to provide the above information about each student activity they sponsored and which students attended the activity. The same information was requested for all project-sponsored parent activities.

Although the projects were asked to report information on all activities sponsored by their GEAR UP grant, the level of recordkeeping varied considerably across projects. Site visit information and detailed discussions with projects revealed that many sites provided incomplete data on the extent of their activities. (See Appendix I, Methodology for Analyzing Program Activity Records, for a full discussion of the completeness of the participation data obtained from sites and limitations in analyzing these data.)

Because the level of recordkeeping varied considerably, only limited analysis of services is possible.

Table 2-2. Percent of students self-reporting participation in various activities

Activities	GEAR UP students	Non-GEAR UP students	Difference
Received homework help	43	47	-4*
Received tutoring in math	28	32	-4*
Received tutoring in English or language arts	19	16	3
Received tutoring in science	15	15	0
Met with an adult mentor such as Big Brother or Big Sister	29	23	6*
Attended one-on-one counseling or advising session about getting ready for high school	46	40	6*
Attended one-on-one counseling or advising session about getting ready for college	34	22	12*
Attended a class or meeting about getting ready for college	50	29	21*
Attended a class or meeting about how to study better	23	20	3
Attended a class or meeting about possible careers after school completion	56	55	1
Visited a college campus	59	34	25*
Visited a job site or talked with someone about their job	48	48	0

*Statistically significant at the 0.05 level.

SOURCE: National Evaluation of GEAR UP Eighth-grade Student Survey, 2002.

More than 2,700 GEAR UP events took place across 19 GEAR UP sites between September 2000 and June 2002. Most events occurred during the school day.

Across all projects in the national evaluation (including those projects providing incomplete information), the vast majority of GEAR UP students participated in at least one activity during the study period. More than 80 percent of the approximately 1,800 GEAR UP students in the national evaluation were reported to have participated in more than 2,700 GEAR UP events between September 2000 and June 2002. (The actual number of events per student is probably higher because not all data were reported by all projects.) These activities were primarily led by classroom teachers or GEAR UP staff but were sometimes conducted by paraprofessionals, school counselors, other school professionals, college faculty, college students or a community, business or parent volunteer. In general, most student activities took place during school or directly after school. A few were held before school, in the evenings or on the weekends. A few projects provided services to students during the summer break primarily between the first and second years of the program.

Although the services provided by grantees varied considerably, the basic services offered to students and parents fell into the following basic categories:

- **Academic Support.** These services were supplemental services to help students improve their academic performance in their classes or prepare for standardized tests.

- **Guiding Students to College.** These services consisted of two types:

- **Career Oriented.** These services focused on raising students' awareness of career opportunities and determining what their interests and skills were.

- **College Information.** These services focused on providing students and parents with information about college entrance requirements and the availability of college financial assistance.

- **Other Activities.** These services tended to be more enrichment types of activities such as field trips to museums or theatrical performances. Projects saw these activities as helping broaden student and parent life experiences.

GEAR UP activities frequently covered multiple topics.

GEAR UP activities frequently covered two or more of these categories at any one event. For example, projects combined career information with information about college preparation and college financial assistance. Other combinations included linking academic support and counseling about college majors. Although such linkages were frequently made at the project level, the discussion that follows focuses on the individual activities.

Because it was expected that non-GEAR UP schools might offer similar types of services to students, visits were made to non-GEAR UP schools each spring at the same time visits were made to GEAR UP projects and schools. The purpose of the visits to non-GEAR UP schools was to obtain information about the schools, the students attending the schools and the services available to students and their parents. Particular interest was paid to those services that may have been similar to the services provided at the GEAR UP schools. Although information on the types of services available to students and parents was obtained during the site visits, the actual utilization of those services by non-GEAR UP students was not collected (except through self-reporting in the student survey).

Many non-GEAR UP schools offer similar services as GEAR UP schools; however, data on utilization of services are not available.

Based on information obtained during the site visits, all of the non-GEAR UP schools provided at least some supplemental services to students outside of the school's regular curriculum. Much like the services at GEAR UP schools, the services available at the non-GEAR UP schools were diverse and varied widely from school to school. The types of services fell into the same general categories as those offered by the GEAR UP projects.

Academic Support

Academic support services, such as tutoring, were the most common.

Activities that provided academic support to students were the most prevalent type of activity across the GEAR UP projects that submitted detailed participation records. This was consistent with information obtained during site visits to all projects in the national evaluation. Academic support activities at GEAR UP schools took the form of:

- **Tutoring.** This was the most prevalent type of academic support. It was provided mostly as small-group assistance, but it was also provided in one-on-one sessions. Computer-assisted instructional

laboratories were also used as tutorials by providing students an opportunity to practice specific skills as well as helping students prepare for standardized tests. Tutoring was primarily offered during or immediately after school. In a few cases, projects offered tutoring in the morning before the school day began.

A few projects operated after-school or Saturday academies that combined tutoring with other assistance such as career exploration.

- **After-school or Saturday academies.** A small number of the sampled projects operated either an after-school or a Saturday component to their GEAR UP project that combined tutoring or other academic assistance with career exploration, interest clubs or recreational activities. These programs were most commonly called clubs, after-school academies or Saturday academies. After-school programs were typically held several times a week, and Saturday programs were held from once a month to every Saturday. Most were led by GEAR UP staff, paid teachers or social service professionals. Some of the programs were extensions of offerings available before GEAR UP (under 21st-Century Schools, Title I or other auspices). These programs typically were voluntary, and sites reported that participation levels were generally lower than expected.

- **Summer programs.** Academic assistance and college awareness were merged in many of the GEAR UP summer programs. In their first year, the GEAR UP partnership projects had plans for ambitious summer offerings. Projects that had only begun to offer student services in the second half of that year held summer programs that were considerably more intensive than the school-year services. Some schools offered primarily remedial education, others provided enrichment programs that combined instruction in core subjects with trips, hands-on activities, cultural events and recreation. Services were offered at colleges, middle schools and community agencies. They were planned for three or more weeks. Projects reported that most of the summer programs attracted only a limited number of students. Transportation was a major problem in some projects. Projects did not attract as many students as anticipated, even when students could participate at a neighborhood school or community center.

Transportation was a problem for after-school activities.

When services were provided outside of regular school hours, many projects indicated during the site visits that they sometimes had difficulty attracting students to tutoring sessions and to some other activities. In focus groups, students indicated that transportation was a problem for after-school activities. Parents' work schedules often did not permit them to pick up their child after school. Transportation issues were particularly prevalent in the rural communities.

Other activities sometimes drew students away.

Competition from other school-sponsored activities and other nonschool activities also drew students away from GEAR UP and reduced participation levels. A few students also said that they were often just too tired at the end of the school day to engage in additional academic-related activities. Despite these difficulties, some projects in the evaluation tutored large numbers of students. The tutoring in these projects was generally required

for students at risk of poor performance and frequently occurred several weeks before the administration of district- and state-required standardized tests.

In their original designs, many of the projects planned to provide one-on-one tutoring to most or all of their students, with much of it to be provided by college students or other volunteers from partner organizations or the community. During the site visits in 2001, GEAR UP project staff expressed frustration at being unable to find adequate numbers of volunteer tutors. The project staff said they had difficulty attracting and retaining student volunteer tutors because of scheduling conflicts and transportation needs. School policies regarding volunteers in conjunction with the limited availability of qualified volunteers further hindered projects' abilities to capitalize on their plans. The data from the activity reports support this claim, indicating that little tutoring was conducted by outside volunteers.

Projects paid tutors to address shortage of volunteers.

Because of these problems, by spring 2002, many projects had turned to paid tutors for fulfilling their tutoring needs. Projects frequently hired regular teachers to work before or after school or on Saturdays. They also used GEAR UP project staff and student teachers as tutors or paid a limited number of college students who then worked part time (e.g., through the college work-study program). In one case, the project used high-performing high school students to tutor the middle school students during the school day. The high school tutors received a stipend from the GEAR UP project.

Teachers frequently recommended tutoring for students with academic deficiencies.

Across the projects in this evaluation, the supplemental services of academic support, which include tutoring, were provided to students with academic problems or to those who had performed poorly on standardized tests. Most projects did not have the staff needed to provide such support to all participants with academic deficiencies. Teacher recommendations played a major role in deciding who received academic support, both during school hours and out of school.

Tutoring was provided in the classroom to individuals or small groups.

The site visits indicated that academic support during school hours was more likely than out-of-school academic support to focus on a specific course or on preparation for standardized tests. Teachers used a tutor in the classroom to work with individuals or with small groups of students who needed more assistance with a specific lesson. In some cases, students or whole classes needing additional help used a GEAR UP-supported computer laboratory to practice new skills. A few projects offered tutoring during lunch or study hall periods, when students could receive more individualized attention. Only a few projects indicated that students were taken out of classes for tutoring. When this occurred, the students were excused from physical education or elective classes, not core academic classes.

Tutoring remained at the core of GEAR UP services.

More than any other type of GEAR UP activity, tutoring began and remained at the core of GEAR UP services for students. As the projects matured over the academic years studied, schools made program changes to better fit their specific needs. As grantees implemented their GEAR UP projects, they modified their initial designs to meet the specific needs of their students. Even with these modifications it was clear from the participation data reported and site visits that tutoring was the primary activity provided to students.

Projects shortened and targeted their summer programs.

After experiencing lower than anticipated attendance during the first summer, 2000, the projects planned less remedial instruction and fewer weeks of service for the following summer. Several of the projects in the evaluation provided services to students during summer 2001, but these sessions were shorter than in the previous year. Services focused on academics, but they also included field trips and other cultural events. Even with these changes, attendance was considered by GEAR UP staff to be lighter than anticipated. Most programs, however, expected relatively small numbers of students—up to one-third of their students. A few projects established eligibility criteria as well and planned to enroll only those students who had demonstrated good behavior during the school year or whose parents actively enrolled them in the session.

Tutoring was also the most common service at non-GEAR UP schools.

As with the GEAR UP schools, the most common service reported across the non-GEAR UP schools was academic support. Nearly all of the schools provided this type of service. These services included after-school tutoring and homework hotlines as well as the two TRIO programs, Talent Search and Upward Bound, which also serve middle and high school students.[11] Several non-GEAR UP schools also reported offering special programs for academically talented students such as the gifted and talented programs. Two other non-GEAR UP schools reported offering either computer programming or journalism classes to academically talented students. Another school reported that it offered a special summer remediation program to students to help them catch up and prepare for the coming year.

Guiding Students to College

A variety of activities were designed to encourage college planning.

The projects in the national evaluation provided a variety of activities aimed at encouraging students to plan for college. Depending on the project, these services focused either on career opportunities or information about college.

GEAR UP projects sponsored **career-oriented** activities such as career fairs that focused on opportunities like career academies, interest inventories and individual development plans. **Information about colleges** was typically provided through college fairs. Both career and college fairs, which took place in almost all projects, were generally schoolwide events. These fairs involved posters and information tables; visits and presentations from college officials, college students and business representatives (some of whom were project partners); special games; and other college-related activities. Some fairs occurred on a single day, while others involved activities spread over a week or a month. Sometimes, GEAR UP projects operated these fairs independently, but more often these fairs were jointly sponsored by GEAR UP and another program in the school. This co-sponsoring of activities helped GEAR UP projects stretch their resources so that other activities could be provided.

[11] TRIO refers to several federal programs known officially as Federal TRIO Programs. The three original federal programs from which the "trio" programs derived their name were Upward Bound (1964), Talent Search (1965) and Student Support Services (1968). With the passage of the 1998 *Higher Education Amendments*, the number of programs authorized under this legislation increased to eight. Although the term TRIO (in all caps) is not an acronym or initialism, it has been retained to avoid confusion.

All of the projects in the study held at least one college visit, and many organized multiple visits over the length of the study. In fact, as their programs matured, more schools organized visits to college campuses in 2001–02 than in the earlier year of the evaluation. Students who participated in the focus groups reported they greatly "enjoyed" the college visits and were considering college more seriously as a result of the visits.

All GEAR UP projects held at least one college visit.

Several project staff indicated that GEAR UP was responsible for starting college visits for seventh-grade students. Before GEAR UP, such visits were not held or were only for eighth-graders. In the first year of GEAR UP, when implementation was just beginning, it was typical for all students in a grade to go on a single college visit, usually to a partner college for a half or a full school day. Over the next two years, there was more diversity in visits. In some projects, all students went on one visit, but selected, smaller groups of students went on additional college visits. These students typically were selected based on a first-come, first-served basis, but sometimes participation was based on recommendations from teachers or others.

Prior to GEAR UP, college visits were restricted to eighth-graders.

Each year, the projects visited a wider variety of postsecondary institutions.

More than one-half of the non-GEAR UP schools visited provided information about college to students and parents. A few of the schools reported that general information about colleges was typically provided to parents through college nights. A few other schools provided more intensive, specific information through college counseling sessions. One school offered a college planning workshop for students and parents. A few of the middle schools took students on visits to college campuses, and one other middle school invited college recruiters to the school to talk about their college and campus life.

The level of college information varied widely across non-GEAR UP schools.

Information about future career opportunities or options was also discussed with students at non-GEAR UP schools. About one-half of the non-GEAR UP schools provided career exploration opportunities to their students. These opportunities came in a variety of forms, including career education classes, career days or guest speakers. A few schools provided one-on-one career counseling to students or conducted career assessments. Only one school provided students with the chance to visit job sites and learn firsthand about specific occupations.

About half of the non-GEAR UP schools provided information about careers.

Other Activities

In addition to college trips and career fairs, many of the GEAR UP projects held a variety of **special events** that were seen as opportunities to expand the horizons of program participants. Project staff and teachers spoke about the limited experiences most of the students had, stating that many students and their parents had never traveled outside their neighborhoods or communities. Special events included trips to theatrical performances on college campuses, museum exhibits and places of employment. Some other common types of special events were GEAR UP program orientation sessions, awards assemblies and engagement in community service.

Special events were planned to expand experiences of students and parents.

Special events were generally voluntary; therefore, only relatively small numbers of students participated in any single event. A few projects took small numbers of students on major trips to distant cities, such as Washington, D.C. These exceptional trips were usually a reward for special activity or behavior (e.g., participating in an essay contest). In one project, two eighth-grade students were selected to travel to Japan during the

Special events were voluntary and generally limited to a few individuals.

summer as part of a cultural exchange program. Projects varied considerably on the number of special events they provided.

Volunteer mentors were difficult to find.

Most of the GEAR UP projects in the evaluation planned to provide volunteer one-on-one **mentoring** to all participants, and, as with tutoring, the inability to find volunteers made projects reconsider that plan. By the third year of the grant, only a small number of students had participated in mentoring, according to reported participation records. This is consistent with site visit reports.

GEAR UP staff were the largest source of mentors.

Where mentoring did take place, GEAR UP project staff were the largest source of mentors. An increasing number of projects gave up on providing one-on-one mentoring to students, or they provided mentors to only a small percentage of students who requested them or were referred by teachers or others. Other projects used college students or adult volunteers to serve as mentors with a small group of middle school students. Some project directors felt that tutoring had results similar to those of mentoring.

Non-GEAR UP schools also provided enrichment activities.

As with the GEAR UP schools, nearly all of the non-GEAR UP schools offered a wide range of other support services to students. These fell primarily into two categories: enrichment and intervention. The enrichment activities included academic clubs and recognition for academic achievement. The intervention services were in the form of dropout prevention programs and self-esteem trainings. Two of the non-GEAR UP schools offered mentoring to students. The mentors were local college students who met periodically with a small number of students recommended for the program. The college mentors typically provided tutoring help as part of their mentoring.

GEAR UP schools offered more and a wider variety of services to students than non-GEAR UP schools.

While similar types of activities were found in both GEAR UP and non-GEAR UP schools, the number of those services across schools appears dramatically different between the two types of schools. Based on information gathered from school staff, individual GEAR UP schools tended to offer a wide variety of services to students, while the non-GEAR UP schools offered far fewer services.

2.3 Services Provided to Middle School Students' Parents

Parents did not participate in as many activities as students.

GEAR UP funds can also be used for activities designed to increase parental involvement. GEAR UP's parent activities and services were analyzed through site visits and activity records. The largest difference between GEAR UP student and parent services across sites is the extent of services. More students than parents actively participated in GEAR UP, and students participated in many more activities than their parents. This confirmed what projects reported, i.e., that they provided more student activities in part because they had difficulty getting parents to attend. (Similar information about services provided to parents at non-GEAR UP schools was not collected.)

Although a smaller part of GEAR UP, projects continued to try to engage parents.

Site visits found that parent services were a smaller part of GEAR UP activities than student activities for several reasons. First, they were designed to be smaller, serving fewer people and offering fewer services. In addition, with some notable exceptions, the

projects experienced difficulty engaging parents in activities. However, despite parents' low participation rates, the projects continued to offer activities to parents, and many projects expanded the range of parent activities. Activities fell into three categories.

- **Parent Institutes.** During the site visits, about one-third of the projects believed that they were successfully reaching parents. In these projects, two different approaches seemed to work. In the first approach, which was used by several of the projects, parents were enrolled in parent institutes. In some of these projects, the institutes were operated by a contractor under a state GEAR UP grant. Another institute was operated as part of a citywide effort to empower parents. The institutes typically were 9- or 10-week workshops that provided parents with information and assistance to help their children prepare for college. Institutes operated by the contractor relied on the contractor to recruit parents. Instruction was offered in English and Spanish, and child care was provided. Parents "graduated" if they attended a certain number of sessions. All such projects with institutes reported large enrollments and planned to hold more workshops in the future.

- **Individual Parent and Child Counseling Sessions.** The second approach was used by four projects. The projects held individual parent and child counseling sessions for all or most of the cohort. In one case, the individual meetings with parents and their children were "facilitated" by specially trained teachers. Ninety percent of the parents participated in these meetings. Two other projects made frequent home visits during the school year. In the other projects, the parent counseling sessions were operated by GEAR UP staff (including specialized community liaisons). Although clearly not mandatory for parents, all of the projects made strong efforts to impress upon parents how important these sessions were for their children's future.

- **Other.** Other types of activities were more informal and were becoming more prevalent as the GEAR UP projects matured. For example, two schools began a monthly talk between the school's principal and any interested parents. Donuts and coffee were served, to reinforce the casual nature of these meetings. Other schools instituted a family game night or family reading night, in which parents participated in activities with their children. Finally, several projects simply made it a point to invite parents to GEAR UP activities and to keep them abreast of upcoming events through occasional GEAR UP newsletters sent home with the students.

GEAR UP projects had mixed success attracting parents to meetings.

Staff members in more than one-half of the projects in the national evaluation indicated that attracting parents to meetings and events was quite difficult. With mixed success, schools sent out newsletters and bulletins to attract parents to workshops on college awareness, parent components of Saturday programs, parent meetings or "nights," GED classes and parent auxiliary groups.

Some project staff members said they became frustrated with the lack of parent responsiveness, a viewpoint echoed by teachers in the same project schools. Many teachers attributed poor attendance at school events to parents' lack of concern with their children's education. Discussions with parents in focus groups, however, indicated that parents saw themselves as involved in, and concerned about, their children's education. (While teachers at GEAR UP schools may not have been satisfied with the level of parent involvement, an analysis of this issue in Chapter 3 shows that attendance at GEAR UP middle schools was positively associated with parent involvement.)

Parent activities were held in the evening and focused on life skills and college information.

Several differences existed in the types and timing of parent and student activities. First, and most obvious, is that parent activities were more likely to be held in the evenings. Student events, conversely, were more likely to be held during the school day or immediately after school. Another difference is that on average, parent activities attracted more participants per event than did student events. Parents tended to participate in events that focused on life skills and information about college while students participated in events focusing on academics and college awareness. Finally, parents largely participated in events led by GEAR UP staff and college students, while student events were mostly led by classroom teachers and GEAR UP staff.

2.4 Intensity of Services Provided in GEAR UP Schools

The previous discussion describes the types of GEAR UP activities offered. This section focuses on participation levels or intensity for these activities, including how many students and parents participated, how many separate GEAR UP events were held, and the relative size of the events.

Intensity of services discussion is limited to six GEAR UP projects.

There are limitations to the analysis of the intensity of services. Only six of the 18 projects completed activity records for **all** of their activities over the entire study. (Recall that only 18 of the 20 sampled GEAR UP projects provided student data for the outcomes study.) Because the data are incomplete from 12 of the projects, the intensity discussion will be based on information from the six schools that had completed activity records.[12]

The typical GEAR UP project spends about $650 (federal portion) per student per year.

Much of the GEAR UP intervention is supplemental. Therefore, measuring the amount of service or contact the typical participants are likely to receive is important. Even without considering which students use which services, GEAR UP resources are limited. For

[12] A comparison of the six schools with complete records to the 12 schools with incomplete activity records indicates that both groups are largely similar, with some exceptions. First, schools with complete activity records had a larger percentage of events (and participants at those events) in the first year of the study (2000–01) than those projects with incomplete records. Second, schools with complete activity records held a larger percentage of their events after school and in the evenings and a smaller percentage during the school day. Finally, projects with complete activity records had a lower percentage of events (and participation at those events) led by classroom teachers and project staff and a slightly higher percentage led by college students and community volunteers. Unfortunately, it is impossible to determine with available data whether these differences arise from inherent differences between the two groups of projects or from the fact that not all activities were reported from 12 of the schools. Because of this uncertainty, the analysis in this section will be based solely on the activity records from those six schools with complete records.

those GEAR UP projects in the national evaluation, the typical grant expended, on average, about $650 of its federal resources per student per year during the study period.[13] This figure includes only the federal portion of the grant and does not take into account matching contributions, either financial or in-kind, that grantees are required to secure from their partners.

In the six schools with complete activity records, about two-thirds of the 839 students sampled in these schools participated in at least one GEAR UP activity. The typical event attracted, on average, about 2 percent of the sampled students in these schools.[14] Several hundred parents of sampled students in those six schools participated in more than 100 events. In these same six schools, about 1 percent of parents, on average, participated in an event. The average level of participation was low because of several confounding factors, including cost; the limited types of "all participant" services, such as fairs and some college visits; the targeting of tutoring, which was the most common and frequent service; and the voluntary nature of other more intensive services such as the summer programs.

Academic activities were the most common services provided to students.

The most common student services focused on academic activities or special events. In the six schools with complete activity records, those types of activities accounted for about three-fourths of all student activities. The most common parent services, in the six schools with complete activity records, focused on several topics, most often academics and college awareness. Such events made up over three-fourths of all parent activities.

A typical session for students lasted an hour or less.

The service sessions provided to students tended to be shorter than those in which parents participated. More than one-half of the student activity sessions in the six schools lasted an hour or less. (See figure 2-1.) Parent activities in these six schools varied more in length. Fifty-three percent of these projects' parent activity sessions lasted more than two hours, and about one-third lasted more than five hours.

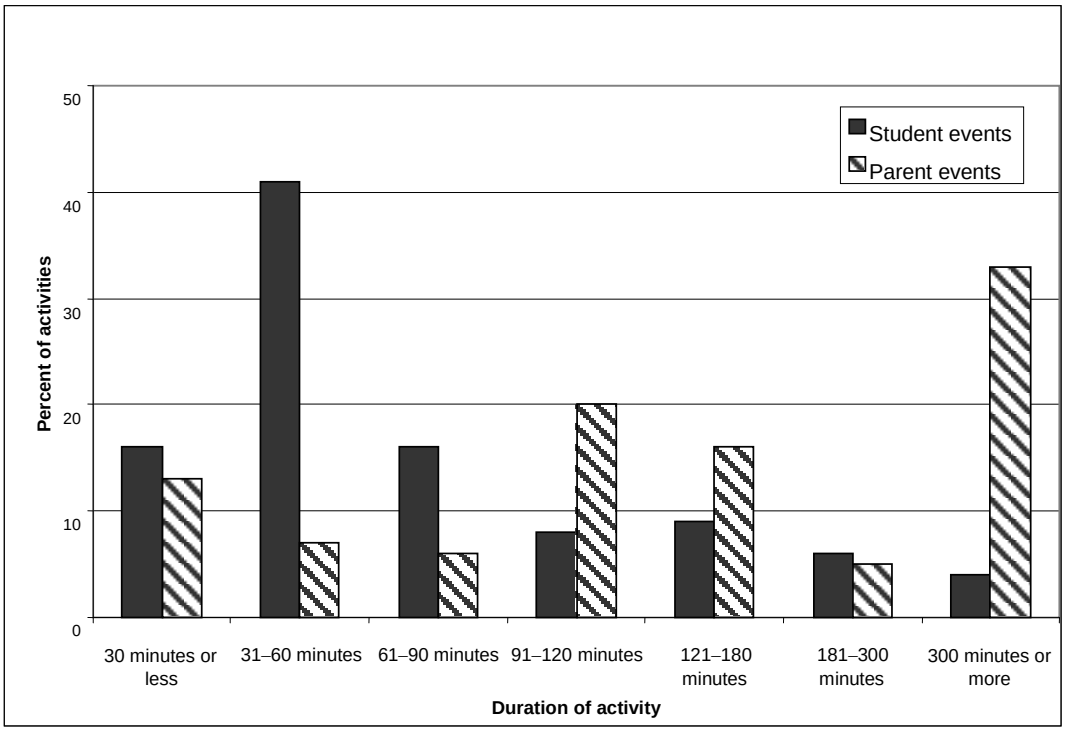
Frequency and length of activity were related to the type of activity.

Activities varied in frequency as well as in length. The difference in frequency of services was the result of individual projects' designs. Site visits indicated that the most universal (or projectwide) services offered to all students were relatively infrequent ones, such as week-long career fairs or college visits lasting one or more days. Most projects offered one career fair a year and one or two college visits for all participants. Tutoring, while far more frequent, was used by a subset of students with academic need. In the six projects with complete participation records, about one-quarter of students received tutoring. Available information indicates that the number of students participating in individual tutoring sessions varied considerably from one-quarter to three-quarters of the students within a given project.

[13] This figure is for all services, including those for students, parents and teachers as well as costs associated with curriculum reform efforts and general program operations.

[14] Because the national evaluation sampled up to 140 students in each school, the total number of students attending an individual event could very well be higher. Five of the six GEAR UP schools providing complete participation information had grade cohorts with more than 140 students.

Figure 2-1. Percentage of activities in six GEAR UP projects for students and parents, by duration of activity



SOURCE: National Evaluation of GEAR UP participation records, Sept. 2000 through June 2002.

GEAR UP increased the amount of guidance counseling students received.

One-third of the projects provided one-on-one guidance services to students with academic need. However, guidance counselors reported that contact hours per participant were relatively low, ranging from less than one hour to about four or five hours a year. Activity records for the six projects indicated that most sessions between students and guidance counselors lasted between 30 minutes and one hour. Information collected during site visits indicated that the guidance hours received under GEAR UP were not duplicative of counseling services already provided by schools because counselors reported that before GEAR UP, they had insufficient time to meet with each seventh-grade student.

Summer programs served fewer students, but accounted for many hours.

In programs in which GEAR UP offered a class in addition to the school's regular curriculum, the hours per enrollee were high, but the number of students enrolled in the course was often lower than for some other activities. Projects reported that only one-quarter of a cohort or less enrolled in these classes (such as a MESA or AVID class).[15] The same holds true for the summer programs. The summer programs could be intensive, including full-day and even residential projects. These activities typically lasted from one

[15] MESA stands for the Mathematics, Engineering and Science Achievement Program. This is a "hands-on" program that has been developed by several university engineering departments. AVID stands for Advancement Via Individual Determination. This program is designed to help underachieving students with high academic potential prepare for entrance into a four-year college.

to four weeks. Generally, up to one-quarter of the students were enrolled in the summer programs. Some projects designed these summertime activities for larger numbers of students, while in other sites, these activities were specifically designed for smaller segments of the cohorts.

3. Student and Parent Outcomes

The conceptual framework in chapter 1 (figure 1-1), identified several interim outcomes or steps to achieving the goals of GEAR UP of increased attendance and success in postsecondary institutions. This chapter examines those interim outcomes for GEAR UP since at the time of the National Evaluation it was still several years before the long-term outcomes could be known, given the ages of the participants in the study.

For students, the current questions to be addressed are the following:

- Does GEAR UP increase **knowledge** of postsecondary education requirements and availability of financial assistance?
- Does GEAR UP cause positive **behavioral** changes, such as increased enrollment in more challenging classes, improved attendance in school, improved academic performance and increased on-time promotion?
- Does GEAR UP raise **expectations** of what will occur in life after high school?

The following questions focus on parental outcomes for GEAR UP:

- Does GEAR UP increase parent's **knowledge** of postsecondary education requirements and the availability of financial assistance?
- Does GEAR UP increase parent's **involvement** in their child's education through such things as attendance at school events and activities?
- Does GEAR UP raise parent's **expectations** about their student's schoolwork and future endeavors?

The hypothesis is that these interim outcomes will happen sequentially, first increased knowledge, then more positive behavior, and then an increase in expectations. Prior research studies have found that students typically have high expectations in middle school and that these expectations wane as they get closer to high school graduation (U.S. Department of Education 1996). With this in mind, an increase in expectations for GEAR UP may actually appear as less or no decline in expectations as graduation nears.

Research has shown that middle school students have high expectations about their futures.

Analytic Method

A variety of methodological issues were confronted in the analysis phase of the study. Outcome data needed to be condensed and summarized. The quality of the initial matching needed to be reviewed. Additional adjustments based on student-level data rather than just school-level data needed to be considered. Standards of evidence and rules for analyzing subgroups needed to be established. Each of these issues is briefly discussed here. Greater detail can be found on all these issues in the appendices.

Indices were used to determine GEAR UP's relationship with interim outcomes.

Index Formation and Usage. For the majority of this chapter, indices were developed and tested to summarize the interim outcomes for the GEAR UP program, which are identified in the conceptual framework. The indices measure complex constructs and are composites of responses to student and parent questionnaire items. The primary purpose of index formation is to sharpen hypotheses before examining the data. This analytic approach is typically done to avoid statistical problems associated with running multiple tests on the same concepts. A secondary purpose of indices is to increase the statistical power and the ability to discern broad but subtle associations with a collection of outcomes. A disadvantage to using indices of this nature is that the index values themselves have no intrinsic meaning because they combine multiple questions. This can make it difficult to judge the programmatic value of statistically significant findings. Thus, where statistically significant findings for an index were found, the original questions used to create the index were also tested to determine the association of individual components with GEAR UP participation. Appendix C, Index Construction, describes how the indices were constructed for the national evaluation and details the elements that make up each index. Among these indices, one especially broad index was created called the College Orientation Index.[16]

Associations were estimated using either hierarchical linear models or counterfactual projection weights.

The tables presented in this chapter show adjusted differences between students attending GEAR UP schools (GEAR UP students) and students attending schools not participating in GEAR UP projects (non-GEAR UP students) on each of the interim outcome indicators identified above. Two different analytic techniques were used for the adjustments. It is important to note that professional judgment was applied in the selection of covariates for the adjustments. It was felt that inferences should not be based solely on the school-level matching. Instead, it was decided to control on some but not all "baseline" variables collected in the fall and early winter of seventh grade.

Matching and Covariate Selection Rules. As described earlier, a matching set of 20 GEAR UP schools and 20 comparison schools was initially selected. Of these, 36 (18 and 18, respectively) participated in the seventh-grade data collection. Because not all of the dropout schools were originally paired with each other, conditioning on the original

[16] The College Orientation Index is a summative index based on student and parent survey data that has been confirmed to be strongly linked to a student's likelihood of attending college through analysis of NELS data. The index comprises the following six constructs: academic performance from the student's perspective, parents' views of student's academic performance, student's postsecondary aspirations, parents' postsecondary aspirations for their child, student's report of parent-child discussions and time spent by the student reading for pleasure. The NELS analysis may be found in appendix D.

pairing would have reduced the school sample size to just 34 (17 and 17). Rather than accept this loss in power and representativeness, it was decided to ignore the original matching in the analysis, thereby gaining an additional pair.

A pattern of imbalance between GEAR UP and comparison students at baseline emerged.

Data from the seventh grade were used to examine the quality of the matching between the 18 GEAR UP and 18 comparison schools. As these data were examined, a pattern of imbalances emerged. On the one hand, there were a number of indications that students in the comparison schools had better attitudes about school, their parents were better educated and more connected to the schools, their families were more deeply rooted in their communities and the home environment had a richer intellectual tone.[17] On the other hand, both students and parents in the GEAR UP schools reported a much richer set of college-related services and more knowledge about college.[18]

- GEAR UP students reported more frequent meetings with adult mentors such as a Big Brother or Big Sister than comparison students reported (44 percent versus 37 percent).
- More GEAR UP than comparison students reported having a one-on-one counseling or advising session about getting ready for college (31 percent versus 26 percent).
- More GEAR UP than comparison students reported attending a class or meeting about getting ready for college (40 percent versus 22 percent).
- More GEAR UP than comparison students had at least heard of two-year and community colleges (62 percent versus 52 percent).
- More GEAR UP than comparison parents reported attending meetings about college preparatory curricula (17 percent versus 9 percent).
- More GEAR UP than comparison parents reported finding out about child participation in the kinds of activities sponsored by GEAR UP through letters or written notices (39 percent versus 27 percent).
- More comparison than GEAR UP parents reported having no information about college entrance requirements (54 percent versus 46 percent).
- More GEAR UP than comparison parents reported that their seventh-graders had visited a college campus (21 percent versus 8 percent).

[17] See table E-6.

[18] See table E-4.

- More GEAR UP than comparison parents reported attending meetings about the types of classes their children should be taking to get ready for college (13 percent versus 6 percent).

- More GEAR UP than comparison parents reported receiving written materials of college preparatory curricula (21 percent versus 12 percent).

We believe that these remarkable differences in postsecondary education awareness were caused by early GEAR UP activities. This is substantiated by four facts. First, the seventh-grade interviews did not take place until late fall or early winter of the school year, so there was ample time for the GEAR UP projects to have provided services that would have produced these differences in awareness resulting in the observed imbalances. Second, the theoretical model of GEAR UP indicated that the first effects of GEAR UP should be on postsecondary education awareness. Third, site visitors reported that the GEAR UP projects were providing services of the types that would be expected to produce these awareness imbalances. Fourth, if these awareness differences had no causal connection to GEAR UP services, then we should have seen a surrounding constellation of pro-postsecondary education attitudes and habits. We found nothing of the sort. As noted above, GEAR UP students had worse school work ethics. Most importantly, when we looked at current intentions for postsecondary education, GEAR UP students were significantly less likely to be definitely intent on attending college (53 percent versus 59 percent).

Given this substantiated belief about the causes of the observed imbalances, it was decided to control on some but not all seventh-grade variables. The analyses in this chapter were controlled on only those we believed to be uncontaminated by early GEAR UP activities. Controlling on the full set of seventh-grade variables would have resulted in finding fewer significant positive associations for GEAR UP with targeted outcomes. It is also likely that fewer such associations would have been found if none of the seventh-grade variables had been controlled. (See appendix E for more details about the removal of these baseline differences.)

Adjustment Techniques. The adjusted differences were estimated by comparing GEAR UP and non-GEAR UP students using either a hierarchical linear modeling (HLM) approach or counterfactual projection (CFP) weights to handle several complicating factors described in Appendix E, Removal of Baseline Differences. The HLM approach was used for those outcomes that were approximately normally distributed, while the CFP weighting approach was used for outcomes that were not normally distributed. Both methods controlled for baseline differences between the GEAR UP and non-GEAR UP students on a common set of baseline variables that were initially out of balance between the two groups, as discussed in section 2.1. However, beyond controlling on this common set of variables, the HLM approach provided somewhat stronger control on baseline differences in three respects. First, if the baseline version of the variable being analyzed was judged not to be contaminated by early program activities, then the HLM approach controlled on it. Second, the HLM approach controlled on several school-level baseline summaries. Third, the HLM approach controlled some interactions among the variables. The notes following each table indicate whether CFP weights or HLM methods were used to prepare the analyses in the table. If HLM was used, the note also indicates

whether the baseline value of the outcome was included as a covariate in the model. The full HLM models are shown in appendix E.

As evidence for the success of the CFP weighting approach, we note that the initial difference in seventh-grade report of strong intentions for college attendance was reduced by the adjustment and no longer presented a significant imbalance. Prior to adjustment, the gap between GEAR UP students and the comparison students was 6 percentage points (53 percent versus 59 percent). After the adjustment, the gap was 4 percentage points (54 percent versus 58 percent) and no longer statistically significant. More strikingly, the College Orientation Index dropped from -0.086 standard deviations to just -0.004 standard deviations. So using the CFP weights resulted in the two groups of students (and their parents) being very well-matched in terms of their initial orientation toward college.

Although separate scores are presented in the tables in this chapter for the two groups of students, the difference and confidence interval columns are the important columns to examine. To assess whether an adjusted difference is statistically significant, a two-tailed statistical test was used. Whether the adjusted difference was estimated with CFP weights or by HLM, the test fully reflects the extra uncertainty caused by the small number of schools in the study.

Significance Levels. The probability of rejecting the hypothesis of no effect was set at the 5-percent level. Specifically, confidence intervals that do not include zero are statistically significant at the 5-percent level and are identified by an asterisk (*) in the difference column. Adjusted differences that are statistically significant at the 10-percent level are identified with a dagger (†), although confidence intervals are not presented. Using a 10-percent level means that 10 times out of 100, the hypothesis of no effect may be rejected by chance alone. Whether the estimated adjusted difference is a positive or negative number shows the direction of the association; a positive number indicates a positive association with respect to the theoretical model of how GEAR UP should work, and a negative number indicates a negative association (again with respect to the theoretical model) for GEAR UP students when the measure is determined to be statistically significant.

Subgroups. In addition to investigating the outcomes of GEAR UP for all students, several subgroups were identified as of interest. These groups were African-Americans, Hispanics, potential first-generation college students and those students scoring in the middle third on the College Orientation Index.[19] African-Americans and Hispanics are of interest because they are underrepresented in postsecondary institutions. Similarly, potential first-generation college students—students who would be the first in their immediate families to attend college—have been shown to be less likely than their peers to complete the steps necessary to enroll in a four-year college (Education Resources Institute 1997). Those who do enroll are less likely to do so directly following high school. There was very little variation on income among the students studied because of

Positive associations were identified for subgroups of students:

- *African-Americans*
- *Hispanics*
- *First-generation college students*
- *Middle third on College Orientation Index*

[19] The middle third of the College Orientation Index was chosen because it was hypothesized that the greatest difference between the GEAR UP and non-GEAR UP students would be found for this group. The College Orientation Index estimates a student's likelihood of attending college. It is a scaled score that was created based on student responses to specific questions and responses to questions asked of their parents.

the GEAR UP program's emphasis on low-income students, so this group was not isolated for analytic purposes.

3.1 Academic Preparation and Progress

Research shows that preparation for college should begin in middle school.

Research has shown that students who take a full load of college preparatory courses are more likely than other students to attend college (Tierney, Colyar, and Corwin 2003). The middle school years are critical to a student's ability to take difficult courses in high school. The overall difficulty of a student's course work (or academic rigor) has been shown in studies focusing on high school students to be strongly associated with postsecondary entry and the student's postsecondary grade point average (GPA), the amount of remedial course work needed in college and their rates of persistence and attainment in college (Warburton, Burgarin, and Nunez 2001). Thus, in addition to course-taking behavior, students' secondary school academic performance contributes heavily to their ability to succeed in postsecondary institutions, particularly four-year colleges and universities.

Attendance patterns are important indicators for future academic success.

In addition, students with positive attendance patterns are more engaged and therefore more likely to perform better in school (Schwarz and Lui 2000; Slem 1983; Steward, Steward, and Blair 2002,). Thus, the associations of GEAR UP affiliation with (1) course-taking behavior, (2) academic achievements and (3) attendance are discussed in the next three subsections.

Course-taking Behavior

Although each student's entire eighth-grade transcript was coded and processed, this analysis focuses on the core academic subjects (mathematics, science, English and foreign language) that are considered to be the best indicators of a student's preparation for high school and college.

This section investigates the relationship of GEAR UP affiliation to students' academic preparation for postsecondary education by first looking at course-taking behaviors in eighth-grade to see if GEAR UP students were enrolling in more challenging (rigorous) classes at higher rates than students not attending GEAR UP schools. *More challenging* is defined in terms of the percentage of students taking advanced or above-grade-level classes in each of the four core subjects. (The confidence intervals in this section are wider because course-taking behavior varied considerably across the schools. The high intraclass correlations compared with other outcome measures are attributable to the small number of schools in the study, the consistency of responses within schools and the sharp variation across schools.)

More GEAR UP students took advanced science courses.

Table 3-1a shows that GEAR UP affiliation had a positive association with rigorous science course-taking behavior. GEAR UP students, as a whole, Hispanic students, potential first-generation college students and those students scoring in the middle third on the College Orientation Index all enrolled in above-grade-level science classes at higher rates than the non-GEAR UP students.

Table 3-1a. Association for GEAR UP with percentage of students taking more challenging core academic courses

Measure and subgroup	GEAR UP (%)	Non-GEAR UP (%)	Difference (%)	95% Confidence interval (%)
Percentage of students enrolled in algebra				
All	33.6	22.9	10.6	(-2.3,23.6)
Middle 1/3 on College Orientation Index	30.9	21.0	9.8	(-5.7,25.3)
African-American	18.5	9.6	9.0	(-5.9,23.8)
Hispanic	49.0	39.8	9.2	(-16.2,34.5)
First-generation student	32.3	21.9	10.4†	(-2.0,22.8)
Percentage of students enrolled at above-grade level in science				
All	14.7	4.8	9.8*	(2.2,17.5)
Middle 1/3 on College Orientation Index	14.3	4.8	9.5*	(1.7,17.3)
African-American	9.4	2.0	7.4	(-1.7,16.4)
Hispanic	24.6	7.9	16.7*	(0.3,33.1)
First-generation student	13.0	4.6	8.3*	(1.2,15.4)
Percentage of students enrolled at above-grade level in English				
All	24.8	12.2	12.6	(-6.5,31.7)
Middle 1/3 on College Orientation Index	18.9	10.5	8.4	(-3.8,20.6)
African-American	15.6	4.2	11.4†	(-0.8,23.6)
Hispanic	32.2	25.3	6.9	(-11.2,25.1)
First-generation student	25.3	11.9	13.4	(-8.6,35.4)
Percentage of students enrolled at above-grade level in foreign language				
All	2.7	3.0	-0.2	(-5.1,4.7)
Middle 1/3 on College Orientation Index	1.9	2.7	-0.9	(-5.6,3.9)
African-American	0.5	1.4	-1.0	(-3.7,1.8)
Hispanic	9.1	3.4	5.7	(-4.0,15.3)
First-generation student	1.3	3.1	-1.9	(-6.4,2.7)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.

Detail may not sum to totals because of rounding.

More GEAR UP students who could be the first in their families to attend college took algebra in eighth grade.

There is modest evidence (measured at the 90 percent confidence level) that GEAR UP affiliation was also positively associated with enrollment in algebra for potential first-generation college students and for above-grade-level English for African-American students. Similar apparent increases in the likelihood of taking algebra and above-grade-level English in the eighth grade were found for GEAR UP students overall and for other subgroups, but these differences could not be statistically confirmed, just failing to meet the 0.10 level needed for statistical significance. Taking algebra in the eighth-grade is important because research has shown that this is associated with completing advanced-level mathematics classes in high school, which has been shown to have a direct bearing on whether a student continues his or her education after high school (Oakes 1990, U.S. Department of Education 2000).

GEAR UP students were less likely to take pre-algebra.

Table 3-1b shows the differences in enrollments by types of mathematics classes taken. In addition to the increased enrollments in algebra for potential first-generation college students, there is modest evidence that GEAR UP students were less likely to take pre-algebra in the eighth grade than non-GEAR UP students. One plausible explanation is that some projects may have substituted algebra classes for pre-algebra classes and moved the less skilled students down to "*nonacademic mathematics*."[20]

Table 3-1c shows that, in general, GEAR UP students were taking higher level science classes in eighth grade than non-GEAR UP students. Overall and for three of the four subgroups, GEAR UP students were enrolled in above-grade-level life or physical science classes at a higher rate than non-GEAR UP students. There was evidence of this association overall and for potential first-generation college students and students scoring in the middle third on the College Orientation Index.

There was modest positive evidence that Hispanic GEAR UP students were enrolling in above-grade life or physical science classes at higher rates during the eighth grade than their non-GEAR UP counterparts.

African-American GEAR UP students were more likely to take advanced English.

There was a statistically significant difference at the 0.05 level between GEAR UP and non-GEAR UP students for African-American students in above-grade-level English (see table 3-1d). Differences regarding English were also observed between GEAR UP and non-GEAR UP students overall and those who were potentially first-generation college students; however, these differences could not be statistically confirmed. (For the purposes of this analysis, English as a second language classes were classified in the "No English" category because they fall outside the normal course progression.)

As shown in table 3-1e, there are some statistically significant differences in the enrollments in foreign language between GEAR UP and non-GEAR UP students for some subgroups of interest. These differences are primarily driven by the fact that few of the GEAR UP schools, as compared with non-GEAR UP schools, offered foreign language classes to their students.

[20] This term is used by NCES to describe general and basic skills mathematics classes.

Table 3-1b. Association for GEAR UP with level of mathematics courses taken

Measure and subgroup	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
Percentage of all students				
Remedial or no mathematics	2.7	3.4	-0.7	(-3.9,2.5)
Nonacademic mathematics[a]	44.5	35.1	9.3	(-17.5,36.2)
Pre-algebra	19.3	38.5	-19.3*	(-42.3,3.8)
Algebra	33.6	22.9	10.6	(-2.3,23.6)
Percentage of students in middle 1/3 on College Orientation Index				
Remedial or no mathematics	1.8	1.6	0.2	(-1.8,2.1)
Nonacademic mathematics	46.8	38.6	8.1	(-17.7,33.9)
Pre-algebra	20.6	38.7	-18.1	(-41.1,4.9)
Algebra	30.9	21.0	9.8	(-5.7,25.3)
Percentage of African-American students				
Remedial or no mathematics	1.8	6.2	-4.4	(-12.4,3.7)
Nonacademic mathematics	59.3	57.0	2.3	(-22.9,27.6)
Pre-algebra	20.3	27.2	-6.9	(-26.6,12.7)
Algebra	18.5	9.6	9.0	(-5.9,23.8)
Percentage of Hispanic students				
Remedial or no mathematics	5.3	3.1	2.2	(-1.6,6.0)
Nonacademic mathematics	36.7	32.9	3.8	(-22.3,29.8)
Pre-algebra	9.0	24.2	-15.1	(-38.5,8.2)
Algebra	49.0	39.8	9.2	(-16.2,34.5)
Percentage of first-generation students				
Remedial or no mathematics	2.3	2.9	-0.6	(-4.3,3.2)
Nonacademic mathematics	44.1	36.3	7.8	(-21.0,36.6)
Pre-algebra	21.3	39.0	-17.7	(-42.5,7.2)
Algebra	32.3	21.9	10.4†	(-2.0,22.8)

* Statistically significant differences at the 5-percent level.

[a] This term is used by NCES to describe general and basic skills mathematics classes.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.

Detail may not sum to totals because of rounding.

Table 3-1c. Association for GEAR UP with level of science courses taken

Measure and subgroup	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
Percentage of all students				
Remedial or no science	1.1	6.8	-5.6	(-15.6,4.3)
On-grade or below-grade life or physical sciences	74.4	76.0	-1.7	(-30.3,27.0)
Above-grade life or physical sciences	12.4	3.9	8.5*	(1.4,15.7)
Chemistry or physics	12.1	13.3	-1.2	(-25.6,23.2)
Percentage of students in middle 1/3 on College Orientation Index				
Remedial or no science	0.4	6.7	-6.3	(-17.1,4.6)
On-grade or below-grade life or physical sciences	72.0	78.7	-6.7	(-35.1,21.8)
Above-grade life or physical sciences	12.8	4.2	8.6*	(0.7,16.4)
Chemistry or physics	14.8	10.4	4.4	(-20.4,29.2)
Percentage of African-American students				
Remedial or no science	1.0	12.8	-11.7	(-28.5,5.1)
On-grade or below-grade life or physical sciences	56.0	80.2	-24.1	(-81.7,33.4)
Above-grade life or physical sciences	6.4	1.0	5.4	(-1.8,12.6)
Chemistry or physics	36.5	6.1	30.4	(-23.0,83.9)
Percentage of Hispanic students				
Remedial or no science	1.7	6.9	-5.2	(-14.3,3.8)
On-grade or below-grade life or physical sciences	65.1	84.4	-19.3	(-47.3,8.6)
Above-grade life or physical sciences	21.9	6.6	15.3†	(-1.3,31.9)
Chemistry or physics	11.4	2.1	9.2	(-14.0,32.5)
Percentage of first-generation students				
Remedial or no science	1.0	7.2	-6.2	(-17.8,5.5)
On-grade or below-grade life or physical sciences	75.4	74.4	1.0	(-30.4,32.5)
Above-grade life or physical sciences	10.5	3.7	6.8*	(0.8,12.7)
Chemistry or physics	13.0	14.6	-1.6	(-28.9,25.7)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.
Detail may not sum to totals because of rounding.

Table 3-1d. Association for GEAR UP with level of English courses taken

Measure and subgroup	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
Percentage of all students				
No English	3.0	4.5	-1.5	(-4.4,1.4)
Remedial English	1.1	3.9	-2.8	(-10.5,5.0)
Below-grade English	1.4	3.2	-1.9	(-6.1,2.4)
On-grade English	69.7	76.2	-6.5	(-28.3,15.3)
Above-grade English	24.8	12.2	12.6	(-6.5,31.7)
Percentage of students in middle 1/3 on College Orientation Index				
No English	3.8	4.4	-0.6	(-4.0,2.8)
Remedial English	0.6	4.8	-4.2	(-14.1,5.7)
Below-grade English	1.9	2.3	-0.3	(-3.3,2.6)
On-grade English	74.8	78.0	-3.2	(-20.6,14.1)
Above-grade English	18.9	10.5	8.4	(-3.8,20.6)
Percentage of African-American students				
No English	2.1	3.8	-1.6	(-7.5,4.2)
Remedial English	0.7	14.3	-13.6	(-41.8,14.6)
Below-grade English	1.6	1.7	-0.1	(-4.7,4.6)
On-grade English	79.9	76.0	3.9	(-36.0,43.8)
Above-grade English	15.6	4.2	11.4*	(-0.8,23.6)
Percentage of Hispanic students				
No English	7.5	7.4	0.2	(-4.0,4.3)
Remedial English	2.3	1.5	0.8	(-4.4,6.1)
Below-grade English	2.8	4.2	-1.4	(-5.1,2.3)
On-grade English	55.1	61.7	-6.5	(-24.6,11.5)
Above-grade English	32.2	25.3	6.9	(-11.2,25.1)
Percentage of first-generation students				
No English	1.9	3.2	-1.4	(-4.4,1.6)
Remedial English	0.9	4.2	-3.3	(-11.7,5.1)
Below-grade English	0.9	2.8	-1.9	(-6.6,2.7)
On-grade English	71.1	77.9	-6.8	(-31.8,18.2)
Above-grade English	25.3	11.9	13.4	(-8.6,35.4)

* Statistically significant differences at the 5-percent level.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.

Detail may not sum to totals because of rounding.

Table 3-1e. Association for GEAR UP with level of foreign language courses taken

Measure and subgroup	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
Percentage of all students				
No foreign language	84.5	66.6	17.9	(-4.4,40.1)
On-grade or below-grade foreign language	12.8	30.4	-17.6	(-39.3,4.0)
Above-grade foreign language	2.7	3.0	-0.2	(-5.1,4.7)
Percentage of students in middle 1/3 on College Orientation Index				
No foreign language	84.9	66.0	18.9†	(-2.5,40.3)
On-grade or below-grade foreign language	13.2	31.3	-18.0†	(-38.9,2.8)
Above-grade foreign language	1.9	2.7	-0.9	(-5.6,3.9)
Percentage of African-American students				
No foreign language	74.4	48.5	25.9	(-8.3,60.1)
On-grade or below-grade foreign language	25.1	50.1	-25.0	(-59.6,9.6)
Above-grade foreign language	0.5	1.4	-1.0	(-3.7,1.8)
Percentage of Hispanic students				
No foreign language	73.0	77.6	-4.6	(-23.0,13.8)
On-grade or below-grade foreign language	17.9	19.0	-1.1	(-12.2,10.0)
Above-grade foreign language	9.1	3.4	5.7	(-4.0,15.3)
Percentage of first-generation students				
No foreign language	87.5	63.2	24.3*	(0.7,47.9)
On-grade or below-grade foreign language	11.2	33.7	-22.5†	(-46.3,1.4)
Above-grade foreign language	1.3	3.1	-1.9	(-6.4,2.7)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.
Detail may not sum to totals because of rounding.

To determine the academic difficulty (or rigor) of the student's course work, the highest level class in each subject was first identified. The overall rigor of each student's course load was determined by counting the number of classes the student took that were considered to be advanced or above-grade-level work. Thus, a student could score from "0" to "4" on the rigor scale. For example, if a student was taking an advanced English class and algebra, the student was counted as having two classes above-grade level and was placed at level two on the rigor scale. Four core subject areas were used in creating the academic rigor scale.

Table 3-1f shows the estimated association of GEAR UP affiliation with the level of difficulty of the core academic courses taken by students. There was a positive association of GEAR UP affiliation with the level of difficulty of the course load for African-American students. Thus, African-American GEAR UP students were taking more higher level classes than their non-GEAR UP counterparts.

GEAR UP was positively associated with the number of high-level classes African-American students took.

Table 3-1f. Association for GEAR UP with academic rigor of courses taken

Measure and subgroup	GEAR UP	Non-GEAR UP	Difference
Mean number of academically rigorous core courses taken			
All	1.1	1.0	0.1
Middle 1/3 on College Orientation Index	1.0	0.9	0.1
African-American	1.0	0.5	0.5*
Hispanic	1.3	1.0	0.3
First-generation	1.1	1.0	0.1

* Statistically significant differences at the 5-percent level.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.
Academic rigor is determined by the number of core academic classes taken that are considered to be above-grade level for an average eighth-grade student.
Detail may not sum to totals because of rounding.

Academic Performance

This section looks at how students were performing in the classes they were taking according to school records.[21] If the GEAR UP program is having a positive effect on students in GEAR UP schools, then these students would have improved academic performance exhibited through better grades and higher grade point averages (GPAs). This section considers two measures of academic achievement: academic GPA and high performance in above-grade-level classes. Because of considerable variability in grading standards across schools, the confidence intervals for academic achievement are unusually wide.

As Tables 3-1g and 3-1h show, both measures were unable to detect a statistically significant difference in performance between GEAR UP and non-GEAR UP students by the end of the eighth grade. Table 3-1g shows that there was no discernable difference between GEAR UP and non-GEAR UP students at the end of the eighth grade in the grades these students received in each of the four subject areas.

[21] Students and parents also assessed the student's academic performance. These are, respectively, the Academic and Performance subindices in appendix C. They are referred to as subindices because both were averaged into the overall College Orientation Index. They are also discussed separately later in this chapter under the heading, "student attitudes and behaviors." For this section of the report, we analyzed the school transcript data on performance.

Table 3-1g. Association for GEAR UP with level of academic performance

Measure and subgroup	GEAR UP	Non-GEAR UP	Difference	95% Confidence interval
Mean GPA for mathematics				
All	2.5	2.4	0.1	(-0.2,0.4)
Middle 1/3 on College Orientation Index	2.5	2.3	0.1	(-0.2,0.4)
African-American	2.3	2.2	0.1	(-0.2,0.5)
Hispanic	2.5	2.2	0.4	(-0.3,1.0)
First-generation	2.5	2.5	0.0	(-0.2,0.3)
Mean GPA for science				
All	2.6	2.6	-0.1	(-0.4,0.2)
Middle 1/3 on College Orientation Index	2.5	2.6	-0.1	(-0.4,0.2)
African-American	2.2	2.3	-0.1	(-0.4,0.2)
Hispanic	2.7	2.5	0.2	(-0.1,0.6)
First-generation	2.6	2.7	-0.1	(-0.4,0.2)
Mean GPA for English				
All	2.7	2.7	-0.1	(-0.3,0.2)
Middle 1/3 on College Orientation Index	2.6	2.7	-0.0	(-0.3,0.3)
African-American	2.3	2.4	-0.1	(-0.4,0.2)
Hispanic	2.7	2.7	0.0	(-0.3,0.4)
First-generation	2.7	2.7	-0.1	(-0.4,0.2)
Mean GPA for foreign language				
All	2.5	2.7	-0.2	(-0.6,0.2)
Middle 1/3 on College Orientation Index	2.4	2.8	-0.4	(-0.9,0.1)
African-American	2.1	2.5	-0.4	(-1.2,0.4)
Hispanic	2.7	2.9	-0.2	(-0.7,0.4)
First-generation	2.4	2.7	-0.3	(-0.8,0.2)

***** Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.

The number -0.0 indicates that the true value of this number is less than zero but more than -0.1.

Detail may not sum to totals because of rounding.

Table 3-1h. Association for GEAR UP with percentage of students with high levels of academic performance

Measure and subgroup	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
Percentage of all students with grade of B or better in above-grade level				
Mathematics	21.4	11.6	9.8	(-0.3,19.8)
Science	10.5	3.7	6.8	(-0.8,14.4)
English	17.9	10.5	7.4	(-6.6,21.4)
Foreign language	0.9	2.4	-1.4	(-4.3, 1.4)
Percentage of students in middle 1/3 on College Orientation Index with grade of B or better in above-grade level				
Mathematics	15.7	8.2	7.6	(-1.4,16.6)
Science	9.8	3.7	6.1	(-2.6,14.8)
English	13.5	8.7	4.8	(-4.3,14.0)
Foreign language	0.6	2.4	-1.8	(-5.0,1.4)
Percentage of African-American students with grade of B or better in above-grade level				
Mathematics	8.0	5.5	2.5	(-5.5,10.5)
Science	4.6	2.0	2.5	(-2.4,7.5)
English	9.3	4.2	5.1	(-3.4,13.6)
Foreign language[a]	–	–	–	–
Percentage of Hispanic students with grade of B or better in above-grade level				
Mathematics	30.3	16.0	14.3	(-6.4,35.1)
Science	20.3	5.3	15.1	(-1.4,31.5)
English	24.3	20.7	3.5	(-14.5,21.6)
Foreign language	2.8	3.0	-0.2	(-2.6,2.3)
Percentage of first-generation students with grade of B or better in above-grade level				
Mathematics	20.9	11.9	9.0	(-0.7,18.6)
Science	9.0	3.7	5.3	(-1.7,12.3)
English	17.7	10.4	7.4	(-8.7,23.4)
Foreign language	0.3	2.5	-2.2	(-5.2,0.8)

***** Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

[a] Inadequate sample size to produce estimates.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.
The number -0.0 indicates that the true value of this number is less than zero but more than -0.1.
Detail may not sum to totals because of rounding.

There was no difference in academic performance between the best performing students in each group.

A student's academic performance is an indicator of his or her understanding of the subject matter. Colleges and other postsecondary institutions typically use students' grades to determine their ability to handle more challenging course work. Table 3-1h looks at those students who received above-average grades (a B or better) in their above-grade-level classes. Again, by eighth grade there was no discernable difference in academic performance between the two groups of students. (The GEAR UP students were taking a more rigorous curriculum, but their grades were not lower.) Alternative measures of academic achievement reported by students as well as their parents are discussed in section 3.2. Although confidence intervals are narrower on these self-reported measures, few significant differences were identified.

Attendance

Attendance patterns and suspension rates were unaffected.

A student's attitude toward school is often apparent through his or her attendance patterns and adherence to school rules. A student's presence at school and in the classroom is generally considered to be an indicator of whether the student takes school and academics seriously. Table 3-1i shows that by the end of the eighth grade, there was no significant association for GEAR UP with the rate of absences or class skipping. The suspension rates for failing to follow school policies were also uncorrelated with GEAR UP affiliation. (Absences and suspensions were reported by schools, while class-cutting was reported by students.)

3.2 Expectations, Student Attitudes and Behaviors

Student expectations about college are one of the important factors in a student's decision about whether to attend college. Students in middle and high school often have high expectations about their future but lack the knowledge of how to get there (Venezia, Kirst, and Antonio 2003). In addition, students' attitudes about and behaviors in school play a major role in their ability to continue their education after high school. As discussed in earlier chapters, GEAR UP provides a broad array of services to students, their parents and the schools these students attend. A core objective of the services provided by GEAR UP is to raise student expectations about postsecondary education. GEAR UP also seeks to improve student attitudes about school and behaviors relative to school.

Given that parent activities are an important part of project services (as described in chapter 2), an important set of evaluation hypotheses concerns effects on parents. One area in which these effects were anticipated was parents' expectations for their children's postsecondary education. In addition to changes in students' expectations, this section also looks at associations for GEAR UP affiliation with parents' expectations for their children.

All measurements in this section pertain to the end of eighth grade.

Table 3-1i. Association for GEAR UP with student discipline

Measure and subgroups	GEAR UP	Non-GEAR UP	Difference
Median total days absent			
All	5.0	5.1	-0.2
Middle 1/3 on College Orientation Index	5.1	5.4	-0.4
African-American	6.7	5.1	1.6
Hispanic	3.2	3.4	-0.2
First-generation	5.1	5.6	-0.4
Percentage of students cutting classes at least once in last month			
All	12.9%	11.9%	1.0
Middle 1/3 on College Orientation Index	14.4%	11.4%	3.0
African-American	15.4%	13.5%	1.9
Hispanic	17.0%	12.7%	4.3
First-generation	12.5%	11.5%	1.0
Mean total suspensions			
All	1.5	1.2	0.3
Middle 1/3 on College Orientation Index	1.4	1.1	0.2
African-American	2.7	2.3	0.4
Hispanic	1.3	1.0	0.3
First-generation	1.5	1.1	0.4

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.

The number -0.0 indicates that the true value of this number is less than zero but more than -0.1.

Detail may not sum to totals because of rounding.

Students' Expectations

Students' early expectations about their postsecondary future are strongly linked to their likelihood of attending college. Using restricted data from the National Education Longitudinal Study (NELS) covering six years beginning with eighth grade and subsetted to high-poverty public middle schools, the probability of entering a postsecondary education institution on a traditional schedule (i.e., the fall immediately following high school graduation) is 45 percent for those who stated in the spring of eighth grade "[I'm] very sure I'll go," when asked about the likelihood of continuing their education past high school. For those less sure (or sure of the opposite), the comparable percent was just 22 percent. If GEAR UP could raise expectations in the eighth grade, that would be a hopeful sign for achieving ultimate program goals.

In this evaluation of GEAR UP, a broad index of student expectations was studied. Additional analyses were run on two of the component variables thought to be most important. The index was constructed using four responses from the student survey related to the student's own expectations about how much education he or she believes is necessary after high school as well as three questions concerning knowledge about

postsecondary education options that were found to be highly correlated with intentions. The index consists of responses to questions about the following: [22]

- How likely the student is to attend college,
- How important the student believes it is to go to college,
- How far in school the student thinks he or she will go,
- How much education the student believes he or she needs for anticipated job at age 30,
- Whether student has heard of four-year institutions,
- How many people student has talked to about postsecondary education, and
- Whether student believes a person with a college education earns more money.

Students' expectations about attending college were not affected.

By the end of the eighth grade, GEAR UP had not affected students' expectations about pursuing postsecondary education as measured by the index (see upper panel in table 3-2a). GEAR UP and non-GEAR UP students showed no statistically significant difference in their expectations about how much education they felt they needed after high school for their anticipated career as measured by the index.[23] This is true for all students as well as for the four subgroups.

Next, particular attention was paid to the question about intentions of going to college. A binary split was studied that identifies those students who agreed with the statement, "I will definitely go to college." Results are shown in the second panel of the table. Again, there was no discernable difference between GEAR UP and non-GEAR UP students. In both groups, a slim majority said they will "definitely" go to college.

Concerned that this binary split may have masked some shifting among lesser degrees of certainty about intentions toward going to college, table 3-2b (upper panel) compares student responses on the full range of answers to the intentions question. No evidence was found for any shifting in the distribution. Digging further, the lower panel of table 3-2b shows similar detail on the question about expected ultimate educational attainment. Here, there is evidence of a shift toward expected associate's degrees but without a significant offsetting decline in some other category.

[22] For more information, see the "ExpectPSErev" section of appendix C. We also experimented with a version of the index using only responses to the first four questions. The Cronbach alpha for this index was 0.68. The knowledge questions were added because of their high correlation with the other four questions. These knowledge questions are also part of the KnowPSE index that is analyzed in table 3-3a.

[23] This comparison is fully controlled for the seventh-grade scores for the students on the same index.

Table 3-2a. Association for GEAR UP with students' expectations about postsecondary education

Measure and subgroups	GEAR UP	Non-GEAR UP	Difference	95% Confidence interval
Index of students' expectations about postsecondary education				
All	-0.2	-0.4	0.3	(-0.2,0.7)
Middle 1/3 on College Orientation Index	0.0	-0.2	0.2	(-0.3,0.8)
African-American	-0.5	-0.7	0.2	(-0.4,0.8)
Hispanic	-0.0	-0.3	0.3	(-0.6,1.2)
First-generation	-0.1	-0.2	0.1	(-0.3,0.6)
Percentage of students who say they will "definitely" go to college				
All	50.3%	51.7%	-1.4	(-5.1,2.4)
Middle 1/3 on College Orientation Index	45.6%	49.3%	-3.7	(-10.9,3.5)
African-American	50.7%	52.8%	-2.1	(-9.2,5.1)
Hispanic	47.1%	44.8%	2.3	(-10.8,15.3)
First-generation	51.7%	54.4%	-2.7	(-6.7,1.2)

***** Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates for the index in this table were prepared with hierarchical linear modeling (HLM) with control on baseline value of outcome.

Estimates for the percentages in this table were prepared with replicated counterfactual projection (CFP) weights.

The number -0.0 indicates that the true value of this number is less than zero but more than -0.1.

Detail may not sum to totals because of rounding.

Table 3-2b. Association for GEAR UP with students' responses to selected questions about postsecondary education

Question and responses	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
How likely are you to go to college?				
I will definitely go to college	50.3	51.7	-1.4	(-5.1,2.4)
I will probably go to college	30.5	27.5	3.0	(-0.4,6.3)
I may go to college	11.7	10.8	0.9	(-0.9,2.6)
I will probably not go to college	2.9	3.9	-1.0	(-2.4,0.5)
I will definitely not go to college	1.1	1.2	-0.1	(-1.1,0.9)
I have not decided yet	3.5	4.9	-1.4	(-3.2,0.4)
How far in school do you think you will get after high school?				
A certificate from a vocational, trade, or business school (less than two-year program)	7.1	7.7	-0.6	(-2.9,1.7)
A two-year degree from a community college; an associate's (A.A.) degree	12.3	9.5	2.8*	(0.2,5.4)
A four- to five-year degree from a college or university or bachelor's (BA) degree	29.9	27.8	2.1	(-1.8,6.0)
A graduate or professional degree such as a master's (M.A.), doctorate (Ph.D.), law (J.D.), or medical (M.D.) degree	27.0	27.5	-0.4	(-6.2,5.4)
I'm not going to school after high school	1.9	1.4	0.5	(-0.5,1.5)
Don't know	21.8	26.2	-4.4	(-3.2,0.4)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates for this table were prepared with replicated counterfactual projection (CFP) weights.

NOTES: Detail may not sum to totals because of rounding.

Parent Expectations

Parent expectations are considered an important aspect of a student's success in school. Research has shown that parents who have high expectations for their children, in turn, have children who achieve at higher levels than other children (Hofferth 1988, Sukhdeep

and Reynolds 1996). The index measuring differences in parent expectations consists of responses to questions from the parent survey about the parents':[24]

- Conversations with their child about future college attendance,
- Expectations about the ultimate certificate or degree that their child might earn,
- Expectations about whether their child is likely to attend college away from home, and
- Expectations about their ability to afford tuition at a four-year state college or university for their child.

GEAR UP increased parents' expectations about college for their child.

Table 3-2c shows the association for GEAR UP affiliation with parent expectations.[25] Overall, there was evidence that GEAR UP parents had higher expectations for their students at the end of eighth grade than non-GEAR UP parents. Significant results were observed at the 95-percent confidence level for parents of African-American students and the parents of students scoring in the middle third on the College Orientation Index.

Table 3-2c. Association for GEAR UP with parents' expectations for their children

	Parental Expectations Index		
Population	GEAR UP	Non-GEAR UP	Difference
All	0.0	-0.3	0.3*
Middle 1/3 on College Orientation Index	0.3	-0.1	0.4*
African-American	-0.1	-0.5	0.5*
Hispanic	0.2	-0.2	0.4
First-generation	0.1	-0.2	0.3

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates for the index in this table were prepared with hierarchical linear modeling (HLM). without control on baseline value of outcome.

Confidence intervals are not presented for mean scores because they have no inherent meaning.

Detail may not sum to totals because of rounding.

[24] This index has a Cronbach's alpha of 0.58. For more information, see the "Pexpect" index section of appendix C.

[25] This analysis does not control for scores of parents when their children were in seventh grade. As shown in table E-5, this subindex was well balanced at baseline, but one of its components (parent-child conversations about future college attendance) was thought to possibly be contaminated by early program activities, and so the decision was made not to control on baseline scores. When the HLM runs are performed with baseline control on parent expectations, the association on the total population slips over into statistical insignificance. The same is true for students in the middle third of the College Orientation Index and for African-American students.

More GEAR UP parents talked to their children about attending college.

Looking at two of the questions that make up the parental expectations index, table 3-2d shows significant differences were found between the two groups for discussions between parents and their children about college attendance and for parent expectations of the likelihood the child will attend college or other postsecondary school. There is evidence that more parents of GEAR UP students were talking to their children about attending college than parents of non-GEAR UP students. There was some modest evidence that GEAR UP parents were more likely to anticipate that their child will attend college. No significant difference between GEAR UP and non-GEAR UP parents' responses were found for questions on whether parents consider a four-year college to be affordable or what they expect their child's ultimate degree to be.

Table 3-2d. Association for GEAR UP with selected facets of the Parental Expectations Index

Activity or cognition	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
Percentage who				
Talked with child about college	91.8	88.7	3.1*	(0.8,5.4)
Anticipated college or other postsecondary school attendance♦	80.8	78.6	2.2†	(-0.4,4.8)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

♦ Parents who thought that the youth would continue education after high school (either immediately or eventually) and had an opinion about whether the school would be local or distant.

NOTES: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights. Detail may not sum to totals because of rounding.

Student Attitudes and Behaviors

To determine the relationship of GEAR UP affiliation with students' attitudes and behaviors regarding school, six different measures were investigated. The first two measures looked at student seriousness about school from the student's and parent's perspectives. The other four measures looked at student participation in extra-curricular activities, time spent on homework, time spent not watching TV or playing video games and parental assessments of homework efforts. Table 3-2e shows the association for GEAR UP affiliation with each of these six scales.

Table 3-2e. Association for GEAR UP with students' attitudes about and behaviors in school

Measure and subgroup	GEAR UP	Non-GEAR UP	Difference
Students' self-assessment of academic seriousness			
All	-0.3	-0.1	-0.2
Middle 1/3 on College Orientation Index	-0.3	-0.2	-0.1
African-American	-0.1	-0.1	-0.0
Hispanic	-0.5	-0.4	-0.1
First-generation	-0.3	-0.1	-0.2
Parents' report of students' academic seriousness			
All	-0.1	-0.2	0.1
Middle 1/3 on College Orientation Index	0.0	-0.3	0.3†
African-American	-0.5	-0.5	0.0
Hispanic	0.2	0.1	0.1
First-generation	-0.2	-0.2	0.1
Participation in extracurricular activities			
All	-0.4	-0.1	-0.3†
Middle 1/3 on College Orientation Index	-0.5	-0.2	-0.3
African-American	-0.7	-0.2	-0.5
Hispanic	-0.6	-0.2	-0.3
First-generation	-0.2	0.1	-0.3†
Time spent on homework			
All	-0.0	-0.0	0.0
Middle 1/3 on College Orientation Index	-0.0	-0.1	0.1
African-American	-0.1	-0.1	-0.0
Hispanic	-0.1	-0.1	0.1
First-generation	0.0	0.0	0.0
Time spent not watching TV or playing video games			
All	-0.0	-0.0	-0.0
Middle 1/3 on College Orientation Index	-0.0	-0.0	-0.0
African-American	-0.3	-0.2	-0.1
Hispanic	0.0	-0.1	0.1
First-generation	-0.1	-0.0	-0.0
Parent report of student homework diligence			
All	-0.1	-0.0	-0.0
Middle 1/3 on College Orientation Index	0.1	0.1	0.0
African-American	-0.2	-0.2	0.0
Hispanic	0.0	0.3	-0.3*
First-generation	-0.1	-0.0	-0.1

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates for the index in this table were prepared with hierarchical linear modeling (HLM) with control on baseline value of outcome.

The number -0.0 indicates that the true value of this number is less than zero but more than -0.1.

Detail may not sum to totals because of rounding.

For the first measure, an index of the student's seriousness about school was constructed that comprised five questions from the student survey that focused on the following:[26]

- How hard the student thinks he or she works in school,
- How important the student thinks it is to work hard,
- How good a student the student thinks he or she is,
- What kind of grades the student reports he or she receives, and
- How often the student is absent or skips classes.

Next, the parent's perception of the student's seriousness about school was examined as an index of items from the parent survey on the following:[27]

- Whether the parent feels the student understands his or her homework,
- What type of grades the parent reports the student as receiving, and
- How important the parent thinks the student sees schoolwork.

The next four panels of table 3-2e show other aspects of middle school life that were identified as interesting while developing the theoretical model for GEAR UP and whichwere positively correlated with the College Orientation Index.[28] The first of these consisted of questions from the student survey that asked how involved the student was in extracurricular activities and whether the parent attended school events. The next measure, based on questions from the student survey, focused on how much time the student spent on homework each week. The next measure was an index that comprised questions from the student survey, focusing on how much time a student spent watching television or playing video games. The last measure reflected how hard the student worked on homework from the parent's perspective.

[26] This index has a Cronbach's alpha of 0.57. For more information about it, see the "Academic" section of appendix C

[27] This index has a Cronbach's alpha of 0.71. For more information about the "Performance" index see appendix C.

[28] For more information about these indices, see appendix C. The scale on extracurricular activities ("ECBusy") has a Cronbach's alpha of 0.70. The scale on homework hours ("HomeworkHours") has a Cronbach's alpha of 0.80. The index on TV watching and video-game playing ("NegJunkHours") has a Cronbach's alpha of 0.53. The scale on parental assessment of student diligence ("Sdiligent") has a Cronbach's alpha of 0.64. Although all of these scales were related to the College Orientation Index, the relationships were not deemed strong enough to warrant including them in the index itself.

Table 3-2e illustrates that, with few exceptions, by the end of eighth grade, GEAR UP had shown little effect on student attitudes and behaviors in school. One exception was parents' perception of their children's seriousness about school, in which a modest relationship at the 90-percent confidence level was observed for those students scoring in the middle third of the College Orientation Index. A modest association for GEAR UP affiliation was also observed with regard to participation in extracurricular activities, in which GEAR UP students overall and those students identified as potential first-generation college students participated in more extracurricular activities at the end of eighth grade than non-GEAR UP students. The third exception was in the area of how hard the parent felt his or her child works on homework. There appears to be a negative relationship with how hard the parents of Hispanic students participating in GEAR UP felt their children were working on homework compared with Hispanic parents in the non-GEAR UP schools. One possible explanation of this result is that GEAR UP may have raised Hispanic parents' expectations for how hard they thought their children **should have** worked on homework, without a corresponding increase in the actual effort they saw their children putting into homework.

Student attitudes and behaviors were generally not affected.

Hispanic parents felt their children were not working hard enough in school.

3.3 Postsecondary Education Knowledge and Parental Involvement

In addition to raising student and parent expectations about the future, a second objective of GEAR UP is to increase their knowledge of academic entrance requirements, actual cost of attendance and availability of financial assistance to attend college. This section looks separately at the outcomes for GEAR UP on student knowledge about postsecondary issues and parent knowledge of the same issues. It also looks at parents' involvement in their children's education.

Student Knowledge of Postsecondary Education

Knowledge about course requirements for postsecondary enrollment, the application process, types of postsecondary institutions, actual cost of attendance and availability of financial assistance are important pieces of information students need to know to successfully apply to college. Although the accuracy of students' knowledge was not tested, factors to measure the students' activities to acquire knowledge about the necessary steps to prepare for postsecondary education were examined.

A single scale was created to try to summarize all these aspects of knowledge. It was constructed with eight questions from the eighth-grade student survey that focused on the following:[29]

- Whether the student had talked with a high school counselor about the classes required to graduate high school,
- Whether the student had talked with a high school counselor about the classes required to enter college,

[29] This index has a Cronbach's alpha of 0.59. For more information about it, see the "KnowPSE" section of appendix C.

- Whether the student had talked with an adult at home about the classes required to enter college,
- Whether the student had heard of two-year or community colleges,
- Whether the student had heard of four-year colleges or universities,
- Whether the student had heard of vocational, trade or business schools,
- The number of different types of people that the student had used to find about postsecondary education such as parents, siblings, guidance counselors, and so on, and
- The strength of the student's belief about the differential income that can be earned by finishing college.

This scale was also divided into more narrow constructs. One was based on just the first three components of the index. It focuses on discussions about college and course planning.[30] The second averaged together the next three. It deals with the student's familiarity with different types of postsecondary institutions.[31] Finally, the lone question about differential income was analyzed separately. (One item in the overall index was not analyzed in a separate smaller index or individually.)

More GEAR UP students talked about and made plans for college.

Table 3-3a shows evidence that GEAR UP affiliation was positively associated with students' knowledge acquisition about postsecondary education by the end of eighth grade.[32] GEAR UP students reported having more discussions about college with parents and other adults and about planning the courses they needed to take than did non-GEAR UP students. The difference between GEAR UP and non-GEAR UP students was present in all the subgroups.

More GEAR UP students knew about different types of postsecondary institutions.

In addition, GEAR UP students were more familiar than non-GEAR UP students with different types of postsecondary institutions. This difference was evident overall and for first-generation students. No significant differences were detected, however, between the percentages of GEAR UP and non-GEAR UP students who thought college graduates earned higher salaries than other individuals.

[30] This index is called TalkCoursePlanning in appendix J and has a Cronbach's alpha of 0.66.

[31] This index is called HeardOfSchools in appendix J and also has a Cronbach's alpha of 0.66.

[32] None of the analyses in this table are baseline controlled.

Table 3-3a. Association for GEAR UP with students' knowledge about postsecondary education

Measure and subgroup	GEAR UP	Non-GEAR UP	Difference	95% Confidence interval
Index of knowledge acquisition about postsecondary education				
All	0.2	-0.8	1.0*	N/A
Middle 1/3 on College Orientation Index	0.3	-0.7	0.9*	N/A
African-American	0.3	-0.8	1.1*	N/A
Hispanic	-0.1	-0.8	0.8†	N/A
First-generation	0.4	-0.5	0.9*	N/A
				N/A
Index of discussions about college and course planning				N/A
All	0.2	-0.4	0.6*	N/A
Middle 1/3 on College Orientation Index	0.2	-0.3	0.5*	N/A
African-American	0.5	-0.3	0.8*	N/A
Hispanic	0.2	-0.3	0.4*	N/A
First-generation	0.2	-0.4	0.6*	N/A
				N/A
Index of students familiar with different types of postsecondary institutions				N/A
All	0.1	-0.2	0.3*	N/A
Middle 1/3 on College Orientation Index	0.1	-0.2	0.3	N/A
African-American	0.1	-0.3	0.4	N/A
Hispanic	-0.3	-0.6	0.3	N/A
First-generation	0.2	0.1	0.3*	N/A
Percentage of students who think college graduates earn higher salaries than others				
All	59.3	59.2	0.0	(-7.1,7.2)
Middle 1/3 on College Orientation Index	58.5	57.5	1.0	(-5.7,7.7)
African-American	51.9	53.9	-2.0	(-15.6,11.8)
Hispanic	64.4	62.4	2.0	(-4.6,8.7)
First-generation	58.4	59.2	-0.8	(-8.2,6.7)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

N/A – Not applicable because confidence intervals for indices have no inherent meaning.

NOTES: Estimates for the indices (first three panels) in this table were prepared with hierarchical linear modeling (HLM) without control on baseline value of outcome. Estimates for the percentages in this table (last panel) were prepared with replicated counterfactual projection (CFP) weights.

The number -0.0 indicates that the true value of this number is less than zero but more than -0.1.

Detail may not sum to totals because of rounding.

Parent Knowledge and Involvement

Parent knowledge about and involvement in school activities are considered important aspects of student success in school. Previous research has supported this hypothesis (Carey and Farris 1996, U.S. Department of Education 1994). The index built to test the association for GEAR UP affiliation with parent knowledge and involvement in school activities included questions on the following:[33]

- Frequency of parent-teacher conferences,
- Attendance at various types of school events such as PTA meetings,
- Receipt of written information about planning a college preparatory curriculum,
- Attendance at meetings about planning a college preparatory curriculum,
- Perceived adequacy of personal information about college entrance requirements, and
- Attendance at parent workshops about financial assistance for college.

Parent knowledge and involvement were increased.

Table 3-3b shows that the estimated association for GEAR UP affiliation with parent knowledge and involvement was significant and positive. This was true overall and for three of the four subgroups examined.[34]

The estimated associations for GEAR UP with each of the questions on the parent survey that were used to create the parent knowledge and involvement index are shown in tables 3-3c and 3-3d.

GEAR UP parents had more information about planning for college.

All four of the questions about the process of parent information gathering showed a positive association with GEAR UP affiliation (see table 3-3c). While only about half of the GEAR UP parents received written materials on college preparatory curricula, this is 12 percentage points more than for parents of similar non-GEAR UP students. Similarly, only about a third of GEAR UP parents attended meetings on this same topic, but this is nearly 15 percentage points more than for parents of non-GEAR UP students. Attendance at workshops on student financial aid was still uncommon among parents in both GEAR UP and non-GEAR UP middle schools, but again, a considerably higher percentage of GEAR UP parents reported this experience. The majority of parents in both types of schools claimed having at least some information about college entrance requirements,

[33] This index has a Cronbach's alpha of 0.59. For more information on it, see the "ParInvolve" section of appendix C.

[34] Several of the variables in this index were judged to be contaminated by early GEAR UP effects in the months leading up to the baseline interviews This analysis did not control on baseline differences in the value of the index itself. Thus, the estimated effects include some baseline differences that are assumed to be attributable to pre-baseline effects of GEAR UP but could also be because of other factors.

Table 3-3b. Association for GEAR UP with Parent Knowledge and Involvement Index

	Parent Knowledge and Involvement Index		
Population	GEAR UP	Non-GEAR UP	Difference
All students	0.4	-0.8	1.1*
Middle 1/3 on College Orientation Index	0.3	-0.8	1.1*
African-American	0.0	-0.8	0.7†
Hispanic	0.5	-1.3	1.7*
First-generation	0.5	-0.6	1.1*

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates for the index in this table were prepared with hierarchical linear modeling (HLM) without control on baseline value of outcome.

The number -0.0 indicates that the true value of this number is less than zero but more than -0.1.

Detail may not sum to totals because of rounding.

Table 3-3c. Association for GEAR UP with information on college planning components of Parent Knowledge and Involvement Index

Information on college planning	GEAR UP (%)	Non-GEAR UP (%)	Difference♣	95% Confidence interval
Percentage who				
Received written materials on preparatory curricula	48.9	36.5	12.4*	(6.1,18.7)
Attended meetings on preparatory curricula	34.8	20.1	14.7*	(7.2,22.3)
Attended workshops on financial aid	16.2	9.0	7.3*	(3.7,10.8)
Received some or enough information on entrance requirements	72.1	62.3	10.2*	(4.3,16.1)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTE: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.

Table 3-3d. Association for GEAR UP with parent attendance at parent-teacher conferences and school events

Activity	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
Percentage of parents attended				
Back-to-school night	49.5	43.6	5.9*	(0.4,11.4)
PTA meetings	73.5	68.5	5.0*	(0.5,9.5)
School plays, sport events, etc.	17.2	17.1	0.1	(-3.4,3.7)
Field trips, such as museum or zoo	33.1	39.0	-5.9	(-13.1,1.3)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTE: Estimates in this table were prepared with replicated counterfactual projection (CFP) weights.

but the GEAR UP parents scored 10 points higher than their counterparts. Clearly, the evidence is strong that GEAR UP is succeeding in its goal of exposing more parents to information about college.

GEAR UP parents attended more back-to-school nights and PTA meetings.

Attendance at back-to-school nights and PTA meetings showed significant positive associations with GEAR UP affiliation (see table 3-3d). However, attendance at school plays or sports events or attendance on field trips showed no difference between GEAR UP and non-GEAR UP parents.

Other factors such as the frequency of parent-teacher conferences were tested but were not found to be significant. Attendance at parent-teacher conferences (by reason for conference) as well as parent volunteerism, which were not included in the overall index, were not found to be significant.

3.4 Orientation Toward College

The College Orientation Index attempts to measure whether a student appears oriented toward going to college.

The national evaluation cannot measure **actual** college attendance because students in the study will not graduate from high school and go to college until 2006 at the earliest. The evaluation attempted to measure the **likelihood** of college attendance as of the end of eighth grade. To do this, the College Orientation Index was constructed *a priori* based on the theoretical model for GEAR UP presented in chapter 1, empirical covariance patterns at baseline and new basic research using the National Education Longitudinal Study (NELS) on early, eighth-grade, indicators of entry into postsecondary education.

The College Orientation Index is a single measure based on information from student and parent questionnaires.[35] A student's College Orientation Index score is an attempt to summarize all of the elements from those questionnaires that are considered predictive of going on to college. The index is intended to indicate the degree to which a student appears to be oriented toward attending college.

Before discussing the findings regarding the College Orientation Index, this section briefly describes the construction and validation of the index. A more lengthy discussion can be found in the appendices, Appendix C, Index Construction, and Appendix D, Index Validation.

Index Construction

The eighth-grade College Orientation Index summarizes information from the student and parent surveys that were completed at the end of eighth grade. As discussed in detail in appendix C, the College Orientation Index is the compilation of six separate concepts (constructs) that are believed to show a student's likelihood of attending college.

The first concept measures the student's view of his or her own current performance in school and comprises responses to questions on the following:

- How hard the student thinks he or she works in school,
- How good a student he or she thinks he or she is,

[35] The College Orientation index was constructed, validated and subjected to external review by the Technical Review Group for the evaluation prior to inspection of eighth-grade data. Using the index sharply reduced the expected rate of false positive findings resulting from the multiple comparison problems. Using a single index can result in a lack of sensitivity to program effects in a narrow portion of the range of effects expected. It is also difficult to translate effects of the index into utility estimates. Thus, a mixed approach was used in analyzing the major subindices of the index, a few individual variables that were judged to be of critical importance (such as self-assessed likelihood of attending college and the individual variables within subindices where significant effects were observed). The first two steps were undertaken to improve sensitivity to localized efforts. The last step was undertaken to contextualize the effects in a way that might be more easily understood.

Transcript and administrative information (attendance, disciplinary actions, course taking, actual grades and standardized test scores) were excluded from the index. Standardized test scores could not be used because there were no tests in common across the entire sample. The other data were not used because the authors wanted to define the index in such a way that it was possible to construct both pretest and posttest versions of the index. This procedure had two benefits. First, it made it possible to control on the baseline value of the index in the multi-level modeling. This reduced variances and probably reduced selection biases. Administrative data were first collected in late seventh grade, and transcript data were not collected until after the end of eighth grade. Thus, baseline information was not available from these sources. If these sources had been built into the index, it would not have been possible to control on the baseline value of the index in the analysis. In addition it was later determined that the transcript data were subject to very high intraclass correlation, which would have made the index far noisier and harder to interpret.

The College Orientation Index consists of items that met two criteria. First, the items had to measure areas of student or parent thoughts or behavior that the conceptual framework suggested could be influenced by GEAR UP and would improve the student's chances of attending college. Next, the items had to be either useful in building a predictive model for college enrollment or highly correlated with other variables which did meet this criterion.

- How important the student thinks it is to work hard in school,
- What kind of grades the student says he or she gets in school,
- How often the student reports being absent from school, and
- How often the student reports skipping class.

The next concept measures the student's postsecondary aspirations. It includes responses to questions on the following:

- How likely the student thinks it is that he or she will go to college,
- How important the student thinks it is to go to college,
- How far the student thinks he or she will go in his or her education,
- What sort of education the student thinks is required for the job he or she wants to have at age 30,
- Whether the student has heard of four-year colleges,
- Number of people the student reports talking to about postsecondary education, and
- Whether the student thinks people who attend college have higher salaries than those who do not.

The third concept measures the student's report of discussions with his or her parents. It contains responses to questions about school activities and events; new knowledge from class; grades; community, national and world events; and things that were bothering the student.

The next concept in the College Orientation Index consists of a single question that measures how much time the student spent reading for pleasure.

The last two concepts come from the parent surveys. One concept measures the parent's view of the student's performance and is made up of responses to questions on the student's understanding of homework, grades received and the student's view of the importance of hard work. The final concept measures the parent's postsecondary aspirations for the child. It is based on the following:

- Discussions with the child regarding college,
- Ultimate degree expectations for the child,
- Whether the parent envisioned the child attending a college away from home, and

- Parent's perception of the affordability of college.

Index Validation

The College Orientation Index was validated using the National Education Longitudinal Study (NELS:88), a widely used longitudinal study of students, starting in their eighth-grade year. For this validation test, questionnaire items from the NELS:88 eighth-grade survey that matched the questions that made up GEAR UP's College Orientation Index were identified. Out of the 22 questions that make up the College Orientation Index, 12 similar questions were identified in NELS:88. These 12 NELS:88 questions were used to create a NELS:88 College Orientation Index.

NELS was used to validate the College Orientation Index's predictability.

Next, the NELS:88 follow-up surveys were used to determine which students actually attended college after high school. Using multiple regression, the relationship between the NELS:88 College Orientation Index score and the student's actual college attendance was measured. (See appendix D for a more complete explanation of the creation and use of the NELS:88 validation process.)

Parent education and race characteristics were used as control measures. In an effort to replicate the target GEAR UP population, the analysis was limited to those NELS:88 students with a low family income.

The NELS:88 validation test showed that, for the students studied, as the NELS:88 College Orientation Index rose, so did the likelihood of the student attending college. In addition, the NELS:88 College Orientation Index correctly predicted students' college attendance 75 percent of the time.

The NELS:88 College Orientation Index was based on only 12 of the 22 GEAR UP College Orientation Index items. Adding the remaining 10 items, if possible, to the NELS:88 College Orientation Index would have increased the predictive ability of the index because the GEAR UP College Orientation Index items were so closely related to others within the same cluster. Given this relationship and because the NELS:88 Index had such a high predictability based on only 12 of 22 items, the GEAR UP College Orientation Index is believed to be a good predictor of a student's likelihood of attending college.

Tables 3-4a and 3-4b show that the average values for the College Orientation Index varied widely by students' perceptions of their academic standing, by their beliefs about the value of college, their current intention for college enrollment, their ultimate education goals and by their parents' expectations for them. Students with positive scores on the index report mostly grades of As and Bs in their classes, are convinced that those who attend college make more money, aspire to college themselves, expect a bachelor's degree or higher and have parents who expect them to earn a bachelor's degree or higher.

Table 3-4a. Average values on selected student questions in GEAR UP College Orientation Index

Question and responses	Score on College Orientation Index	
	Average	Standard error
Thinking about the last school year, how would you describe your grades?		
Mostly As	9.4	0.70
As and Bs	4.0	0.48
Mostly Bs	-1.0	0.66
Bs and Cs	-3.6	0.45
Mostly Cs	-8.6	0.71
Cs and Ds	-10.2	0.71
Mostly Ds or below	-16.1	1.31
In general, do you think a person who finishes college makes more money in a year than a person who does not finish college?		
Definitely	2.5	0.57
Probably	-2.3	0.42
I doubt it	-10.4	0.92
Definitely not	-12.1	1.72
Don't know	-9.1	0.73
How likely are you to go to college?		
I will definitely go to college	5.1	0.53
Probably	-2.5	0.43
May	-8.3	0.55
Probably not	-13.3	1.03
Definitely not	-19.2	1.91
Don't know	-14.0	0.82
How far in school do you think you will get after high school?		
A certificate from a vocational, trade or business school (less than a two-year program)	-8.2	0.96
A two-year degree from a community college or an Associate's degree	-5.5	0.59
A four- to five-year degree from a college or university or a Bachelor's degree	1.6	0.37
A graduate or professional degree such as an M.A., Ph.D., J.D. or M.D.	7.8	0.60
I'm not going to school after high school	-18.7	1.38
I don't know	-5.7	0.56

Table 3-4b. Average values on parent question in GEAR UP College Orientation Index

Question and responses	Score on College Orientation Index	
	Average	Standard error
How far in school do you think [child] will get?		
Child will not continue past high school	-11.5	0.49
A certificate from a vocational, trade or business school	-7.5	0.57
Associate's degree	-2.7	0.60
Bachelor's degree	2.8	0.57
Graduate or professional degree	5.1	0.66

College Orientation Index Results

As shown in table 3-4c, there was no detection of significant associations with GEAR UP affiliation and the likelihood of attending college as predicted by the College Orientation Index. This was true overall and for each of the four subgroups analyzed. Average scores for both GEAR UP and non-GEAR UP students were negative. Differences between the two groups were generally much smaller than those shown in table 3-4a. Confidence intervals were also generally narrow relative to gaps in table 3-4a. For example, the difference in the College Orientation Index between those definitely intending to enroll and those who think they will probably enroll is 2.6 points. In contrast, the half width of most of the confidence intervals in the top panel of table 3-4a is on the order of 1.5 points.

A significant relationship, however, was found on the parent subindex for those scoring in the middle third on the overall College Orientation Index. As discussed in section 3.2, this is most likely a result of increased discussions with the youth about college.

3.5 Pulling It All Together

Positive associations with GEAR UP affiliation were detected for several of the outcome measures even though the period of time over which middle school students and their parents in the national evaluation received GEAR UP services was less than 24 months. Table 3-5 provides a summary of GEAR UP's relationships with the outcome measures identified in the evaluation's conceptual framework, organized by the theorized progression for change.

The best evidence for effect by the GEAR UP program was observed in the area of knowledge, with increases in parent knowledge about postsecondary education requirements and availability of financial aid showing the strongest associations with GEAR UP affiliation. There was evidence of increases in knowledge of the same issues for GEAR UP students. Because parents and students were not tested on the accuracy of their knowledge about college-related information, this measure could be considered

Table 3-4c. Association for GEAR UP with the College Orientation Index

Measure	GEAR UP	Non-GEAR UP	Difference	95% Confidence interval
College Orientation Index at end of eighth grade				
All	-0.6	-0.6	-0.0	(-1.2,1.2)
Middle 1/3 on College Orientation Index early in seventh-grade	-0.2	-0.5	0.4	(-1.0,1.8)
African-American	-1.5	-1.6	0.1	(-1.3,1.4)
Hispanic	-0.2	-0.4	0.2	(-1.9,2.3)
First-generation	-0.5	-0.3	-0.2	(-1.4,0.9)
Subindex of student-reported items				
All	-0.6	-0.4	-0.1	(-1.0,0.8)
Middle 1/3 on College Orientation Index early in seventh-grade	-0.5	-0.5	-0.0	(-1.0,0.9)
African-American	-0.9	-0.9	-0.0	(-1.1,1.1)
Hispanic	-0.7	-0.5	-0.2	(-1.7,1.3)
First-generation	-0.4	-0.2	-0.2	(-1.1,0.6)
Subindex of parent-reported items				
All	-0.1	-0.3	0.2	(-0.3,0.7)
Middle 1/3 on College Orientation Index early in seventh-grade	0.3	-0.3	0.6*	(0.0,1.2)
African-American	-0.5	-0.8	0.3	(-0.4,0.9)
Hispanic	0.5	-0.0	0.5	(-0.2,1.2)
First-generation	-0.1	-0.2	0.1	(-0.3,0.6)

* Statistically significant differences at the 5-percent level.

† Statistically significant differences at the 10-percent level.

NOTES: Estimates for the index in this table were prepared with hierarchical linear modeling (HLM) with control on baseline value of outcome.

The number -0.0 indicates that the true value of this number is less than zero, but more than -0.1.

Detail may not sum to totals because of rounding.

Table 3-5. GEAR UP outcomes for all students and subgroups of interest

Measure	All	Middle 1/3 on College Orientation Index	African-American	Hispanic	First generation
Knowledge					
Parent	*	*	†	*	*
Student	*	*	*	†	*
Behavior					
Parent involvement	*	*	†	*	*
Science course-taking	*	*	Ø	*	*
Academic achievement	Ø	Ø	Ø	Ø	Ø
Academic rigor	Ø	Ø	*	Ø	Ø
Attendance	Ø	Ø	Ø	Ø	Ø
Academic seriousness	Ø	Ø	Ø	Ø	Ø
Homework diligence	Ø	Ø	Ø	Ø	Ø
Expectations					
Parent	*	*	*	Ø	Ø
Student	Ø	Ø	Ø	Ø	Ø
College attendance	N/A	N/A	N/A	N/A	N/A
College success	N/A	N/A	N/A	N/A	N/A

* Evidence (95% or greater confidence).

† Modest evidence (90 to 95% confidence).

Ø Test for association has p-value larger than 0.10.

more indicative of GEAR UP's implementation process as opposed to the achievement of program goals. These process variables help build the case that any improvements in the likelihood of students' attending college would be reasonably attributable to GEAR UP because GEAR UP distributed the information. Clearly, however, the receipt of information by itself does not demonstrate changes in behavior.

The second stage in the process of attaining GEAR UP's overarching goal is to change student and parent behaviors related to the student's current education. Because of the close relationship between parent knowledge and parent involvement, as discussed previously, evidence of a positive outcome for GEAR UP is also detected in the area of parent involvement in his or her child's education. Among students, the evidence for effects on behavior is weaker. There was a positive association of GEAR UP status with above-grade-level science course-taking, and there was an association among African-American students with the number of academically rigorous courses being taken. Beyond that, there was very little evidence of any effects on seriousness about school, study habits or any other student behavioral variables.

The third stage is to change long-term expectations and intentions. The analysis indicates that there was evidence that parents' expectations for their children increased although there was no change in the measure of the students' expectations about attending college.

The College Orientation Index summarizes into a single number for each child: self-assessed seriousness about school, parent-assessed seriousness about school, self-reported expectations and intentions, parent-reported expectations and aspirations and the intellectual richness of the home atmosphere in terms of parent-child discussions and reading for pleasure. The resulting analysis of the College Orientation Index shows no difference at that time in the prospective likelihood of college attendance between the two groups.

In summary, the national evaluation observed that GEAR UP succeeded in exposing more parents to information about college than would have happened in the program's absence. This accomplishment does appear to have led to increased parent expectations for some groups, particularly in the area of increased parent-child discussions about the possibility of college attendance. As with parents, the program has also been successful in exposing students to information about college. It remains to be seen whether these changes will translate into stronger intentions and striving on the part of students. The evidence thus far is negative, but it may have been too early to make that measurement because the students had been affiliated with GEAR UP for less than two years.

4. GEAR UP Middle Schools

GEAR UP also seeks to affect schools.

In addition to having a direct effect on students and their parents, GEAR UP aims to effect change in the partner schools these students attend. As depicted in the conceptual framework (see figure 1-1), the intended outcomes for schools include a more challenging curriculum and higher teacher and staff expectations for students. Through GEAR UP-sponsored professional development opportunities, GEAR UP expects to increase teachers' knowledge of how best to prepare low-income, disadvantaged students for postsecondary education. In addition, by raising teachers' expectations of students, GEAR UP aims to effect a positive change in the school environment that will continue even after the GEAR UP project has moved out of the school.

To understand the changes that may be taking place in middle schools as a result of GEAR UP, this chapter uses data from focus groups and class catalogs to address the following questions.

- Are there differences in academic curricula offered at GEAR UP and non-GEAR UP schools? Is there evidence of change at GEAR UP schools resulting from GEAR UP? [Source: school class catalogs and class listings.]
- Does GEAR UP provide professional development opportunities for teachers? [Source: project staff interviews and teacher focus groups.]
- Are changes in teachers' attitudes evidenced by their educational expectations for students and perceptions of change in students attributable to GEAR UP? [Source: teacher focus groups.]

4.1 Academic Curriculum

The importance of a rigorous academic curriculum has been shown in several research studies to be a strong predictor of postsecondary attendance (Mathtech 1998; U.S. Department of Education 1997). The academic classes students take in middle school are an important aspect of the process of preparing students for high school and postsecondary education. This relationship is particularly well documented in mathematics, where taking advanced mathematics courses in high school increases a student's likelihood of attending college (Warburton, Bugarin, and Nuñez 2001). For students to take the appropriate mathematics classes at the high school level, it is recommended that algebra be completed by the end of eighth grade. Thus, algebra is frequently referred to as a "gateway" class. Other classes that improve students'

likelihood of continuing their education beyond high school are advanced English, advanced science and foreign language.[36]

Of first concern is whether any of the gateway classes in the four core academic subject areas (mathematics, science, English, foreign language) were even available to students. All 18 of the GEAR UP schools and 17 non-GEAR UP schools in the national evaluation provided information about their curricula during the study period. They provided information for seventh- and eighth-grade students through school class catalogs, master schedules and interviews with guidance counselors. Table 4-1 provides summary information about the gateway classes and the number of rigorous classes the schools in the national evaluation offered across the four subject areas.

Overall, more GEAR UP schools offered advanced classes.

GEAR UP and non-GEAR UP schools had both similarities and differences. Algebra was the most prevalent gateway class available to both GEAR UP and non-GEAR UP students. All but four GEAR UP and four non-GEAR UP schools offered algebra as part of their middle school curriculum. The greatest difference between GEAR UP and non-GEAR UP schools was in honors or above-grade-level science class offerings. Twice as many GEAR UP schools offered above-grade-level science classes compared with non-GEAR UP schools. Conversely, non-GEAR UP schools were more likely to offer foreign language classes than the GEAR UP schools, with nearly two-thirds of the non-GEAR UP schools offering foreign language classes to students compared with one-half of the GEAR UP schools.

In the sampled schools in the national evaluation, the number of gateway classes offered to middle school students ranged from none to four in the core academic subjects. Nine GEAR UP schools offered advanced classes in at least three subject areas, with six schools offering more rigorous classes in all four core subject areas. By comparison, six of the non-GEAR UP schools offered three or more rigorous classes with only one school offering rigorous classes in all four subject areas.

Typically, guidance counselors assigned students to classes.

Many of the schools offered the gateway classes. However, the student generally did not decide which classes he or she would take; that decision was usually made by the school's guidance counselor. This was true for both GEAR UP and non-GEAR UP schools. Middle school students were generally assigned to their core academic classes by the guidance counselor without any input from students or parents. Guidance counselors reported that students either had no choices or they had limited selection opportunity. In all but a few cases, class selections were limited to electives such as band, chorus and art. Eighth-grade students in only three of the GEAR UP and two non-GEAR UP schools were permitted to choose classes other than their electives. Fewer schools offered students the opportunity to select classes at the seventh-grade level; two GEAR UP schools and one non-GEAR UP school allowed students input into class selection other than electives.

[36] Advanced classes may also be referred to as honors or above-grade-level classes by different schools.

Table 4-1. Comparison of gateway curricula at GEAR UP and non-GEAR UP middle schools in the national evaluation sample

Curriculum	Number of schools	
	GEAR UP	Non-GEAR UP
Number of schools providing information	18	17
Number of schools offering		
Algebra	14	13
Honors or above-grade-level English	7	6
Honors or above-grade-level science	9	4
Foreign language	9	11
Number of rigorous classes offered		
None	2	2
One	4	2
Two	3	7
Three	3	5
Four	6	1
Changes between SY 1998–99 and SY 1999–00	6	0
Mathematics	1	--
Science	1	--
Arts and humanities	2	--
Other	2	--
Changes between SY 1999–2000 and SY 2000–01*	6	8
Mathematics	4	4
Science	1	1
Arts and humanities	0	3
Other	2	2

* Some schools made changes in more than one area.

NOTE: Classes identified as honors or above grade level were classified as rigorous.

SOURCES: Course catalogs, master schedules and guidance counselor interviews; spring 2001 and 2002.

Few curriculum changes were made at GEAR UP schools between school years 1998–99 and 2000–01.

Both the GEAR UP and non-GEAR UP schools provided information about curriculum changes between school years 1998–99 and 2000–01. Between school years 1998–99 and 1999–2000, six GEAR UP schools indicated they made changes to their curriculum for academic courses (see table 4-1). Only one of these schools made a change in its mathematics curriculum, which resulted in all seventh-graders taking some form of pre-algebra. Two schools made changes in their arts and humanities curriculum; two made changes to their science curriculum; and one raised its overall academic standards. None of the non-GEAR UP schools made any changes to their curriculum during this period.

A few schools added or increased enrollment in pre-algebra and algebra.

The following year, school year 2000–01, six GEAR UP schools and eight non-GEAR UP schools indicated they made changes to their academic curriculum. Four GEAR UP schools changed their mathematics curricula by either updating the curricula, making all eighth-grade mathematics classes some form of algebra, adding geometry to their course offerings or offering pre-algebra to seventh- and eighth-grade students with high mathematics test scores. Four non-GEAR UP schools also made changes to their mathematics curricula. Three non-GEAR UP schools either updated their mathematics curricula or began offering algebra and pre-algebra to advanced students. The remaining non-GEAR UP school dropped algebra from its curriculum because school administrators

felt their students were not ready for the class. As with the prior year, other changes were primarily in the areas of arts and humanities and science.

Guidance counselors frequently used standardized test scores or teacher recommendations to assign students to classes.

Most of the schools participating in the national evaluation had only one guidance counselor for each grade, and some schools had only one counselor for the entire middle school. The counselors indicated that this limited their ability to meet with students to discuss class selection. Guidance counselors reported that they used multiple sources to determine class assignments for each student. The most frequently cited sources by counselors in both GEAR UP and non-GEAR UP schools were results of standardized tests, recommendations from the students' current teachers and current class grades within subject area (see table 4-2). If counselors only consulted one source for determining in which classes to enroll students, they tended to rely on teacher recommendations. This process varied little by subject and type of school.

Table 4-2. Number of schools in the national evaluation sample using each source for determining class assignments

Source	GEAR UP	Non-GEAR UP
Number of schools providing information	18	17
Standardized test scores	10	9
Teacher recommendations	6	7
Grades	9	6
Education plan	1	3
Administrator request	1	1

SOURCE: Guidance counselor interviews, spring 2001 and 2002.

4.2 Professional Development Opportunities

GEAR UP provided additional professional development opportunities to teachers.

To meet some of the core objectives of the GEAR UP program, most of the GEAR UP grantees provided teachers in GEAR UP schools with additional opportunities to undertake professional development beyond those already offered by the school districts. During site visits, GEAR UP project staff provided information about professional development opportunities for teachers. (This information was obtained only from GEAR UP schools.) GEAR UP-sponsored professional development was used to expose teachers to a variety of academic and college preparatory activities that they could then use to enhance their classroom teaching. Projects also used professional development as the means for discussing with teachers their attitudes toward their students and their perception of the potential for students in their schools to continue their education beyond high school. In addition, teachers became aware of, and learned about, the GEAR UP program and its objectives through professional development sponsored by the GEAR UP project.

Some professional development focused on teacher attitudes toward students' potential for postsecondary education.

Consistent with other professional development provided by the school districts, GEAR UP-sponsored professional development was delivered by four different means:

- **Workshops and Seminars.** More than one-half of the projects visited offered some kind of workshop or seminar focusing on numerous topics, such as vertical teaming, leadership, conflict resolution, school culture and specific content areas.

- **Training Sessions.** Training sessions were held by more than one-half of the projects on such topics as different types of software, teaching methods, interpreting test scores, learning style and career interest inventories and new programs the schools were implementing.

- **Conferences.** Teachers at a few schools attended conferences through GEAR UP. Teachers attended state and national level conferences, including the National Science Teachers Conference and the GEAR UP national conference.

- **Other Activities.** A few projects offered professional development opportunities in addition to workshops and seminars, trainings and conferences. These activities included a teacher college day, book discussion groups and discussion groups focusing on educational issues.

About one-half of the projects provided services to teachers using only one of the four delivery modes above, while others used several modes to address their objectives. Professional development was most commonly provided in the form of workshops covering a variety of topics at various sessions. Some projects periodically offered a range of services, while other projects held professional development programs on a regular basis (once a week or month).

GEAR UP staff generally did not provide the professional development themselves.

In some instances, GEAR UP actively participated in delivering the professional development. For the most part, however, GEAR UP projects either arranged the professional development for the teachers through vendors or paid for teachers to attend professional development offered through other organizations not connected to GEAR UP. Project staff required that the professional development be consistent with the project's objectives.

Professional development was linked to the projects' goals.

In general, there appeared to be a connection between the amount of services offered to teachers and the inclusion of professional development in a project's goals. For one project in particular, professional development was the one aspect around which the project seemed to center. The underlying reasons projects gave for including professional development in their goals focused on the belief that professional development was the primary means for the following:

- Promoting systemic change in the school,

- Sustaining the GEAR UP program once the grant ends, and

- Designing and promoting rigorous academic course work.

Professional development opportunities increased over the course of the study.

A substantial increase in professional development opportunities for teachers was observed at the 18 projects between the first and second years of the GEAR UP program. The availability of professional development had stabilized by the third year. The emphasis on professional development in relation to other activities, however, did change at a few sites. While about one-half of the projects offered the same services in the third year as in previous years, other projects provided the same types of services as before but addressed different topics. During school year 2001–02, one project arranged for teachers to enroll in graduate courses for credit at a local college; this opportunity had not been available during the previous years. Two projects that had not previously included professional development opportunities as a part of their grant added these services for teachers. Another project shifted its focus to preparing students for college through professional development in mathematics and language arts, and a fourth changed its approach from focusing on mathematics and language arts instruction to concentrating on a character education program.

Teachers voiced different opinions on the value of the professional development they received.

During focus group discussions, teachers talked about the various GEAR UP-sponsored professional development activities they participated in and gave their opinions about the value of the sessions. There was some variation in how useful or relevant teachers felt it was to GEAR UP's purpose. Teachers who voiced positive feedback on professional development commented that

- The sessions were informative and useful,
- They were able to incorporate the material into their classroom instruction, and
- The information helped them stay current in their field.

Additional comments from teachers focused on the interaction with the GEAR UP projects. Teachers commented that they felt the GEAR UP coordinator seemed very concerned about what the teachers wanted. They were also very pleased with the ease by which they could obtain professional development training.

The assessments on the value of the professional development, however, were not uniformly positive across sites. The most common complaints cited by teachers were as follows:

- The purpose of the session was unclear,
- The project's expectations for teachers were unclear,
- The quality of the material was poor,
- The topics were unrelated to the project's goals, and
- The sessions offered did not address their needs.

It is important to note that there were generally fewer complaints in the 2001–02 school year than in the previous year.

4.3 Teacher Attitudes

One of GEAR UP's goals is to generate a more positive attitude among teachers that low-income, disadvantaged students can succeed at postsecondary education. Teachers at the GEAR UP schools in the national evaluation were given the opportunity to talk about GEAR UP in their schools and their perceptions of its effect on students. Focus groups were held with seventh- and eighth-grade teachers in the GEAR UP schools in spring 2001 and 2002, providing a way to garner any changes in teachers' educational expectations for their students. (Focus groups were not held with teachers in non-GEAR UP schools.) Because many of the teachers were at the schools when GEAR UP was first implemented in fall 1999, they had experienced GEAR UP's integration into their schools over the three years. Evidence of change in teacher attitudes was looked for in spring 2002 focus group discussions versus spring 2001. Teacher perceptions of GEAR UP and whether they attributed positive changes in their students to GEAR UP were other areas where potential change was examined.

Higher Expectations for Students

Educational expectations for students beyond high school varied across projects.

Teachers' expectations increased at some schools.

Teacher expectations of educational attainment for their students beyond high school varied across projects. While teachers in all focus groups did not extensively discuss their academic expectations for students, the discussions that did occur showed little change, in general, between the two years in teachers' educational expectations for their students. There were, however, some notable exceptions. Between spring 2001 and spring 2002, teachers at a few schools reported that their own expectations of students in their schools had increased. This was supported at one school by teachers' beliefs that the rate at which students pass algebra would increase as a result of the tutoring provided by the GEAR UP project.

Such positive changes in expectations were not found at all the national evaluation schools. For example, teachers at one school felt that GEAR UP would not affect who goes to college; they felt that the students who would ultimately continue their education beyond high school would do so without GEAR UP. These teachers, who were strongly opposed to an incentive program established by GEAR UP to change student behaviors, felt that there was no real change in students' attitudes toward postsecondary education as a result of GEAR UP. Teachers at a few schools felt that the majority of their students would not attend college and gave proportions of students they believed would. They felt that a variety of barriers would prevent the students at their schools from attending college, such as finances, low self-esteem and parents placing a low value on education. While some of the barriers cited are "targets" of GEAR UP, others mentioned by teachers, such as teen pregnancy and family situations, are not necessarily as central to GEAR UP.

There were also some conflicts in expectations among teachers within two schools. Teachers at these schools had mixed views on GEAR UP's association with students' academic achievements and long-term educational expectations. For example, in one school, seventh-grade teachers reported seeing college as a possibility for students who they would not have previously thought would consider college. Eighth-grade teachers at

this school said they had not changed their expectations because they encourage all of their students to think about college.

Perception of Change in Students

Most teachers viewed GEAR UP positively.

An indicator that GEAR UP is achieving its goal of expanding teacher opinions about the academic futures of their students is evidence that teachers believe their students have changed, and, thus, their prospects are improved. Most of the teachers who participated in focus groups had positive perceptions of GEAR UP and attributed positive changes they observed in their students to the program. In all but two of the schools visited, teachers had very positive views of the GEAR UP program, particularly with respect to GEAR UP's effect on short-term student achievements.

Teachers attributed some positive behavior changes in students to GEAR UP.

Among the short-term changes in student behaviors teachers attributed to GEAR UP as a result of the tutoring provided by the project were the following:

- Increased college awareness,
- Increased numbers of students wanting to go to college, and
- Improved grades.

Through the activities provided by the GEAR UP projects, teachers believed students had benefited in several ways:

- **Knowledge.** Teachers believed students had learned about a variety of topics related to higher education and had been introduced to careers that otherwise would have remained unknown to them. Teachers at many schools voiced the opinion that GEAR UP helped students see college as a reality, got students thinking more about college, and as a result, the teachers felt that students had become more confident that they could attend college. In addition, teachers felt GEAR UP had helped improve students' outlooks about the future and increased their aspirations and career goals.
- **Awareness.** Teachers felt that as a result of GEAR UP activities, students had become increasingly aware of options available to them. At one school, teachers felt that GEAR UP had helped Latino girls overcome the cultural belief that they have to stay at home. Teachers at another school specifically stated that they felt GEAR UP had affected gender roles in mathematics and science by increasing girls' awareness of the importance of doing well in those subjects. GEAR UP was also credited with helping students have a better idea of the options available to them to pursue as they get older.
- **Behavior.** Teachers perceived increases in student motivation, focus and self-esteem. Teachers saw students' attitudes toward learning become more positive and felt that students were choosing more difficult classes because they knew they needed them for college,

whereas teachers believed that before GEAR UP, students were just taking the classes needed to graduate from high school. Teachers noted increases in the number of students enrolling in their honors programs, taking pre-advanced placement classes and joining the Junior National Honors Society. Students who had not actively participated in the classroom before GEAR UP were observed to be making a more concerted effort. Teachers believed that suspension rates also declined.

- **Academic Performance.** Several teachers associated the presence of GEAR UP in their schools with increased student academic performance. Teachers were of the opinion that students were more concerned than they had been in the past about improving their grades because they wanted to go to college. Teachers were also of the opinion that GEAR UP contributed to students' improving their grades and test scores. At several other schools, teachers believed GEAR UP had improved students' academic achievements by increasing the number of students taking higher level classes.

GEAR UP created a positive academic climate.

A positive change in the academic climate was noted by teachers in two schools, which they believed was brought about by the GEAR UP projects. Several teachers at one of the schools believed GEAR UP had made it "acceptable" to be smart, which was an attitude they said had not existed among students before GEAR UP. Teachers at the other school noted that GEAR UP created a new "reading culture." GEAR UP was credited with helping cultivate what teachers termed a "college culture," where teachers no longer heard students say they could not go to school because of money.

Teachers attributed students' short-term achievements to GEAR UP.

Thus, by spring 2002, teachers at nearly all of the schools in the national evaluation felt that students had benefited from GEAR UP, although there was little evidence of change in teacher long-term expectations for students. Teachers attributed a variety of students' short-term achievements to GEAR UP, such as increased college awareness and academic performance. In addition, at a few schools the teachers' educational expectations for students appeared to increase. The long-term changes that teachers anticipated as a result of GEAR UP included increasing numbers of students passing algebra and more students attending college.

There was some change in teachers' perceptions of students.

As discussed in Chapter 3, by the end of eighth-grade, GEAR UP had not achieved all of its goals for students. The important factor here was that teachers' perceptions of GEAR UP students had changed; teachers participating in focus groups believed that GEAR UP students were somehow different as a result of the GEAR UP program.

5. Partnership Projects

The central focus of this report is to examine the outcomes for GEAR UP on students, their families and schools through the middle school years. It seems appropriate, however, to have an understanding of these GEAR UP programs and the context within which services were provided and outcomes were attempted. (For a more extensive description of the GEAR UP projects, see the evaluation's earlier report titled *National Evaluation of GEAR UP: A Summary of the First Two Years*.) GEAR UP legislation prescribes a partnership structure for grantees and stipulates overarching objectives for the projects. The legislation suggests several areas in which projects might focus their goals but does not prescribe specific goals or services. In this chapter, the following questions are addressed:

- What do GEAR UP partnerships look like? Have they used the partnership to their advantage?
- How did projects select their goals, and do they plan to meet the program's overall objectives?
- How are GEAR UP projects organized and managed?
- What role do partners play?
- How does GEAR UP interact with other programs?
- What plans do projects have to evaluate themselves?

5.1 Composition of Partnerships

One of the objectives of the GEAR UP program is to establish strong and lasting partnerships that would continue to provide support to schools beyond the grant period. The GEAR UP legislation stipulates the following:

- Partnerships must, at a minimum, consist of a school district, an institution of higher education and two other partners that could be community-based organizations (CBOs), businesses, state agencies or other public or private organizations.
- The members of the partnership must cover at least 50 percent of the operating costs of the program either through monetary or in-kind contributions.

Most partnerships participating in the national evaluation comprised four or five partners, with one partner being the lead. The lead partner was the fiscal agent for the grant. Although most partnerships visited consisted of one or two school districts, one or two postsecondary institutions and two CBOs, a few projects consisted of as many as 10 or 11 partners. Those projects with the greatest number of partners were more likely to have multiple higher education institutions involved in the partnership.

There was little variation in the overall composition of the GEAR UP partnerships, at least among those sites visited. There were, however, differences in the numbers of each type of partner and which partner was the lead organization. For those projects in the national evaluation, the lead partner was:

- a school district (eight projects),
- a two-year postsecondary institution (six projects), or
- a four-year postsecondary institution (six projects).

CBOs associated with the 20 GEAR UP projects visited were a wide range of educational and noneducational organizations.

Several projects included a local business as a partner in their grant. Businesses typically became involved with GEAR UP because the lead organization had a previous relationship with the business, or the business had previous involvement with the school being served or the school district. In at least one case, the business became involved with the GEAR UP project through a personal friendship with a school district official who was involved with GEAR UP. GEAR UP staff at a number of partnerships expressed interest in seeking more business representation in their projects.

Projects replaced partners as necessary during first two years.

During the first two years, grantees experienced significant changes in the composition of their partnerships. Projects reported losing partners, including CBOs, due to a variety of factors. In several cases, the partner organization ceased to exist, or the business was beginning to fail and was unable to fulfill the services that it had agreed to provide. Other projects lost partners because of changes in leadership within the partner organizations themselves. Through interviews, it was also apparent that new staff within the partner organizations frequently did not have the same level of commitment to the GEAR UP project that the original member who signed the agreement did.

By the third year of their grants, a few projects had only one of the original CBOs remaining. Projects typically replaced the CBOs that dropped out with several additional partners. For the most part, these new partners tended to be community organizations, parent-teacher organizations or educational programs, such as school-to-work and MESA.[37] Other partners involved in GEAR UP projects included the following:

[37] MESA stands for the Mathematics, Engineering and Science Achievement Program. This is a "hands-on" program that has been developed by several university engineering departments. AVID stands for Advancement Via Individual Determination. This program is designed to help underachieving students with high academic potential prepare for entrance into a four-year college.

- Local health departments, religious organizations and chambers of commerce,
- League of United Latin American Citizens,
- American Indian Resource Centers, and
- The National Guard.

When recruiting partners for their projects, the lead organizations reported that one of the most important considerations for selection was a previous working relationship. Many of the partners had a history of collaboration on other grants and initiatives such as School-to-Work or partners who had provided assistance in the past to the schools selected for participation in GEAR UP. The lead organizations also felt the partners brought critical resources and connections to the endeavor. One project noted that the GEAR UP partnership was built on a previously existing program, so it made sense to include that organization in the operation of the GEAR UP project.

Partnership composition stabilized by the third year.

By the third year, the composition of the partnerships participating in the national evaluation had stabilized. About one-half of the projects reported no changes in partners during the third year. Of those that did experience changes, a few acquired new partners and in some cases, programs replaced lost ones. In most instances, these new partners were additional higher education institutions; in one case, the project added a local business as a partner.

5.2 Projects' Goals for Meeting Program Objectives

Projects defined their own goals within broader objectives of the GEAR UP program.

While the legislation states the overall objectives of GEAR UP, each project defines its own goals as to how best to meet the program's objectives given the specific needs of the student population it is serving. Most of the projects participating in the national evaluation focused on a few goals. Several projects, however, maintained a much broader focus and outlined as many as five or six specific goals.

During meetings with site visitors, a couple of the projects discussed the underlying model or educational philosophy that guided them. One project described its method as a holistic approach to achieving the ultimate goal of increasing students' awareness of and preparation for college as well as the number of students attending college. Another project's philosophy was that every child should have an opportunity to learn and be provided an educational environment that strives for excellence. One project saw GEAR UP as a school reform opportunity that it hoped to expand to the entire school.

The goals most frequently discussed by the partnerships fell into the following categories: academic achievement, college preparation, college awareness, professional development and curriculum reform. Other goals cited less frequently were parental involvement and career preparation.

Virtually every project stated a goal related to **academic achievement.** Examples include those listed below:

- Addressing academic deficiencies in specific subjects,
- Having all GEAR UP participants take algebra by the eighth or ninth grade,
- Providing tutoring or academic advisement and support,
- Strengthening the academic rigor of the school,
- Increasing the number of students graduating high school,
- Helping each student read at grade level or higher, and
- Improving students' standardized test scores.

Many projects had goals associated with **college preparation and college awareness** such as those listed below:

- Motivating more students to aspire to college,
- Increasing students' academic readiness for postsecondary education,
- Increasing the number of opportunities for students to visit college campuses,
- Increasing the number of students taking college entrance examinations,
- Improving performance on college entrance examinations, and
- Increasing the number of students applying to and attending a postsecondary institution.

Professional development and curriculum reform were seen in some cases as the means to help meet the projects' primary goals. The goals for professional development included developing more competent teaching staff with skills aligned with an academically rigorous curriculum. Goals for curriculum reform included instituting more college preparatory sequences and integrating curriculum change into the classrooms.

A few projects had other goals not covered above. Two projects wanted to provide services for parents and to **increase parental involvement**. A few projects also mentioned as goals providing career-related activities and **preparing students for careers**. Other goals unique to specific projects are listed below:

- Providing intervention services to prevent social barriers from affecting students,

- Improving technical access and skills for students, and
- Focusing on community participation and awakening civic responsibility among residents about the need to improve education.

Project goals remained fairly stable with adjustments made as necessary.

For the most part, project goals remained the same during the three years projects participated in the national evaluation. Some projects adjusted the focus of their projects over the years, such as placing less emphasis on academic preparation and more on supporting students in college awareness. These modifications were deemed necessary for several reasons. Projects noted that in some cases an objective was met and, therefore, was no longer a problem. For example, one project had a goal to increase student attendance rates. Once the goal was met, it was no longer necessary to continue.

Because GEAR UP schools served a predominantly low-income population, most projects did not discuss their goals in relation to a particular group of students. A few, however, did have goals to aid more disadvantaged populations and to focus more on students in traditionally underrepresented groups.

5.3 Organization and Management of Partnerships

About half of the projects served one middle school and one high school.

Project organization followed two basic models, primarily driven by the size of the project. About one-half of the projects visited were small; they consisted of one middle school and one high school. In these smaller projects, the organizational structure was simple because there were often fewer staff than at the larger projects. The larger projects with multiple middle schools and high schools typically had several administrative layers.

A few projects established advisory boards or steering committees.

Projects were generally managed by a project director, or the equivalent, with oversight from other administrators at the lead organization (e.g., deans at the colleges, school district officials). A few projects established advisory boards or steering committees composed of GEAR UP staff and others from the major partners. The purpose of these boards or committees was to set programmatic goals, discuss the progress of the project, hire staff, plan for the sustainability of the project and to address other unanticipated issues as they arose.

Project directors had a wide range of responsibilities.

The project directors typically had similar responsibilities. They were involved in project planning, supervision of staff, interfacing with partners and school staff, hiring staff, budget and resource allocation and the daily operations of running the project. Frequently, at the smaller projects, the project director was in charge of the day-to-day operations of the project and the administration of the project at the schools. In fact, the project director was often housed at the middle school at least during the first two years. In a few cases, the project director moved on to the high school at the same time as the first cohort of students.

The organizational structure at the small projects was fairly flat, with only a few staff reporting directly to the project director. Full-time and part-time staff and volunteers who reported to the project director included counselors, teachers, evaluators, tutors, coordinators, liaisons, case managers and mentors. These staff members were often

located in the schools. In some instances, a few other staff reported to individuals under the project director. The project director typically was one of the only individuals, if not the sole individual, involved in the day-to-day oversight of the project. The other staff who reported to the project director primarily delivered services and had little administrative responsibility.

Another characteristic of the smaller projects was that school staff had a greater role in actual project administration than school staff at larger projects. At a few small projects, the GEAR UP staff reported to school administrators. At one project, the project director was the principal.

Larger projects were typically led by higher education institutions and had more administrative layers.

Larger projects, which included two or more middle school and high school pairs, were predominantly led by higher education institutions as opposed to school districts. They tended to be organized with more administrative layers and more staff than the smaller projects. At larger projects, the project director's office was generally not located within one of the schools. These project directors were responsible for overall administration of the project and tended to be less hands-on than those at the smaller projects. GEAR UP coordinators, who were often located at the schools, reported to the project director and oversaw the operation of the GEAR UP project within the schools.

The coordinators occasionally oversaw other GEAR UP staff responsible for delivering services. They coordinated and organized GEAR UP activities, assisted with planning and worked with school staff. At a few projects, GEAR UP staff were housed at some of the schools in the project. In at least one case, the project design called for the coordinator to be responsible for multiple schools.

Nearly all of the projects had support staff, such as administrative assistants, secretaries and clerks, who assisted the project director and other GEAR UP administrators and staff. Some of the support staff worked on GEAR UP full time, while others only worked part time and spent the rest of their time on other similar projects. Their responsibilities, for the most part, did not include service delivery or coordination of activities, but primarily consisted of clerical tasks, such as data entry, financial and accounting duties, administrative paperwork and database management.

5.4 Involvement of Partners

In addition to the lead partner, partners at a few projects played a large role in GEAR UP through designing services and overseeing the projects. These partners assisted with content decisions, managed or hired GEAR UP staff or led different components of the project, such as curriculum development, professional development or evaluation. For the most part, the partners did not participate in the day-to-day administration of the project. A number of partners provided money, in-kind assistance, transportation, facilities or scholarships but were not involved in actual service delivery. Most of the higher education institutions provided access to their campuses and hosted visits. The business partners typically provided volunteers for activities and speakers. The more actively involved partners were key service providers, responsible for a variety of services,

including professional development seminars, workshops, after-school programs, counseling and summer camps.

School staff were involved in the administration of GEAR UP to varying degrees. At the majority of the projects, decisions about GEAR UP that affected the schools were often made by GEAR UP staff in conjunction with school staff. This occurred most often in the smaller projects, in which the project director and other GEAR UP staff had regular contact with school staff. In these projects, school staff tended to have a fair amount of input in how GEAR UP was implemented at their schools. The level of input also increased over the years. For example, at one project, the steering committee originally designed the services, but in later years the school staff came up with new ideas for services. Another project established site teams composed of teachers, school administrators and other faculty located at each middle school and high school pair. The teams were instrumental in running GEAR UP at their schools and in deciding how to spend resources. In fact, the project director of this project pulled back to allow the site teams to become more autonomous and involved in decision-making. The GEAR UP project staff saw this as a positive step toward the school's taking ownership of the project.

GEAR UP staff frequently made decisions in conjunction with school staff.

The role of school staff varied at other projects. At a number of projects, the teachers and administrators were also considered to be GEAR UP school-based staff and were responsible for delivering services or acting as liaisons between the schools and GEAR UP staff. At other schools, school staff were minimally involved in project decisions and provided only informal input or were not involved in GEAR UP at all. At another project, the school staff, including the teachers, had to approve the assignment of office space for GEAR UP staff at the schools.

Organization and school staff roles varied across projects.

The staff at some projects communicated and met regularly. These projects held meetings quarterly or monthly to discuss GEAR UP activities and decisions. These meetings often included partner staff, school-based project staff and GEAR UP administrative staff. A few projects also held regular meetings between GEAR UP staff and school staff to discuss services at the schools.

Several projects experienced staffing and organizational changes between the second and third years of their grants. A few projects hired new project directors or experienced turnover in other positions. At a few projects, the new project directors came from the ranks of the project. Some of the staffing changes occurred because projects moved into high schools during the third year of their grants. A few projects added staff to work with the GEAR UP students in the high schools. At least one project redefined the roles of the coordinators to better meet the needs of the project.

With a few notable exceptions, changes in personnel did not appear to have a lasting impact on the projects as new staff were smoothly integrated into the project with minimal disruption to services. An example of an exception was one project that had a new project director, the third one in three years and a new principal at the middle school. These administrative changes created some communication problems between the high school administrators and GEAR UP staff, which caused delays in service delivery. This had a profound effect on the project because school staff and the former principal had

New staff were integrated into projects generally without disruption.

been very involved in the hiring and staffing of GEAR UP under the previous project director.

Another management change that occurred at a few projects was greater control and decision-making responsibility at the school level as the project administration tried to provide schools with more ownership of the projects. One project's organizational structure was altered somewhat the third year by adding an additional coordinator stationed in the school, who provided school staff with direct, easy access to the GEAR UP project. School staff used this opportunity to influence the project. This allowed the project director to be more involved in overall project oversight and management instead of working at the school level.

5.5 Relationship With Other Projects and Programs

Because GEAR UP was not the only program intended to improve academic success that was operating in the vast majority of these schools, projects may have had to coordinate with other programs operating within the same schools. The level of coordination between GEAR UP and these other programs, however, varied across projects. Many of the GEAR UP partnerships were located in states with state GEAR UP grants, which is an additional source for potential coordination.

Coordination with Programs Other Than GEAR UP

Staff coordinated with other programs in about half of the schools.

About one-half of the projects coordinated, at least to some degree, with other similar programs such as Upward Bound, Talent Search and School-to-Work programs offered at the schools. GEAR UP staff coordinated with other programs to make sure efforts to provide services to students were not duplicated and that services did not conflict. Frequently, GEAR UP staff shared office space with the staff for these other programs, which made coordination easier. A few GEAR UP projects delivered services collaboratively with other programs, or the programs provided services for GEAR UP, including summer programs, college visits, financial aid workshops and after-school activities. These arrangements were provided either through in-kind arrangements, or GEAR UP paid for the services. Several projects commented that GEAR UP was so integrated into the schools that there was little or no separation between GEAR UP services and the rest of the schools' activities.

There were also projects that either did not coordinate with other programs in the schools or were in schools that had no services with which GEAR UP could collaborate.

Relationship with GEAR UP State Projects

Relationships between partnership and state projects varied.

Thirteen of the 20 GEAR UP projects participating in the national evaluation were located in states that received GEAR UP state grants. These 13 projects were dispersed across six different states: three states each with one partnership, two states each with three partnerships and one state with four partnerships. The relationship between the partnerships and state grantees varied from state to state and from partnership to

partnership. Some partnerships did not interact at all with the state grantees, while other partnerships interacted frequently with the state grantees and received ongoing assistance.

5.6 Evaluation Plans

The GEAR UP legislation requires grantees to conduct a self-evaluation. All projects are also required to track individual students so projects can respond to their Annual Performance Reports (APRs), which the U.S. Department of Education uses to make funding decisions each year.

In addition to tracking students, some projects collected surveys and held focus groups.

All of the projects tracked GEAR UP students in some form or another as necessary to prepare their APRs. Most projects had access to the schools' databases of student-level information, or projects developed their own databases of this information, including test scores, grades, grade point averages or GPAs, courses taken and attendance. In addition, the projects collected data on participation in GEAR UP services. Some projects conducted other data collection activities, such as surveys, pre- and posttests and focus groups. Projects used the data to monitor their progress, look for areas in need of improvement and assess their goals.

Half of the projects conducted large-scale evaluations.

About one-half of the 20 projects conducted large-scale evaluations. Most of these projects hired an external evaluator, often from a college, to collect the data and conduct the analyses. The evaluators created reports from the data to help reshape service delivery. In addition, projects used the evaluations to examine students' progress and compare GEAR UP cohorts over time using various data, such as test scores, GPAs and survey results.

The evaluations were used to assess program outcomes and to determine what needed to be improved. A few projects mentioned incorporating the recommendations developed through the evaluations. A number of projects encountered problems collecting data and conducting the evaluations. These challenges included those listed here:

- Problems processing and analyzing surveys because of low response rates,
- Difficulty obtaining access to student-level data from the schools, and
- Inconsistent data entry.

Those projects that had not started their evaluations had evaluation plans in place.

Several of the projects had not started conducting their own evaluation by spring 2002, but they did have plans to do so. The plans varied across these projects on how best to conduct their self-evaluation. A few projects planned to compare GEAR UP students with non-GEAR UP students using a matched longitudinal sample from the NELS or comparison school data. Other projects anticipated conducting impact studies of GEAR UP services using student satisfaction survey results and looking at grades and test scores in relation to the GEAR UP services they had received.

6. Looking Forward

In previous chapters, the focus was on describing GEAR UP projects as they existed in the middle schools that participated in the national evaluation and the program's outcomes for the students in the study schools. Drawing on information collected from interviews conducted with GEAR UP project staff during spring 2002, chapter 6 looks beyond the first phase of implementation at the middle schools and explores the next two phases for GEAR UP grantees: transition into high school and evidence of sustainability beyond the federal grant. Because the last round of site visits occurred during spring 2002, those visits were the evaluation's only opportunity to glimpse GEAR UP at the high school level. In addition, in spring 2002, grantees were nearing the end of the third year of their grant.[38] Grantees expected at that point that they would be preparing for the termination of their federal support.

The study used qualitative analytic methods to determine common themes across projects on issues of transitioning projects into the high schools and project efforts to institutionalize their programs so that they would sustain themselves beyond the federal grant period.

6.1 Transition to High School

By spring 2002, projects were operating in high schools as well as middle schools.

The U.S. Department of Education awarded the first set of GEAR UP grants in fall 1999. The legislation authorizing the awards stipulated that these grants must begin providing services to students no later than the seventh grade. For this reason, the overwhelming majority of grantees chose to begin with a cohort of seventh-grade students. For projects serving students in 1999–2000, this initial cohort of students was enrolled in ninth grade (i.e., their first year of high school) in spring 2002. Thus, all of the GEAR UP projects participating in the national evaluation were operating in both the middle school(s) and high school(s) associated with their grants during 2001–02. This move into high school provided the opportunity to talk to project staff about their experiences implementing the GEAR UP project at the high school level even though the cohort of students being followed by the national evaluation was still in middle school. GEAR UP staff were also able to provide information about the services offered to high school students that year.

Projects took three basic approaches in providing services to high school students. Projects provided the following:

[38] During FY 2004, the duration of the grant period for GEAR UP was reviewed, and the Bush administration determined that the six-year service requirement in the statute provided the authority for six years. Congress clarified that interpretation in the Conference Report accompanying the FY 2004 appropriation.

- Similar or identical services at both the middle school(s) and high school(s),
- Identical core services at both the middle and high schools and some different, specifically designed services at the high school, or
- Very different services at the high school(s) from those provided at the middle school(s).

There was some variation in services between middle schools and high schools, but about half the projects provided similar or identical services at both.

The most common approach, adopted by one-half of the 20 projects, was to provide very similar or identical services at both the middle and the high schools. Usually, however, fewer services were provided, or those services that were provided at the high school were a slightly modified version of the middle school services. Less common were projects that carried some of the same services over from the middle school to the high school. These projects also introduced some different services that were specifically designed for high school students. A few of the projects that served multiple high schools offered different services at each high school. Only one project appeared to offer completely different services at the high school.

Services provided at middle schools and high schools differed when appropriate to those being served.

Some services are more appropriate for high school students than for middle school students. For example, SAT preparation programs are appropriate for high school students but not middle school students. Other services, such as tutoring and mentoring, were appropriate for both middle school and high school students. These services required little or no modification when carried over from middle school to high school. Other services, such as field trips and career fairs, had the same basic components but needed to be modified to fit the specific needs of high school students.

The service approach, in conjunction with other factors, affected the ease of implementation, which varied across projects. A few projects seemed to experience a relatively smooth transition, but most projects ran into at least some difficulties. While each partnership experienced a unique transition, grantees faced some common successes and challenges. Based on information gathered during site visits, projects were grouped into those that experienced relatively smooth transitions and those that experienced difficult transitions into their GEAR UP high schools.

Relatively Smooth Transitions

Half the projects experienced smooth transitions into the high schools.

Projects that implemented GEAR UP at the high school level without noteworthy problems had several factors in common. These common factors may have contributed to their success. The three projects that experienced the smoothest transition and five others that had relatively smooth transitions expanded their GEAR UP project to include the high school in a way similar to that in the middle school. These projects tended to be ones in which the following factors existed:

- Lead organization for the project was a higher education institution,
- High school staff and the administration supported GEAR UP,
- GEAR UP staff were located within the high school,

- Very similar or identical services were implemented at the high school as had been provided at the middle school,
- GEAR UP staff had previous working relationships with high school staff,
- High school staff were involved in planning and delivering GEAR UP services, and
- Additional staff were hired to serve at the high school.

Smaller projects had smoother transitions.

The size of the project may also have contributed to the smoothness of the transition. For many of these projects, GEAR UP served a very small district that consisted of one middle school and one high school. In addition, for at least three of the projects, ninth-graders were either located very close to the middle school, or the middle school and high school were located within the same building. The proximity of the schools to one another and the small size of the districts seemed to make the transition simpler than for those projects in larger districts and projects serving multiple schools that were not located in close proximity to one another.

Maintaining project organization contributed to smoother transition.

Another common trait among these projects was that they maintained the same administrative and organizational structures in spite of the transition to high school. Although nearly all of the projects visited added staff to support GEAR UP at the high school level, the projects experiencing the smoothest transition retained their original administrative and organizational reporting structure.

Engaging high school staff aided in transition.

The support of high school staff and administrators was key to the smoothness of the transition. For example, at one partnership, several high school teachers were actively involved in GEAR UP planning and implementation. They also took part in service delivery to ninth-graders. The high school principals and other school personnel with another partnership assisted GEAR UP staff with planning for the transition. In a third partnership, the high school principal fully supported GEAR UP and interacted with GEAR UP staff, although he was not directly involved with the administration of the GEAR UP project. GEAR UP project staff felt that the high school principal's support helped to increase teacher awareness and support at the high school level.

All of the projects experiencing smooth transitions into the high schools either provided the same level of services to these students as they had received the previous year as eighth-graders or, in some cases, provided the same types of services but at a reduced level. By retaining the same types of services at the high school level, it appears that these projects were better able to concentrate on other factors vital to a successful transition.

Difficult Transitions

Based on site visit interviews, it appeared that nearly one-half of the projects visited experienced considerable difficulty transitioning GEAR UP into the high school. While the nature and the number of barriers experienced by individual projects varied, most

projects experienced one serious impediment. Projects encountered issues such as those listed here:

- Lack of teacher "buy-in,"
- Lack of coordination between middle school and high school staff,
- Lack of adequate staff, and
- Administrative barriers, such as scheduling restrictions for activities.

The extent of implementation was linked to the amount of administrative support.

Lack of support from school staff (teacher buy-in) hindered the transition into high school for several projects, although reasons varied for the lack of support. Most of the projects that experienced this problem cited issues with administrators or school staff as the primary barrier to successful implementation. See examples below:

- School administrators simply did not feel the services provided by the GEAR UP project would help their students.
- There was tension between the high school principal and project staff because the principal wanted more control over GEAR UP staff.
- School staff felt the GEAR UP project added to the competing demands already placed on their time.

Communication problems at various levels also contributed to the rocky transitions. These included lack of communication and support among GEAR UP staff and lack of coordination and communication between GEAR UP staff and high school staff.

Insufficient staff contributed to difficult transitions.

Staffing issues were another source of implementation difficulties at the high school. Implementing a GEAR UP project at the high school level often meant that at least one school within a project needed staffing. All of the projects were still providing services at the middle schools when transitioning services to the high schools. Some projects had staff split their time between the middle school and the high school instead of hiring additional staff for the high school. While this approach seemed to work well for one project, it created severe problems for another project when staff appeared to be spread too thin. Staff at a project that was designed to add a new cohort of students each year expressed concern about serving more grades in the high school while continuing to serve the middle grades because the project was not planning to hire additional staff to meet the increased volume. At two projects, GEAR UP staff turnover forced projects to hire new staff. This slowed the implementation of the project at the high school, which contributed to school staff concerns about the stability of the project and consequently their buy-in of the project.

Other reasons for difficult transitions concerned scheduling GEAR UP services in the high schools. Some examples of problems encountered at a few schools are listed here:

- School administrators resisted allowing students to be pulled out of certain classes for career and college awareness workshops.

- School administrators did not permit students to be taken out of classes for GEAR UP field trips because they felt the trips did not provide "any added educational value."

- GEAR UP counselors who were available to meet with students only after school experienced difficulty scheduling counseling sessions with the ninth-graders because the high school did not offer any after-school programs.

For two projects, GEAR UP's implementation at the high school was very limited. For both projects, the transition presented a new bureaucracy that needed to be navigated. Because the school administrators had not been involved with GEAR UP previously, it was believed that the project was not considered their highest priority. To increase their contact with ninth-grade students, GEAR UP staff attempted to maintain contact with these students and provide services at locations away from the high schools.

In summary, the transition to high school presented some level of challenge for many of the projects.

6.2 Efforts at Sustainability

GEAR UP grants are viewed by some as seed money. As a result, questions arise about what aspects of the projects will remain once federal funding ends. The legislation authorizing GEAR UP intended that the reforms begun with federal assistance would be continued by the partnerships. Those individuals involved with GEAR UP voiced their opinions about the likelihood of sustaining GEAR UP once federal support ends for the projects involved in the national evaluation. Evidence suggests that facets of GEAR UP will remain in some middle schools, but only time will tell. Individuals involved with the GEAR UP projects had some ideas about which components were likely to remain and why.

Half of the projects felt aspects of projects would continue.

Individuals at about nine projects were optimistic that at least some of the GEAR UP services would continue in the middle schools. At several of these projects, those involved in GEAR UP had different opinions on exactly which services would continue. School staff at one project, for example, were optimistic about sustaining GEAR UP, but their partners were skeptical.

Three factors are considered here in making an early assessment of the sustainability of the GEAR UP projects participating in the national evaluation. These include the following:

- Strength of partnerships,

- Level of planning and preparation for the future, and

- Level of institutionalization in schools.

Strength of Partnerships

The strength of the partnerships, as well as the level of commitment and communication among the partners, is likely to affect the partnerships' ability to sustain GEAR UP without federal support. During site visits, site visitors observed that many of the partnerships were strong and fairly effective. At a number of projects, the partners were, for the most part, satisfied with the composition of the partnership and felt that they worked well. Interestingly, all of these partnerships predated the GEAR UP grant. A few had been initially formed under other grants, such as the School-to-Work Program, or as part of an early collaboration effort with similar objectives, such as connecting middle and high school students to postsecondary educational opportunities. Because these partnerships (or previously established connections) were formed before GEAR UP and had existed in some cases for years, there is a strong likelihood that the relationship among the partners will continue beyond the federal funding for GEAR UP.

Partnerships were strengthened by involvement of partners in decision-making.

Common characteristics among those partnerships that appear most effective include involvement in the decision-making process and communication among partners. These seem to be related to the partnerships' outcomes and strength. At several projects, partners other than the one or two key partners also played a role in decision-making and implementation, which strengthened their commitment to the project. At least one project's decisions were made as a group, not unilaterally. Another project emphasized that collaboration and input should occur at all levels. These partners felt their partnership approach was essential for institutionalizing GEAR UP for future cohorts. In addition, partners in these strong partnerships tended to communicate well with one other. The partners at a number of these projects met regularly and maintained ongoing telephone and e-mail communication.

Those partnerships that were not functioning as well were plagued by lack of coordination and communication among partners, little involvement from partners, high staff turnover within the partner organizations, frequent project administration changes and weak leadership from the lead agency. Decision-making was typically the sole responsibility of the lead agency. This occurred in some instances because the partners were minimally involved in, or committed to, GEAR UP. These issues clearly have implications for the sustainability of the projects.

Level of Planning and Preparation for the Future

Level of planning for the future varied.

The projects varied in terms of how much they had planned and prepared for the continuation of GEAR UP beyond the grant period. During spring 2002 site visits, GEAR UP staff were asked about their plans for continuing to operate their projects. For the most part, the more planning for the future that had taken place by that point, the more optimistic the individuals were regarding the sustainability of the project. Some projects had developed concrete plans for sustaining parts of GEAR UP, while a number of other projects were just beginning to formulate their plans. The most common strategy mentioned for sustaining GEAR UP was to find additional funding through other grants, new partners, existing partners or the schools.

At the time of the last visit, about one-third of the projects had not developed concrete plans for the future of GEAR UP. Individuals at these sites who were not optimistic about the sustainability of GEAR UP mentioned various reasons why they believed GEAR UP would not continue. They cited reasons such as schools not having taken ownership of GEAR UP, lack of staff to coordinate GEAR UP once funding ends, the disintegration of the partnerships and lack of available funding from other sources.

About one-third had established plans.

One of the projects furthest along in the planning efforts was part of an informal alliance with other GEAR UP projects in the region. The alliance was formed to address the very issue of how to continue GEAR UP once funding ends. The alliance was planning to conduct a needs assessment to identify which GEAR UP services to preserve and how much money was needed.

Level of Institutionalization in Schools

Another tactic for maintaining GEAR UP cited by several projects was the institutionalization of GEAR UP in the schools and school districts. At these projects, staff felt GEAR UP had been integrated into the schools, or there were plans to more fully integrate GEAR UP to ensure its continuation. These projects noted that building a strong foundation of GEAR UP's goals among school staff aided in the institutionalization. At a few schools, GEAR UP staff were allowing school staff to assume more responsibility in the administration of the project by having them plan and implement services.

Only a few projects were institutionalized into the middle schools.

Another indication of institutionalization is apparent through the actions of school principals. The principals at schools in four different projects were committed to the goals of GEAR UP enough that they built GEAR UP into either the school's budget or long-term plans.

Although specific plans were not in place, one project believed that the spirit of GEAR UP would carry on through the ideologies that had been instilled in the schools even though GEAR UP's services may not necessarily continue.

A few projects had let sustainability guide their service delivery decisions. One project used funds to purchase only sustainable resources (i.e., resource materials that would transcend the GEAR UP grant). GEAR UP staff at another project decided to implement higher education centers in the schools as opposed to a mentoring component. The schools needed more counselors, and the centers met that need, even though GEAR UP staff knew mentoring positions would be eliminated once funding ended.

Teachers' buy-in or their commitment to GEAR UP objectives, as well as changes in teachers' expectations because of GEAR UP, may increase a project's chances of continuing because there is a greater likelihood that teachers will continue to include aspects of GEAR UP in their teaching. In addition, curriculum reforms initiated by GEAR UP and successfully implemented in the schools are likely to remain in the schools once funding ends. In particular, reforms initiated by GEAR UP in the GEAR UP schools that spread to other schools in the district are evidence of the sustainability of GEAR UP because they show the district's commitment to the project. Staff at a number

of projects believed that GEAR UP had been integrated into the curriculum, and the reforms started by GEAR UP would continue. At one project, GEAR UP is viewed as a vehicle for introducing curriculum reforms that are eventually implemented districtwide.

Aspects of GEAR UP are likely to remain at some schools once federal funding ends. Those involved in GEAR UP at a number of schools are confident that aspects of GEAR UP will remain as a result of additional funding, the project's decisions to offer sustainable services from the beginning and the institutionalization of GEAR UP in the schools.

References

Carnegie Council on Adolescent Development. 1995. *Great Transitions: Preparing Adolescents for a New Century*. New York: Carnegie Corporation of New York.

Education Resources Institute, Institute for Higher Education Policy. 1997. *Missed Opportunities: A New Look at Disadvantaged College Aspirants* (Publication No. ED 420 257). Washington, D.C.: Author.

Guskey, T. 1997. *The Relationship Between Socioeconomic Characteristics and School-Level Performance Assessment Results.* Paper presented at the annual meeting of the American Educational Research Association. Chicago, Ill.

Hofferth, S. L. 1988. *Healthy Environments, Healthy Children: Children in Families. Child Development Supplement.* Ann Arbor, Mich.: University of Michigan.

Howley, C., and R. Bickel. 2000. *When It Comes to Schooling . . . Small Works: School Size, Poverty, and Student Achievement.* Randolph, Vt.: Rural School and Community Trust.

Howley, C., M. Strange, and R. Bickel. 2000. *Research About School Size and School Performance in Impoverished Communities.* Charleston, W. Va.: ERIC Clearinghouse on Rural Education and Small Schools.

Mathtech. 1998. *Factors Related to College Enrollment.* Washington, D.C.: Author.

Oakes, J. 1990. *Lost Talent: The Underparticipation of Women, Minorities, and Disabled Persons in Science.* Santa Monica, Calif.: Rand Corporation.

Schwarz, C., and E. Lui. 2000. *The Link Between School Performance and Health Insurance: Current Research*. San Francisco, Calif.: Consumers Union. [ERIC: ED 463 351]

Slem, C. M. 1983. "Relationship Between Classroom Absenteeism and Stress Risk/Buffer Factors, Depressogenic Attributional Style, Depression and Classroom Academic Performance." Paper presented at the Annual Meeting of the Western Psychological Association, San Francisco, Calif., April 6–10. [ERIC: ED 240 474].

Steward, R. J., A. D. Steward, and J. Blair. 2002. *School Attendance Revisited: A Study of Urban African-American Students' GPA and Coping Strategies.* Paper presented at the Annual Meeting of the American Psychological Association, East Lansing, Mich., April 6. [ERIC: ED 471 343].

Sukhdeep, G. and A. Reynolds. 1996. *Role of Parent Expectations in the School Success of At-Risk Children.* Paper presented at the 14th Biennial Meeting of the International Society for the Study of Behavioral Development, Quebec City, Quebec, August.

Tierney, W. G., J. E. Colyar, and Z. B. Corwin. 2003. *Preparing for College: Building Expectations, Changing Realities*. Los Angeles, Calif.: Center for Higher Education Policy Analysis (CHEPA).

U.S. Census Bureau, Table HINC-07. Income Distribution to $250,000 or More for Households: 2000. Available: *Federal Register* 65, no. 3 (2000): 7555–7557. *2000 Federal Guidelines for the 48 Contiguous States and the District of Columbia.* Available: http://www.ocpp.org/, http://www.census.gov/.

U.S. Department of Education. 1994. *Strong Families, Strong Schools.* Washington, D.C.: Author.

———. 1996. *National Education Longitudinal Study: 1988-1994. Descriptive Summary Report*. (Publication No. NCES 96-175). Washington, D.C.: Author.

———. 1996. *Parents and Schools: Partners in Student Learning*. (Publication No. NCES 96-913, by N. Carey and E. Farris). Washington, D.C.: U.S. Department of Education, Office of Educational Research and Improvement.

———. 1997. *Confronting the Odds: Students At Risk and the Pipeline to Higher Education (*Publication No. NCES 98-094). Washington, D.C.: Author.

———. 1999. *Do Gatekeeper Courses Expand Education Options?* (Publication No. NCES 1999-303, by R. Atanda). Washington, D.C.: U.S. Department of Education.

———. 2000. *Mapping the Road to College: First-Generation Students' Mathematics Track, Planning Strategies, and Context of Support* (Publication No. NCES 2000-153). Washington, D.C.: Author.

———. 2003. *Identifying and Implementing Educational Practices Supported by Rigorous Evidence: A User Friendly Guide*. Washington, D.C.: U.S Department of Education, Institute of Education Sciences. National Center for Education Evaluation and Regional Assistance.

———. 2003a. *Digest of Education Statistics, 2002*, Table 38, (Publication No. NCES 2003-060, by Thomas D. Snyder. Production Manager, Charlene M. Hoffman). Washington, D.C.: Author.

———. 2003b. *Overview of Public Elementary and Secondary Schools and Districts: School Year 2001-02*, (Publication No. NCES 2003-411). Washington, D.C.: Author

———. 2005. *The Condition of Education 2005*, (Publication No. NCES 2005-094). Washington, D.C.: Author.

———. Office of English Language Acquisition. 2002. *Survey of the States' Limited English Proficient Students and Available Educational Programs and Services 2000–2001 Summary Report.* Figure 2. Washington, D.C.: Author.

Venezia, A., M. Kirst, and A. Antonio. 2003. *Betraying the College Dream: How Disconnected K–12 and Postsecondary Education Systems Undermine Student Aspiration.* Palo Alto, Calif.: Stanford University.

Warburton, E., R. Bugarin, and A. Nuñez. 2001. *Bridging the Gap: Academic Preparation and Postsecondary Success of First-Generation Students* (Publication No. NCES 2001-153). Washington, D.C.: U.S. Department of Education, National Center for Education Statistics.

Appendix A

Methodology for the National Evaluation of GEAR UP

The purpose of this five-year evaluation was to assess the outcomes for projects funded under the U.S. Department of Education's (ED's) Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) program. GEAR UP projects are aimed at increasing the enrollment rate of disadvantaged students in postsecondary education by supporting programs that provide early college awareness information, academic and individual support services and financial assistance. GEAR UP projects are authorized under the 1998 amendments to Title IV of the *Higher Education Act*. GEAR UP is intended to give more low-income students the skills, encouragement and preparation needed to pursue postsecondary education and to strengthen academic preparation programs and student services at participating schools. GEAR UP provides two major types of grants: (1) partnerships of school districts, colleges and other organizations and (2) state grants. This appendix focuses on the study methods used to evaluate the partnership grants.

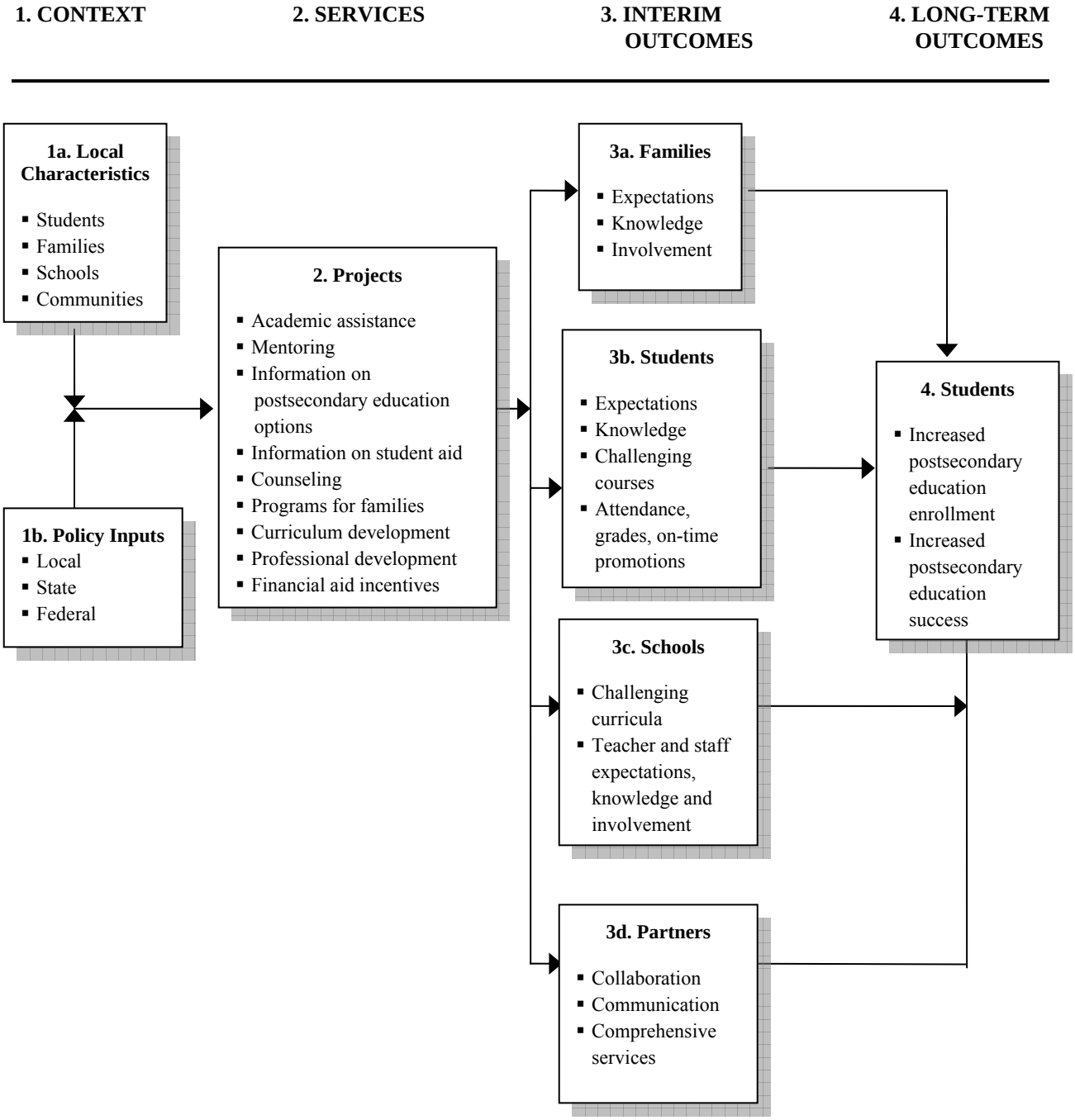
A.1 Study Design

The core component of the National Evaluation of GEAR UP is the outcomes study that looks at the association between outcomes for participation in GEAR UP projects and key student and parent interim outcomes that are considered to be associated with an increased likelihood of attending postsecondary education. The conceptual framework, figure A-1, for the GEAR UP program guided the study design for the national evaluation. Within the context of the conceptual framework, the National Evaluation of GEAR UP had the dual purpose of describing the projects as they existed and evaluating their outcomes. Because GEAR UP legislation is nonprescriptive about how to meet the stated goals, services provided by partnerships vary considerably. Brief lists of the general types of services that may be offered are shown in Box 2. This includes services provided by state GEAR UP projects, which are discussed in a separate report. As shown in Box 3 (a-d), interim outcomes are intended at the family, student, school, and partner levels. Data were collected at each of these levels.

Long-term outcomes for GEAR UP (Box 4) are increased rates of participation and success in postsecondary education. The period of data collection for this evaluation covered middle school seventh and eighth grades. Therefore, only interim outcomes were assessed.

After selecting and recruiting 20 GEAR UP partnership projects to participate in the study, one middle school from each partnership was then selected to participate in the evaluation. To maximize the likelihood of a "clean" baseline, only projects providing services to a new cohort of seventh-grade students in fall 2000 were chosen. Within each school, a sample of seventh-grade students was chosen for the outcome study. Data were collected about these students in fall and winter 2000, which represented the baseline measures for examining the outcomes for the GEAR UP projects. To capture information on interim outcomes expected to be related to eventual postsecondary success, data were collected from and about these same students in spring 2002 when most were completing the eighth grade.

Figure A-1. Conceptual framework of the impact of GEAR UP



Source: Westat analysis of *HEA 1988* Amendments, 2007.

Through a subsequent study awarded in 2005, it will be possible to obtain additional information as students complete high school and move into their postsecondary years. This will enable ED to address the primary research questions on whether GEAR UP increases postsecondary school attendance and success.

Because GEAR UP partnership projects are required by law to serve entire grade levels of students, it was not possible to use an experimental or random assignment design in this study, which would, of course, have been the preferred evaluation technique to draw strong inferences about program effectiveness. Accordingly, to assess the outcomes for GEAR UP, the study used matched comparison schools to evaluate GEAR UP's outcomes. For each GEAR UP middle school in the sample, a middle school that was not receiving GEAR UP funds was selected for comparative purposes. The two schools were matched on the demographics of the students served and the communities in which they were located. Where possible, the non-GEAR UP schools were located in the same school district as the GEAR UP schools. As in the GEAR UP schools, a sample of seventh-grade students was selected in the non-GEAR UP schools. The full complement of student-level data collected on GEAR UP school students was also collected on the non-GEAR UP school students. Analyses primarily examine the change in outcome measures over time between the GEAR UP students and students from the non-GEAR UP group.

The design also was intended to collect data about students who were seventh-graders in the GEAR UP schools the year before GEAR UP was implemented (in school year 1998–99). The purpose of selecting this sample was to compare academic information across two cohorts of students that completed seventh grade in the same school before and after the introduction of GEAR UP. In many cases, academic and administrative information was no longer available at the middle school level, and refusal rates were high among the high schools to which the information had been transferred. Thus, this analysis was not undertaken.

A.2 Sample Design and Recruitment

The sample design for the national evaluation used a three-tiered approach. The first tier was the selection of GEAR UP projects. The second tier was the simultaneous selection of GEAR UP and non-GEAR UP schools and the final tier was the student sample. The selection and recruitment process for each tier is discussed in detail below.

Selection and Recruitment of Partnerships

Twenty GEAR UP partnership projects were selected for the in-depth study of program implementation and inclusion in the longitudinal outcomes study. The study sample was limited to partnerships located in the 50 states and those that began providing GEAR UP services to a new cohort of seventh-grade students during the 2000–01 school year.

In August 1999, ED awarded 164 partnership grants through a competitive process. Of the 164 partnership grants, 142 met the initial criteria for selection in the national evaluation. Of those excluded, six were located in U.S. territories, and 14 were not planning to serve a new cohort of seventh-graders during the 2000–01 school year. The remaining two projects were eliminated because of concerns of conflicts of interest because in each case a member of the GEAR UP Technical Working Group was involved in the administration of the GEAR UP project.

Partnership Selection. In preparation for sample selection, the following taxonomy of service models was developed based on available literature on existing middle school interventions. The purpose of the taxonomy was to differentiate grantees to ensure that a representative group of projects be included in the evaluation. The following are the program models:

- Curriculum development,
- Schoolwide reform and systemic change,
- Professional development,
- College awareness,
- Academic preparation, and
- Multiservice.

All partnership grant applications were reviewed and assigned a rank of 0 to 5 on each of the above program models, with 0 meaning not an element of the project and 5 representing a primary program focus of the project. Projects were then sorted into three service categories based on this ranking.

- **Direct Services (81 grants).** These projects emphasized providing services directly to students and parents and included activities such as college awareness or academic preparation.
- **Indirect Services (42 grants).** These projects did not focus on interacting directly with students and included activities such as curriculum development, schoolwide reform and systemic change and professional development.
- **Multiservices (19 grants).** These projects placed equal emphasis on direct and indirect serves (i.e., indirect service models and direct service models were ranked equally).

Within each service category, projects were sorted by the type of organization that had primary administrative and fiscal responsibility for the grant. The three types of organizations follow:

- College or university (94 grants),
- Elementary or secondary school district (45 grants), and
- Other (three grants).

Projects also were sorted based on whether they were located in a state that was awarded a state GEAR UP grant during the 1999 grant cycle.

The sample selection of GEAR UP partnership projects for the national evaluation was undertaken in three stages. The first stage consisted of randomly selecting 40 projects across 12 strata cells—service category (3), fiscal agent (2) and state grant (2). The Other category for fiscal agent was eliminated before

stratification because there were so few grants of this type, and they appeared to be so different from other partnership projects.

The second stage reduced the sample from 40 to 30 projects. Elimination was based on confirmation of the project's program model ranking and whether the project was a new initiative or if project was initiated under some other funding source before GEAR UP. Projects indicating that explicit parental consent would be required to access student records and administer student surveys were eliminated from the sample. This decision was based on previous experience that obtaining a sufficiently high response rate from projects requiring explicit parental consent would prove impossible. Nine projects were determined to be ineligible. One additional project was randomly deselected.

For the final stage in the selection process, more in-depth calls were conducted with the 30 projects. These calls focused on the project's expected level of implementation by early 2000. An important requirement of the study design was that projects be able to describe and report the provision of planned services and be able and willing to participate fully in the longitudinal data collection. As a result of these telephone calls, nine projects were eliminated and one project was randomly deselected reducing the sample to 20 partnership projects. In addition to two projects that refused to participate in the study even after numerous attempts at obtaining cooperation, seven projects were eliminated for the following reasons:

- Inadequate level of implementation anticipated (three projects),
- Inability to gain access to student records (two projects), and
- Inability to track students according to study design (two projects).

Table A-1 shows the distribution of the final sample across the strata.

Table A-1. Distribution of 20 sampled projects across strata

	In state with state GEAR UP grant?				
	Yes		No		
Service category	College/ university	School district	College/ university	School district	Total
Indirect	1	3	0	1	5
Direct	4	1	2	1	8
Multiple	1	0	4	2	7
Total	6	4	6	4	20

Partnership Recruitment. Project recruitment was ongoing at every stage of the sample selection process to ensure full cooperation in the study. Letters were mailed to project directors for the initial sample of 40 partnership projects. The letters described the national evaluation and informed the grantees that their projects were being considered for participation. The letters indicated that the project directors would be contacted by telephone to confirm the program model or models that appeared to be the primary focus of their grant based on a review of their grant application.

Those projects that moved onto the second stage were contacted by telephone and asked additional screening questions. The 20 projects that remained in the final sample received a letter outlining the study and informed them that they would receive $500 each year to offset any expenses incurred as a result of their participation in the national evaluation.

Selection and Recruitment of Schools

Once the GEAR UP projects agreed to participate in the national evaluation, the next phase was the selection and recruitment of schools.

School Selection. Two middle schools were selected for each partnership: one GEAR UP school served by the partnership project (GEAR UP school) and one matched comparison school with no GEAR UP services (non-GEAR UP school). The steps to identify paired GEAR UP and non-GEAR UP schools are detailed below. Given the purpose of the program, *similar* is defined as students in the GEAR UP and non-GEAR UP schools having the same probability of attending and succeeding in postsecondary education in the absence of the GEAR UP program.

- **Step 1.** The 1997–98 Common Core of Data (CCD) was used to determine (1) the percentage of students in the school receiving free or reduced-priced lunches (measure of poverty); (2) percentages of African-American, Asian and Hispanic students in the school; (3) the ratio of students to teachers; (4) the grade span; and (5) the location of the school relative to a populous area (i.e., urbanicity).

- **Step 2.** Schools targeted by GEAR UP projects were identified. Schools not receiving GEAR UP services were defined as potential non-GEAR UP schools.

- **Step 3.** For each measure (except location and grade span) and for each school, a normalized measure (a value that runs between 0 and 1) was calculated. This was done by first finding the minimum and maximum values for each of the measures, then by taking each school's value of the measure, subtracting from that the minimum measure, and dividing this difference by the maximum minus the minimum value. For example, suppose that in the set of schools in the district, the ratio of students to teachers ranges from a minimum of 14 to a maximum of 28. If in a particular school the ratio of students to teachers is 21, then the normalized value for that school for this measure is [(21-14) divided by (28-14)] or 0.5.

- **Step 4.** A difference measure for each variable for each potential pair of GEAR UP and non-GEAR UP schools was calculated. The difference measure is equal to the absolute value of the difference between a potential non-GEAR UP school's value of the normalized measure and the value of the normalized measure for the GEAR UP school. For example, assume the normalized measure in step 3 is calculated to be 0.3 for the GEAR UP school. Then the difference measure for the GEAR UP school is (|0.3-0.3|) or 0. For a potential non-GEAR UP school with a normalized measure of 0.5, the difference measure is equal to (|0.5-0.3|) or 0.2.

- **Step 5.** For location, only those schools with the same urbanicity codes were considered.

- **Step 6.** To determine the grade span of the school, schools with the same grade span were given a value of 0 and all others were given a value of 1.

- **Step 7.** These difference measures were displayed for each variable for each GEAR UP school and each potential non-GEAR UP school. An example of such a display is shown in Table A-2.

Table A-2. Difference measures for each variable

Potential non-GEAR UP school	Percent free or reduced-priced lunch	Percent African-American	Percent Hispanic	Percent Asian	Student/ teacher ratio	Grade span	Weighted average
1	.12	.50	.50	.90	.33	0	.39
2	.35	.00	.10	.22	.21	0	.15
3	.90	.22	.37	.76	.02	1	.55
4	.27	.13	.25	.15	.55	1	.39

- **Step 8.** The last column, weighted average, provides an aggregate distance score. The lower this number, the closer a non-GEAR UP school is to the GEAR UP school. Therefore, potential non-GEAR UP school #2 would be the first choice for the non-GEAR UP school. Each measure was weighted equally.

- **Step 9.** The process was repeated for each GEAR UP school. School districts were contacted to ascertain high school feeder patterns among the paired GEAR UP and non-GEAR UP schools. The pair with the lowest weighted average when both schools did not feed into the same high school was selected, if possible.

- **Step 10.** If a non-GEAR UP school was not available within the district, a non-GEAR UP school from outside the district was selected. To do this, Steps 3 through 9 were repeated for all schools within the state. In those sites where it was necessary to search outside the GEAR UP school district, geographic proximity of the schools to one another was taken into consideration when making the final selection.

School Recruitment. Letters were first mailed to district superintendents for each of the sampled schools to request permission to contact the schools. At the same time, letters were mailed to the state education agencies (SEAs) to inform them of the study. District superintendents were contacted by telephone to discuss the study and gain their support. Applications to conduct research were initiated in those districts that required approval before school principals were contacted. Once approval was received at the district level, letters were mailed to school principals to inform them of their selection and request their participation. The letters outlined the requirements of the study. Principals were contacted by telephone to answer any questions about the study and to gain their cooperation. All schools were given monetary incentives the next year, and some schools were given additional funds over the course of the study to help offset costs incurred by participating in the study.

Selection and Recruitment of Student Sample

The student sample was selected to correspond to the whole-grade, or cohort, approach required of partnerships. The student sample was drawn from students enrolled in seventh grade in GEAR UP and

non-GEAR UP schools during the fall of 2000. Although 2000–01 was the second year of the grant, the sampled students did not receive any services during the prior school year.

Unlike the previous stages, it was necessary to conduct recruitment efforts before sample selection.

Recruitment of Students and Parents. At the beginning of the 2000–01 school year, each school mailed letters to all parents of seventh-graders. Schools were provided English and Spanish versions of all materials for parents. Schools operating under implied consent for student participation compiled a list of the students enrolled in seventh grade. Letters were mailed by the schools to all parents or guardians to explain the study and provide them with an opportunity to decline participation. These lists of students, excluding refusals, were used to select the participant sample in these schools.

Schools that required explicit parent consent for students to participate mailed letters to all parents or guardians of seventh-grade students. These letters explained the study and requested that they sign the consent form and return it to the school. Schools with low initial response rates were asked to conduct a second mailing. Where response rates remained low, schools were asked to contact parents by telephone and prompt them to return the consent form agreeing or declining to participate. Lists of students with parent consent submitted by each school were used to select the student sample.

Student Sample Selection. Many of the schools in the sampled partnerships had very large seventh-grade classes. Preliminary information indicated that seventh-grade classes in the middle schools served by GEAR UP varied from about 60 students to as large as 600 students. For cost-efficiency, students from the larger schools were sampled. Sampling was done by setting a maximum sample size for a school at 140 students. For schools with a seventh-grade class of 140 or fewer students, all students were sampled. For schools with a seventh-grade class of more than 140 students, 140 students were randomly selected. This yielded a total sample size of 4,692 students.

A.3 Description of Data Collection Procedures

Two major data collection streams were conducted during the course of the study. One gathered descriptive data through a series of site visits during spring 2000, 2001 and 2002. The second stream was the outcomes study data, which included student surveys, parent interviews, student administrative records and report cards, and GEAR UP program participation data. (Copies of the data collection instruments are in Appendix K.) To maximize efficiency and reduce burden on the projects, the two sets of activities were coordinated. During the spring 2001 and spring 2002 visits, site visitors conducted interviews as well as collected some of the outcomes study data.

Site Visits

In-depth site visits were conducted in spring 2000, 2001 and 2002 to collect descriptive information on GEAR UP project structure, operations and environment from the participating partnerships. The initial round of site visits conducted in spring 2000 introduced the partnerships to the study. Initial interviews with the GEAR UP project director were held as well as with other GEAR UP project staff. The spring 2000 visits were designed to capture information about early implementation experiences and the program environment. Information was also obtained about grading systems, courses and credits at GEAR UP and non-GEAR UP schools. To secure school "buy in" to the national evaluation, site visitors

visited the sampled schools and, during spring 2000, reemphasized the important role that each school would play in helping the study assess the outcomes for GEAR UP.

Interviews. Site visits in spring 2001 and spring 2002 included interviews, document and record reviews, focus groups, and observations. Interviews were conducted with the grant administrator and, as appropriate, other key program staff; with administrators and other involved staff at partnership schools, specifically the school sampled for the outcomes study at each site; with project administrators at the partnering institution(s) of higher education and school district(s); and with representatives of other community organizations that were part of the partnership.

Focus Groups. Focus groups were held at each sampled GEAR UP school during the spring 2001 and spring 2002 site visits. The focus groups generally had 6 to 10 participants and lasted approximately one hour. Three separate focus group sessions were conducted: students, parents or guardians, and seventh- and eighth-grade teachers. The purpose of the focus groups was to obtain different perspectives on student academic achievement and college plans, school climate and the GEAR UP program at the middle schools. For their participation, parents and teachers were given telephone calling cards worth $10.

Observations. In addition to the interviews and focus groups, site visitors observed GEAR UP project activities. The purpose of the observations was to provide an opportunity to see how activities were operated, the setting in which the services were provided, the student-to-staff ratio, the type of activities taking place, resources available, attendance patterns, and general climate. During the site visits, documents were collected and reviewed that were helpful in evaluating the project's implementation and interpreting student transcripts. These documents included grantee progress reports, program calendars, materials developed for distribution to students and parents, middle school course catalogs and course lists. Site visitors used all of this information to prepare site visit reports for each site. Site visit reports were reviewed and synthesized to compile information to write reports of the study's finding for public distribution.

Student Survey

Sampled students in both the GEAR UP and non-GEAR UP schools were asked to complete a questionnaire in fall or winter 2000 and then again in spring 2002. (Seventh- and eighth-grade student surveys appear in appendix K.) To facilitate the completion of these, each school identified a school coordinator who served as a liaison between the school and evaluation staff. Questionnaires were sent to the school coordinator who arranged for their confidential administration to sampled students. Parents were notified as required under federal law and local policies.

The student survey, which was administered only in English, covered the following topics:

- Characteristics of the student's family and home life;
- Participation in clubs, student government, organized athletics, social organizations, etc., both in and out of school;
- Education and career expectations and aspirations;
- Knowledge of postsecondary education costs and available financial aid;

- Knowledge of college entrance requirements and application processes;
- Participation in and assessment of programs designed to increase enrollment of disadvantaged and at-risk students in postsecondary education; and
- Self-assessment of academic ability and ability to achieve expectations.

The questionnaire also collected the names, telephone numbers and addresses of family members and neighbors of students to be used to locate students for future follow-ups. The tracking information was used in spring 2002 to locate sampled students who no longer attended the participating GEAR UP or non-GEAR UP schools.

Student Information Matrix

Schools provided administrative and demographic information on individual students either in hard copy or electronically using the Student Information Matrix or SIM (see appendix I). Information not subject to change, such as gender and race, was requested only once and verified for each student. Information was abstracted from school records for the GEAR UP sampled students and non-GEAR UP students to provide a complete picture of the student's academic experience. School attendance, disciplinary action, truancy information, mobility, and student demographics (e.g., gender, race and ethnicity), eligibility for free or reduced-priced lunch, English proficiency, participation in special education and/or gifted programs were obtained from administrative records in spring 2001 and 2002 during site visits.

Transcripts

Transcripts were requested for all sampled students enrolled in both the GEAR UP and non-GEAR UP sampled schools at the end of the 2001–02 school year. Seventh- and eighth-grade transcript data were collected for each student with parent consent. Transcript data included student report cards and standardized test scores. The data collected provided information about classes taken and completed, grades received and retention in grade.

Parent Interview

Paper-and-pencil telephone interviews were conducted in either English or Spanish with parents or guardians of all sampled students. (See appendix K for copies of the English version of parent interviews.) The parent interviews were conducted concurrently with the administration of the student surveys in fall 2000 and spring 2002. Parents were asked about their educational background; their experiences with GEAR UP; their educational expectations for their child; involvement in their child's education; and knowledge about college costs, financing, admissions and family income. Parents received a telephone calling card valued at $10 in appreciation for their participation.

Middle School Summaries

During the spring 2001 and 2002 site visits, the study team completed a Middle School Summary for GEAR UP and non-GEAR UP schools. The purpose of the Middle School Summary was to provide

school profile information and obtain information about the types of support services available to students. This enabled the national evaluation to look at similarities and differences among GEAR UP and non-GEAR UP schools, as well as track changes over time.

Guidance Counselor Summaries

During the spring 2001 and 2002 site visits, the study team completed Guidance Counselor Summaries for GEAR UP and non-GEAR UP schools. The Guidance Counselor Summary provided information about guidance counselors' decision-making processes and practices when advising students each counselor's own experiences, approaches and mindset toward counseling middle school students and information about course offerings, grading and credits. This provided a means for determining similarities and differences between GEAR UP and non-GEAR UP schools. Information about courses offered, grading scales and course credits were necessary to standardize coding of student transcripts across schools.

GEAR UP Activity Records

Each partnership project participating in the outcomes study was asked to maintain student- and parent-level information on attendance at GEAR UP-sponsored activities. Data on program participation were collected for all sampled GEAR UP students and their parents on an ongoing basis beginning in fall 2000 and continuing through the end of the 2001–02 school year.

On a monthly basis, projects were asked to submit the following information about each GEAR UP activity they provided:

- Subject matter covered (e.g., English, college financial aid),
- Timing of the activity (e.g., after school, weekend),
- Number of students or parents attending,
- Leader of the activity (e.g., classroom teacher, project staff), and
- Duration of activity (e.g., days, hours, minutes).

GEAR UP-sponsored classes recorded on a student's report card were not reported on activity forms. The information provided at the student level was comparable to the information GEAR UP projects reported in aggregate form on their Annual Performance Reports (APRs) to ED.

Annual Performance Reports

APRs were provided to the national evaluation by the program office in summer 2001 and 2002. These reports provide information for all GEAR UP projects, including those participating in the national evaluation. The APRs contain information about student demographics, the numbers and types of activities projects offer, targeting and recruiting students, project management, and staffing. These reports

were used to set the context and show how representative the GEAR UP sampled sites are of the broader GEAR UP program.

A.4 Response Rates

This section details response rates at each level of the study, as well as for the various data collection instruments.

Project Level

As discussed earlier, 20 GEAR UP partnerships were selected for inclusion in the descriptive study of program implementation and the outcomes study. Two partnerships were dropped subsequently from the outcomes study because the GEAR UP school they served refused to participate in the national evaluation.

School Level

A total of 40 schools were sampled to participate in the outcomes study. Twenty GEAR UP schools were selected as treatment schools along with 20 non-GEAR UP comparison schools. One GEAR UP school and its comparison, non-GEAR UP school were removed from the study because of lack of cooperation from the school district early in the study. Lack of cooperation at the school level resulted in another GEAR UP school being removed. One additional comparison school also was removed after many attempts were made to contact the school and no response was received even though the school had agreed initially to participate in the study. These occurrences in addition to the removal of the project mentioned previously resulted in 36 schools participating during the base year.

Site visitors collected school-level data by completing the Guidance Counselor Summary, Middle School Summary, and Student Information Matrix during the 2000–01 and 2001–02 site visits. Each school sent report card and standardized test score data at the end of the 2001–02 school year. Table A-3 summarizes the school-level response rates for each of these data sources.

Student Level

Parent Consent. Parent consent was obtained for all students who participated in the outcomes study. Each year parents or guardians were asked permission for their child to complete a student survey and to allow access to their child's records and report cards. Between the base year and follow-up year of data collection, some schools changed their consent status to written consent for both the student survey and records and report cards, while other schools changed from implied to written consent for student records and report cards, (i.e., records-based data) but not the student survey.

In an effort to reduce the effect of this change on response rates, the study team worked closely with schools asking them to encourage parents to allow their children to participate. In some cases, GEAR UP project staff and school staff went to great lengths to gain consent by re-mailing consent forms to parents, making phone calls, and even visiting homes. Additionally, trained telephone interviewers contacted

parents directly to gain consent. Consent forms were mailed to parents who gave verbal consent. Telephone calling cards were included as an incentive for them to sign and return the form. Extensive telephone nonresponse conversion was attempted for parents who did not return signed consent forms.

Table A-3. School-level response rates among participating schools

	All Schools		GEAR UP		Non-GEAR UP	
Data source	Number	Percent	Number	Percent	Number	Percent
Sample size	40	100	20	100	20	100
Participating schools	36	90	18	90	18	90
Guidance counselor summary	32	80	16	80	16	80
Middle school summary	34	85	18	90	16	80
Student survey						
Grade 7	36	90	18	90	18	90
Grade 8	33	83	17	85	16	80
Administrative records						
Grade 7	31	78	17	85	14	70
Grade 8	32	80	17	85	15	75
Report card						
Grade 7	33	83	16	80	17	85
Grade 8	34	85	17	85	17	85
Standardized test scores^						
Grade 7	27	68	14	70	13	65
Grade 8	31	78	15	75	16	80
GEAR UP activity records*	18	90	18	90	NA	NA

^ Schools reporting they do not administer a standardized test at this grade are included as respondents.

* Includes schools that did not provide information on all services provided.

NA = not applicable.

Table A-4 summarizes parent consent response rates for the student survey and records-based data. In 2000–01 parent consent was obtained for 99 percent of students for the student survey and 97 percent for records-based data. In 2001–02, for students who remained in sampled schools parent consent was obtained for 85 percent of students for the student survey and 80 percent for records-based data.

Table A-4. Number and percentage of parents giving consent by school year and type of data, for students remaining in original school

Data source	Number	Percent
Seventh-grade sample (SY 2000–01)^	4,692	100
Student survey	4,445	95
Administrative records	4,336	92
Eighth-grade followup (SY 2001–02)*	3,762	100
Student survey	3,188	85
Administrative records	2,991	80

^ Includes students who subsequently left original school.

* Excludes students who left original school before spring 2002.

Students Leaving Sampled Schools. The original study design called for tracking and collecting eighth-grade data on students who left their original school. To do this, GEAR UP and non-GEAR UP schools were asked to provide the study with the name and address of a transfer student's new school. Using information provided by schools and student and parent locating information obtained from student surveys and parent interviews, eighth-grade surveys were mailed to transfer students in spring 2002. In addition to this, students' new schools were contacted and asked to provide eighth-grade school record data and seventh- and eighth-grade transcript data. Program participation data were collected only for students remaining in sampled GEAR UP schools so these data were not requested. The response rates for the students were extremely low despite the study's effort to gain parent consent and trace students using Westat's telephone research center.

Table A-5 gives an overview of the number of sampled students who transferred between the base year and follow-up year data collection periods. A total of 724 students were no longer enrolled in the schools where they were originally sampled. Consent was obtained for 20 percent of the transfer students for student surveys and 18 percent for records-based data. The low response rate, high cost of tracing these students, and the lack of information about their new school influenced the decision that a student would be considered no longer in the sample for analytic purposes once he or she transferred out of a treatment or comparison school (i.e., did not receive the full "dosage" of middle school GEAR UP). Information was retained on the transfer students should ED want to attempt to follow up with them at some future date.

Table A-5. Number and percentage of students who left original school for whom parent consent was obtained, by type of data

Data source	Number	Percent
Base-year sample	4,692	100
Transferred to another school	930	20
Parent consent given		
Student survey	143	15
Administrative records	132	14

Student Survey. Student surveys were administered to sampled students in fall and winter of 2000 when they had just entered seventh grade. Students were followed up in spring 2002 when most had been promoted to the eighth grade. Students who were retained in seventh grade remained in the sample and were administered the eighth grade version of the survey. Table A-6 provides response rate information for the student surveys for the 2000–01 and 2001–02 school years.

The primary reason for the decline in response rates was the decreased rate of parent consent described earlier.

Parent Interview. Telephone interviews with the parents or guardians of sampled students coincided with the administration of the student surveys. Table A-6 also provides response rate information for the parent interviews for the 2000–01 and 2001–02 school years.

Student Administrative Records. Demographic and administrative data were collected for each sampled student at both the GEAR UP and non-GEAR UP schools using the SIM. Table A-6 provides response rate information for administrative data for the 2000–01 and 2001–02 school years. The drop in response

rate was because several schools changed from informed parental consent to requiring written, explicit consent.

Table A-6. Student-level response rates for GEAR UP and non-GEAR UP schools

Data source	Students in original school		GEAR UP		Non-GEAR UP	
	Number	Percent	Number	Percent	Number	Percent
Base-year sample	4,692	100	2,408	100	2,284	100
Seventh-grade (SY 2000–01)^						
Student survey	4,093	87	2,159	90	1,934	85
Parent interview	3,774	80	1,944	81	1,830	80
Administrative records	3,870	82	2,151	89	1,719	75
Eighth-grade (SY 2001–02)*						
Student survey	2,578	55	1,358	56	1,220	53
Parent interview	2,718	58	1,400	58	1,318	58
Administrative records	2,687	57	1,494	62	1,193	53
Report cards	2,271	48	1,204	50	1,067	47
Standardized test scores	2,430	52	1,283	53	1,147	50

^ Includes students who subsequently left original school.

* Excludes students who left original school before spring 2002.

Report Cards and Standardized Test Scores. Seventh- and eighth-grade report cards and standardized test scores were requested for all sampled students at the end of the 2001–02 school year. Response rates are given in table A-5. Changes in requirements for parental consent also contributed to a drop in response rates for these data.

GEAR UP Program Activity Records. Each partnership was asked to collect information about the types of GEAR UP activities students participated in, how the activities were delivered, where they occurred and the frequency and duration of these services. Table A-7 gives an overview of participation data response rates. Of the participating projects, 83 percent submitted student group activity and student one-on-one activity data, while 78 percent of the projects submitted parent group activity data for the 2001–02 school. Projects were less likely to provide data in the summer, with only 78 percent providing student group activity data and 67 percent submitting student one-on-one and parent group data. Projects submitting data often provided incomplete information. See appendix I for further discussion.

A.5 Management and Quality Control

Identification (ID) Number Structure and Data Linkage

The ID structure was designed to link sampled students, schools and projects and keep track of GEAR UP and non-GEAR UP status. Students were assigned a unique ID when the sample was drawn; this number stayed with the student across subsequent years of data collection. Parents were assigned the same ID as their child, thereby linking parents to the corresponding sampled student via the ID number.

Table A-7. Participation data response rates, project level

Type of activity and school year	GEAR UP schools	
	Number	Percent
Total schools	18	100
Student group activity		
2000–01 school year	14	78
Summer 2001	14	78
2001–02 school year	15	83
Student one on one		
2000–01 school year	14	78
Summer 2001	12	67
2001–02 school year	15	83
Parent group activity		
2000–01 school year	13	72
Summer 2001	12	67
2001–02 school year	14	78

In fall 2001, schools were asked to report each sampled student who transferred out of the participating GEAR UP or non-GEAR UP school. These students maintained the same randomly assigned student ID and grantee linkage but were flagged in the database as a transfer student (i.e., no longer enrolled in sampled school).

Data Entry and Data Cleaning

Survey and Student Information Matrix Data. To ensure that the student and parent survey data were complete and of high quality, trained clerical staff conducted a series of coding, data entry and editing procedures. Coding manuals, key entry and online editing programs, batch editing programs and frequency generation programs were created for each of the survey instruments. The Westat Codebook/Edit System (COED) was used for preparation of electronic files for the study data.

Clerical staff performed manual edits directly on student surveys, parent interviews and SIM forms to check each document for completeness, extraneous marks and proper adherence to skip instructions. Staff also performed manual and electronic range checks, primarily to identify where respondents may have misinterpreted questions. Staff coded SIM forms to indicate missing data.

Data entry staff keyed survey, participation and SIM data using software that provided for 100 percent key verification of all entries. Edits were performed after key entry. This included checking all fields for allowable use of numeric, alphabetic or special character entries; checking that each field contained only allowable codes; checking ranges to verify that coded values fell within permissible high and low values for each numeric field; and checking that skip instructions had been followed. In addition to these edits, data consistency and other logic checks were performed in batch editing. When the source of error was found to be in coding or keying, the error was corrected. When the problem could not be resolved, the

item was coded as "not ascertained." Project staff reviewed the frequencies of responses to all data items (both individually and in conjunction with related data items) to ensure that appropriate skip patterns were followed. Members of the data management team checked each item to make sure the correct number of responses was represented for all items. The team ran frequencies and checked them at the batch edit stage. After the batch files were considered clean on the basis of machine edits and the review of marginal frequencies, the data management team declared the data ready for analysis file generation.

Student Transcript Data. Students' seventh- and eighth-grade report cards and test scores as well as student information, such as promotion and honors, were entered in the Middle School Transcript System (MSTS), which was specifically adapted for this task from a high school transcript study data system. A list of classes offered by each school was entered into the MSTS. These classes were then matched against a list of courses in the Classification of Secondary School Course (CSSC) system, which served as a framework for coding classes. Information about classes taken by each student, such as course name, grade level, grade received, whether taught in language other than English and whether course was considered honors, special education or on grade level, was entered into the system. Any standardized test scores that may have been listed were also entered. Report card courses were verified using double-blind entry, where errors occurred the necessary corrections were made. Staff performed quality control checks to verify that data were correctly entered into the MSTS.

Annual Performance Report Data. Project staff entered data from APRs using a Web-based data entry system. Data were checked after key entry. This included checking all fields for allowable use of numeric, alphabetic or special characters; checking that each field contained only allowable codes; and checking ranges to verify that coded values fell within permissible high and low values for each numeric field. Frequencies of responses were run to ensure the correct number of responses was represented for all items.

Program Activity Records. Projects were asked to submit their program participation data to the evaluation team on a monthly basis. Projects submitted these data in a standardized format either as hard copy or electronically. Clerical staff performed manual edits directly on forms to check each document for completeness. Manual data checks were made to ensure that the listed services occurred within the data collection timeline. When problems interpreting data arose sites were contacted and asked to clarify any data conflicts. Data were then keyed into a database and frequencies were reviewed. After the files were considered clean on the basis of manual edits and the review of frequencies, the data management team declared the data ready for analysis file generation. See appendix I for a more detailed discussion of the methodology used to analyze program activity records.

Appendix B

Student Sample Design, Imputations, Weights and Error Estimation

This appendix describes how the student sample was drawn, how missing data were handled and how variances were estimated.

B.1 Sample Design

In August 1999, the U.S. Department of Education awarded 164 Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) partnership grants. From those awards, 20 projects were recruited to participate in the National Evaluation of GEAR UP. One school within each of the 20 partnership projects was then selected simultaneously with 20 non-GEAR UP (comparison) schools. Selection was based on several factors from the 1997 Common Core of Data (CCD). A more detailed description of how those selections were made is provided in appendix A.

In the 18 GEAR UP and 18 non-GEAR UP schools that agreed to participate in the longitudinal outcomes study component of the national evaluation, a total of 9,121 students enrolled in the seventh grade during fall 2000. (Although 2000–01 was the second year of the grant, the sampled students did not receive any GEAR UP services during the previous school year.) For those students enrolled in fall 2000, parent consent to participate in the evaluation was obtained for 6,941 students. From those with parent consent, a sample of 4,692 students was drawn.

The ideal situation would have been to include the entire seventh-grade class in the student sample to correspond to the whole-grade, or cohort, approach required of the GEAR UP partnerships. Many of the schools in the sampled partnerships, however, had very large seventh-grade classes. Preliminary information indicated that seventh-grade classes in the middle schools targeted by GEAR UP varied from about 60 students to as large as 600 students. For cost efficiency, students were sampled from the larger schools.

Sampling was done by setting a maximum sample size for a school at 140 students. For schools with a seventh-grade class of 140 or fewer students, all students were included in the sample. For schools with a seventh-grade class of more than 140 students, a simple random sample of 140 students was selected from the group. (The sample was slightly larger in a small number of schools because it would have been difficult to exclude a handful of students.) The sample size of 140 students per school was intended to yield data for 110 students on average per sampled school.

Students who were originally included in the sample were later excluded from the study. Specifically, 983 students who transferred out of the GEAR UP and non-GEAR UP schools before to the end of eighth grade were excluded from the longitudinal outcomes study as explained in appendix A and below.

B.2 Analysis of Students Leaving Sampled Schools

The original study design for the outcomes study called for following all sampled students for the duration of the study. However, during the data collection period, about 18 percent of the students in the sample left the schools they were attending in fall 2000. Because follow-up information was obtained only from about 20 percent of these students using contact information from students and from information parents provided during the fall 2000 data collection, the decision was made in collaboration with the Technical Working Group to define participation in GEAR UP as the length of the study period because of response rates and differential participation.

Table B-1 shows the percentages of students who attended GEAR UP or non-GEAR UP schools, whether they left their original sampled school ("Mobile" or "Stationary"), the student's College Orientation Index score, the student's race and ethnicity and whether the student would be the first in his or her family to attend college ("First Generation"). (See Appendix C, Index Construction, for a description of the College Orientation Index.) Overall the table shows that those students who left their schools (mobile students) before the end of eighth grade were different from those who remained (stationary students) on specific characteristics. In the GEAR UP schools, a greater percentage of the mobile students scored in the lowest third on the College Orientation index than the stationary students. A smaller percentage had the highest College Orientation Index scores. For students in non-GEAR UP schools, similar statistically significant differences were found for College Orientation Index scores.

Mobile students in both sets of schools were disproportionately African-American. In addition, mobile students in GEAR UP schools were disproportionately non-Hispanic while those in non-GEAR UP schools were disproportionately nonwhite.

It is important to note that the analysis controlled for baseline differences among the stationary students, so the disproportionality of the sample by mobility status does not affect the validity of the causal findings in this report. One interesting finding from this brief analysis of those who left the sampled school is that they are a group with a stronger than average need for intervention who are not able to fully benefit from GEAR UP because the program is tied to specific schools.

B.3 Imputation and Weights

The National Evaluation of GEAR UP obtained information about students participating in the study through eight different sources:

- Seventh-grade student surveys,
- Seventh-grade parent interviews,
- Seventh-grade student administrative records data,[39]

[39] Student administrative records data included information such as number of absences, enrollment in special programs (e.g., free or reduced-priced lunch, special education, gifted and talented) and demographic information.

Table B-1. Analysis of students who left their original sampled school before the end of eighth grade

	Students in GEAR UP schools				Students in Non-GEAR UP schools				Difference of the differences	
	% Mobile	% Station-ary	Difference		% Mobile	% Station-ary	Difference			
Measure	Est.	Est.	Diff.	95% Conf.	Est.	Est.	Diff.	95% Conf.	Diff.	95% Conf.
College Orientation Index	59.8	44.0	15.9*	(10.1,21.7)	62.8	40.1	22.8*	(14.9,30.7)	6.9	(-3.7,17.5)
Lowest 1/3	23.7	28.4	-4.6	(-9.6,0.3)	18.9	25.7	-6.8	(-13.5,0.0)	-2.1	(-12.6,8.3)
Middle 1/3	16.4	27.7	-11.2*	(-18.1,-4.4)	18.3	34.3	-16.0*	(-22.0,-10.0)	-4.8	(-11.7,2.2)
Highest 1/3										
Race/ethnicity										
White	39.1	41.0	-1.8	(-15.1,11.4)	28.8	50.5	-21.7*	(-38.6,-4.8)	-19.9*	(-33.1,-6.7)
African-American	35.6	21.0	14.7*	(0.2,29.2)	51.7	21.2	30.5*	(12.2,48.7)	15.8*	(1.0,30.5)
Hispanic	20.0	32.9	-12.9*	(-22.2,-3.6)	16.9	24.7	-7.8	(-20.0,4.5)	5.1	-3.2,13.4)
Asian	5.3	5.3	0.0	(-2.7,2.8)	2.7	3.7	-1.0	(-3.1,1.1)	-1.0	(-3.9,1.9)
First Generation										
Yes	89.9	84.2	5.6	(-0.3,11.6)	91.4	86.9	4.4	(-0.5,9.4)	-1.2	(-7.7,5.2)
No	10.1	15.8	-5.6	(-11.6,0.3)	8.7	13.1	-4.4	(-9.4,0.5)	1.2	(-5.2,7.7)

* Statistically significant at $\alpha = 0.05$.

- Eighth-grade student surveys,
- Eighth-grade parent interviews,
- Eighth-grade student administrative records data,
- Participation in program activity data, and
- Transcript data (report cards and standardized test score(s).

Copies of these instruments are included in appendix K.

Preferably, all of the students in the study would have had complete information from all eight sources; unfortunately, this was not the case. To address the fact that most students only had partial data, several different approaches were used.

The following discussion explains how imputation and weighting were used to account for missing and partial seventh-grade student data, seventh-grade parent data and seventh-grade student records data. The next section provides an explanation of the imputation and weighting used on eighth-grade student data, eighth-grade parent data and eighth-grade student administrative records data. Finally, the last section concerns nonresponse adjustment performed on transcript data. Because complete participation data were available for so few schools, no imputation or weighting was performed to offset gaps in the participation data (see appendix I for a discussion on analyzing the participation data).

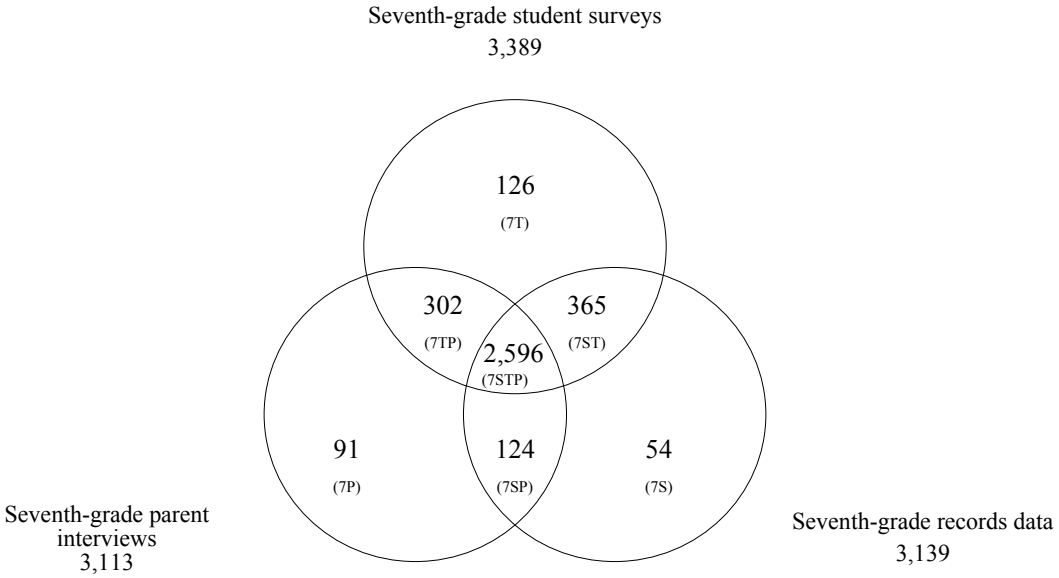
Seventh-Grade Imputation and Weighting

Among the 3,709 sampled non-transfer students with parental consent, complete information from all three seventh-grade sources was available for 2,596. (These students are located in section 7STP of figure B-1.) Of the remaining 1,113 students, 91 students in section 7P had only a parent interview. Given the lack of data, no adjustments were made for these 142 students. This left 971 with useful partial information in addition to the 2,596 with complete information. (These students are in sections 7T, 7TP, 7STP, 7ST, 7SP and 7S of figure B-1.) To compensate for the partial data for these students, three different techniques were used, depending on the type of data that were missing. The patterns of partial data are shown in figure B-1.

Nearest Neighbor Imputation for Cases with Missing Seventh-grade Parent Interview Data. The first adjustments performed were for those 491 cases without parent data but with student data. (These cases are in sections 7T and 7ST of figure B-1.) The procedure involved what is called a *Nearest Neighbor* imputation. In the Nearest Neighbor imputation, seventh-grade student survey data were used to predict a total College Orientation Index value for all cases in the sample.[40] Table B-2 contains a list of the variables, parameter estimates, and standard errors that were contained in the model that produced the predicted College Orientation Index value. Note that the model fit was very good with an R^2 of 0.88, indicating that a good measurement of the student's baseline College Orientation Index can be made even

[40] The College Orientation Index is based on both parent and student survey data, but in this case, the predicted College Orientation Index value was based only on the student variables in the index. See appendix C for a discussion of how this index was constructed.

Figure B-1. Number of cases with different combinations of each of three seventh-grade data sources



Where
7T = seventh-grade student survey data
7P = seventh-grade parent interview data
7S = seventh-grade student records data

NOTE: Fifty-one students with no forms of data are not included in this figure.

without parent data. The next step was to match each student with missing seventh-grade parent interview data to a student with seventh-grade parent interview data that had the closest predicted College Orientation Index value.

Once each case with missing seventh-grade parent interview data was matched to its nearest neighbor with those data, the values for all parent variables used in analyses were copied from the donor case (the case with seventh-grade parent interview data) to the recipient (the case without seventh-grade parent interview data). Copying these values en masse preserves the correlation structure among parental variables, while the choice of a donor matched on the student part of the College Orientation Index minimizes the attenuation in the correlation structure between parent and student variables that frequently arises from imputation. Table B-3 provides a list of those parent variables that were copied.

Table B-2. Variables, parameter estimates and standard errors used to create predicted College Orientation Index values

Variable	Parameter estimate	Standard error	F value	Pr > F
Intercept	0.81	0.17	23.6	<.0001
ImpWork_7	-0.33	0.09	13.1	0.0003
SkipClasses_7	-0.28	0.09	9.2	0.0024
Grades_7	1.27	0.11	141.5	<.0001
StdParTalk_7	1.18	0.08	197.2	<.0001
OtherSchoolHelp_7	-0.54	0.14	14.0	0.0002
ReadingHours_7	1.02	0.07	184.9	<.0001
NegJunkHours_7	0.32	0.08	17.7	<.0001
VolunteerFreq_7	-0.27	0.10	6.9	0.0087
Academic_7	1.17	0.04	822.3	<.0001
ExpectPSERev_7	1.24	0.02	3759.9	<.0001

Table B-3. Parent variables that were copied in the Nearest Neighbor procedure

CollegeAffordable_7	EventPlaySport_7	Performance_7
CollegeClose_7	EventPTA_7	Pexpect_7
Confer_events_7	Hmwkundr_7	Pimphardwork_7
ConferBehave_7	NumConfType_7	PrepMeet_7
ConferFreq_7	NumEventType_7	Sdiligent_7
ConferHomework_7	ParGrades_7	Simphardwork_7
ConferOther_7	ParInvolve_7	TalkCollege_7
ConferProgress_7	ParPrep_7	Ultdegree_7
EnufInfo_7	ParRptHmwkFreq_7	Workshop_7
EventBacktoSchool_7	ParRptHmwkHelp_7	WritInfo_7
EventFieldTrip_7	ParRptHmwkHour_7	

Cluster Analysis Imputation for Cases with Missing Seventh-grade Student Administrative Records Data. Because student administrative record data were not used in constructing the College Orientation Index, it made little sense to use the Nearest Neighbor technique, which is based on a predicted College Orientation Index score, to impute missing student records data. Instead, five student record variables were modeled using survey data. The five variables that were modeled are listed below:

- Whether the students were in an honors or gifted and talented program (HONORS),
- Total number of excused and unexcused absences for student (TOTABSNC),
- Number of unexcused absences for student (UNEXABSN),
- Total number of disciplinary actions taken against a student (TOTDISP), and
- Whether the student received any honors or awards (AWARDS).

These variables were chosen because of their theoretical importance to the program.[41] Although these variables were not analyzed in the body of the report, they were used in the removal of baseline differences (appendix E) and in the compensation for missing followup data. The models used seventh-grade student and parent interview responses to predict values for each of the five student records variables. (Tables B-4 through B-8 provide the variables and coefficients that made up each of the five models.) The models for HONORS and AWARDS were logistic regressions. The models for the other three variables were linear models of Box-Cox transforms of the variables.

Table B-4. Model for whether student was in an honors or gifted and talented program during seventh grade (HONORS_7)

Predictor variable	Beta coefficients	Standard error	Wald chi-square	Pr > ChiSq
Intercept	-2.13	0.15	193.64	<.0001
ParRptHmwkHelp_7	-0.20	0.07	8.83	0.00
ConferProgress_7	0.57	0.14	16.81	<.0001
EventBacktoSchool_7	-0.32	0.14	5.70	0.02
ParGrades_7	0.43	0.10	17.73	<.0001
ImpGoCollege_7	-0.32	0.10	10.74	0.00
ImpWork_7	-0.31	0.07	16.85	<.0001
Grades_7	0.72	0.12	38.76	<.0001
OtherSchoolHelp_7	-0.46	0.13	12.04	0.00
MathClub_7	0.39	0.13	8.30	0.00
CollegeBoundRev_7	0.08	0.01	41.59	<.0001

NOTE: The R^2 for this model was 0.24.

Table B-5. Model for total number of absences for student (excused or unexcused) during seventh grade (TOTABSNC_7)

Predictor variable	Beta coefficients	Standard error	t value	Pr > |t|
Intercept	1.44	0.01	161.18	<.0001
ConferBehave_7	0.03	0.01	2.32	0.02
Grades_7	-0.04	0.01	-6.90	<.0001
AbsentDays_7	-0.12	0.00	-26.07	<.0001
FriendHelp_7	-0.01	0.01	-1.27	0.21
TakingClasses_7	0.03	0.01	3.09	0.00
ParInvolve_7	-0.01	0.00	-4.72	<.0001
ExpectPSERev_7	0.00	0.00	2.51	0.01

NOTES: AbsentDays_7 is reverse coded. The R^2 for this model was 0.31.

[41] See appendix J for the glossary of definitions for these variables.

Table B-6. Model for number of unexcused absences for student during seventh grade (UNEXABSN_7)

Predictor variable	Beta coefficients	Standard error	t value	Pr > |t|
Intercept	-0.56	0.01	-76.12	<.0001
EventPlaySport_7	0.03	0.01	2.89	0.00
Grades_7	-0.03	0.00	-6.80	<.0001
AbsentDays_7	-0.10	0.00	-20.72	<.0001
SDiligent_7	-0.01	0.00	-3.12	0.00

NOTES: AbsentDays_7 is reverse coded. The R^2 for this model was 0.25.

Table B-7. Model for total number of disciplinary actions taken against student during seventh grade (TOTDISP_7)

Predictor variable	Beta coefficients	Standard error	F value	Pr > F
Intercept	-0.83	0.02	2556.46	<.0001
ConferBehave_7	0.25	0.03	82.02	<.0001
ParRptHmwkHour_7	-0.05	0.01	21.48	<.0001
BabysittingHours_7	0.02	0.01	10.60	0.00
CollegeBoundRev_7	-0.01	0.00	51.62	<.0001

NOTE: The R^2 for this model was 0.12.

Table B-8. Model for whether student received any honors or awards during seventh grade (AWARDS_7)

Predictor variable	Beta coefficients	Standard error	Wald chi-square	Pr > ChiSq
Intercept	-0.65	0.14	21.41	<.0001
EventBacktoSchool_7	-0.29	0.13	5.11	0.02
EventPlaySport_7	0.97	0.14	51.42	<.0001
ParGrades_7	0.51	0.08	44.05	<.0001
PrepMeet_7	0.24	0.06	17.30	<.0001
Grades_7	0.46	0.08	34.60	<.0001
BabysittingHours_7	-0.12	0.04	8.12	0.00

NOTE: The R^2 for this model was 0.2.

To demonstrate the bias that would have existed without student administrative records imputations, predicted values for HONORS and AWARDS were created, using the models described above. (Because this procedure was only used to demonstrate the need for student records imputations, only two of the five student records variables were tested.) The cases were then divided into four groups:

- Students with complete student records data in GEAR UP schools,
- Students with incomplete student records data in GEAR UP schools,
- Students with student records data in non-GEAR UP schools, and

- Students with incomplete student records data in non-GEAR UP schools.

Within each of these four groups, the predicted student records values were averaged for each variable. The group averages for these predicted student records variables are listed in table B-9. There were significant differences between students with complete student administrative records data and those with missing student records data, which reinforced the need to impute missing student administrative records data. The differences were particularly striking in the non-GEAR UP schools, where the students without student administrative records were predicted to be much less likely to be enrolled in honors programs and much less likely to have received awards.

Table B-9. Average predicted values for selected student administrative records variables, by school type and student records data status

Predicted student records variables, school type, and student records data status	Frequency	Mean (%)	Standard error (%)
HONORS variable			
GEAR UP students with missing student records data	126	18.0	1.7
GEAR UP students with complete student records data	1,683	18.5	0.5
Non-GEAR UP students with missing student records data	354	17.6	1.0
Non-GEAR UP students with complete student records data	1,260	22.4	0.6
AWARDS variable			
GEAR UP students with missing student records data	126	36.2	2.0
GEAR UP students with complete student records data	1,683	38.8	0.6
Non-GEAR UP students with missing student records data	354	36.7	1.1
Non-GEAR UP students with complete student records data	1,260	40.6	0.7

In the next step in the imputation process, a clustering algorithm was used to group each of the 3,389 students into one of five natural clusters. The groups were formed so that students were similar (homogeneous) with respect to the five variables listed above. In addition, each cluster was different (heterogeneous) with respect to those same variables. Table B-10 describes each of these five clusters.

Table B-10. Size and predicted seventh-grade student records values for each of the five natural clusters used for seventh-grade student records imputation

Cluster	Number of students	Percent of total	Predicted values for selected seventh-grade student records variables				
			HONORS	TOTABSNC	UNEXABSN	TOTDISP	AWARDS
1	835	24.6	1.11	-0.81	-0.78	-0.89	1.04
2	322	9.5	-1.52	1.63	1.52	1.67	-1.29
3	707	20.9	-0.80	-0.07	-0.07	0.34	-0.99
4	1,132	33.4	0.12	-0.32	-0.36	0.02	0.21
5	393	11.6	-0.02	1.42	1.58	-0.14	0.03

A general description could be crafted for each of these five clusters. Cluster No. 1 contained serious students who did well academically, attended classes regularly and were least likely to be disciplined. The students in Cluster No. 2 tended to do poorly academically and skip school a great deal. Cluster No. 3

contained students who did not do very well academically but who attended school regularly and were disciplined at close to average frequency. The students in Cluster No. 4 seemed to be average in most respects, with slightly better than average attendance. Finally, those students in Cluster No. 5 seemed to have average academic scores and average discipline issues but had attendance problems.

Within each of these clusters, whole seventh-grade student records were copied from randomly chosen students with complete seventh-grade student records data and assigned to randomly chosen students within the same cluster who had missing seventh-grade student records data. Copying complete records of seventh-grade student records ensured that the data were internally consistent. Copying data from a fellow student within the same cluster minimized the attenuation in the correlation structure among student records variables on the one hand and parent and student questionnaire variables on the other hand that frequently arose from imputation.

Nonresponse Adjustment for Cases with Missing Seventh-grade Student Survey Data. The most crucial seventh-grade data source was the seventh-grade student survey. Because of this fact, missing seventh-grade student survey data were not imputed; those cases that did not have seventh-grade student survey data were dropped from the analysis.

However, the data on these students that had been obtained from student records were used to minimize any bias from these students' nonresponse.[42] These data were used to perform a nonresponse adjustment (NRA). The NRA process created weights that, when applied to the remaining cases, reduced the impact of weighing the nonrespondents as zero. To create the NRA weights, all 3,389 students were partitioned into one of five groups based on their probability of nonresponse. This predicted response propensity was estimated using a logistic regression that estimated the likelihood of a student completing the student survey based on data available from the student record. The results were then used to create five groups that contained students with similar propensities for nonresponse. Table B-11 provides the beta coefficients for the logistic regression model used to predict each case's probability of nonresponse. Note that student nonresponse was most common among African-American students, students with poor attendance (the questionnaire was given in school), students with individualized education plans and students with limited English proficiency who were eligible for free or reduced-priced lunches.

Table B-11. Beta coefficients used to determine a student's propensity for response

Parameter	Estimate	Standard error	Wald chi-square	Pr > ChiSq
Intercept	6.19	0.73	72.74	<.0001
Black	-3.24	0.72	20.04	<.0001
TOTABSNC	-0.02	0.01	8.15	0.00
GENDER	-0.32	0.16	3.84	0.05
TRUANCY	-0.41	0.09	20.34	<.0001
IEP	-0.91	0.18	25.16	<.0001
AWARDS	1.76	0.59	8.83	0.00
LEP*LUNCH	-1.31	0.33	16.13	<.0001

NOTE: LEP*LUNCH refers to those in LEP programs but who were not eligible for free or reduced-priced lunches.

[42] As shown in figure B-1, 178 students had SIM data but no student questionnaire. (These students are represented in sections 7SP and 7S of figure B-1.) In addition, 91 students had only parent data (section 7P), and 51 students had no data at all. NRA can only minimize the bias associated with leaving the 178 out of the analysis.

Within each of the five groups, the weights of the nonrespondents were proportionally allocated to the respondents. When completed, the sum of the adjusted weights for the respondents was equal to the sum of the pre-adjusted weights for the nonrespondents and the respondents. After this transfer of weights, the nonrespondents were given a weight of zero. Responding students in groups with poor response rates had their weights increased. The following equation provides the equation that determined the transfer of weights.

$$W_{NR,c,i} = \begin{cases} \dfrac{\sum_{j \in c} W_{c,j}}{\sum_{j \in c} \delta_{c,j} W_{c,j}} W_{c,i} & \text{if } \delta_{c,i} = 1 \\ 0 & \text{if } \delta_{c,i} = 0 \end{cases}$$

where

$W_{NR,c,i}$ = the new nonresponse-adjusted weight

$W_{c,j}$ = the initial weight of student j in the c^{th} cell

$W_{c,i}$ = the initial weight of student i in the c^{th} cell

$\delta_{c,j}$ = 1 if the j^{th} member of the c^{th} cell is a respondent, 0 otherwise

$\delta_{c,i}$ = 1 if the student i in cell c is a respondent, 0 otherwise

Eighth-grade Imputation and Weighting

The imputation and weighting procedures used to account for partial or missing eighth-grade data were a more complex version of the procedures used to manage partial or missing seventh-grade data. Figure B-2 summarizes the number of cases with different combinations of the three eighth-grade data sources to be discussed in this section.

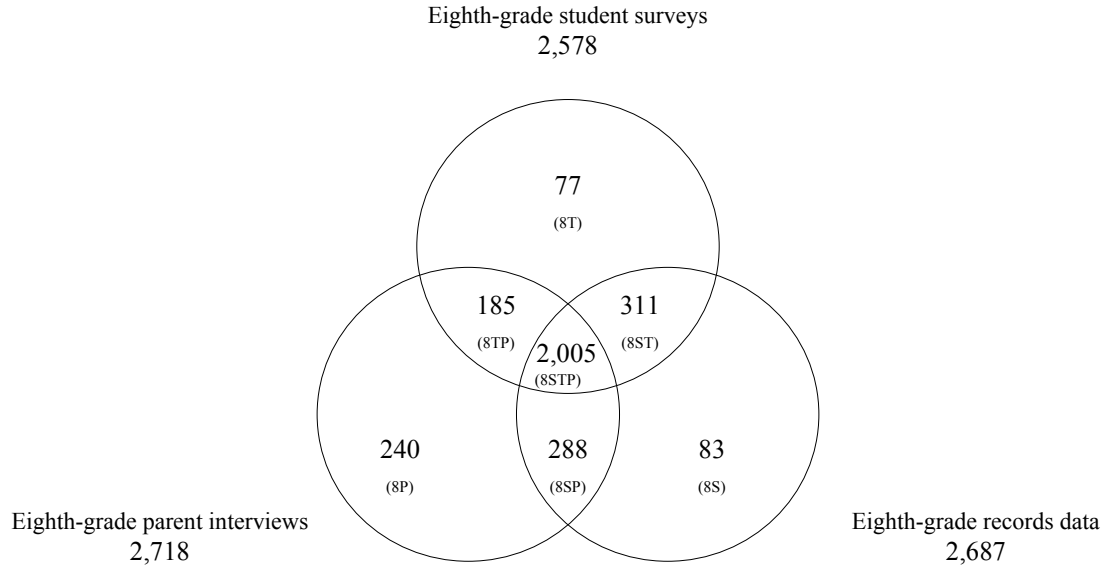
The total number of eighth-grade student surveys, parent interviews and student records data forms is lower than for the seventh grade, primarily because during the eighth-grade survey procedure, permission issues arose in several of the schools. Because of these difficulties, many students were not allowed to complete the eighth-grade student survey at school, as planned. Subsequently, during the course of parent telephone interviews, parent interviews were obtained for many of these students, but student response rates were still much lower. Given the large number of nonresponding students with responding parents and given the high correlation that had previously been discovered between parent and student variables, it was decided to classify a student as a respondent at the eighth-grade level if either he or she responded or his or her parent responded. This meant that imputation was used for missing student questionnaires and for missing parent questionnaires and missing student records. Nonresponse weighting was used only for those students for whom neither a student nor a parent questionnaire was obtained.

Nearest Neighbor Imputation for Cases With Missing Eighth-grade Student or Parent Data. Several sections of figure B-2 had missing eighth-grade student or parent interview data and, therefore, required data imputation using the Nearest Neighbor technique.

Imputing Eighth-grade Student Data for Those with Only Eighth-Grade Parent Data. The 240 cases in section SP of figure B-2 contained no eighth-grade data other than eighth-grade parent interview data. To

impute eighth-grade student data for these cases, complete seventh-grade records[43] and eighth-grade parent records were used to predict an eighth-grade College Orientation Index value for all 3,389 cases with positive seventh-grade weights.[44] Table B-12 contains a list of variables and beta coefficients that were used in the model to produce these predicted College Orientation Index values. Note that interpretation of this table is complicated by the use of indices as predictors. A number of the predictors have substantial correlations with each other and, therefore, this table is presented for documentation purposes only. Apart from that complicating issue, the model does well at predicting College Orientation Index, with an R^2 of 0.77.

Figure B-2. Number of cases with different combinations of each of the three eighth-grade data sources



Where
8T = eighth-grade student survey
8P = eighth-grade parent interview
8S = eighth-grade student records data

NOTES: This figure does not include 200 cases with seventh-grade student survey data but no data from any of the three eighth-grade data sources. A nonresponse adjustment was performed to account for these students. That procedure is explained later in this appendix.

[43] For the Nearest Neighbor imputations, the phrase *complete seventh-grade records* refers to all of the seventh-grade student and parent questionnaire data as well as seventh-grade administrative record data, regardless of whether or not they were imputed at the seventh-grade level.

[44] The eighth-grade College Orientation Index is based on seventh- and eighth-grade parent and student survey data. In the Nearest Neighbor imputations, however, the predicted College Orientation Index values were based on seventh-grade parent and student survey data and either eighth-grade parent or eighth-grade student survey data, whichever are noted as used in that particular imputation.

Table B-12. Variables and beta coefficients used in the model to predict College Orientation Index values for the imputation of student data to cases in Section 8P

Model Term	Estimate	Standard error	tValue	Probt
Intercept	-38.20	17.70	-2.16	0.03
ArtsTutother_7	6.04	2.74	2.20	0.03
ClubHours_7	7.39	3.72	1.99	0.05
ConferBehave_8	-7.97	2.84	-2.81	0.01
EXABSNC7	-43.26	16.44	-2.63	0.01
EventBacktoSchool_7	-5.89	2.13	-2.76	0.01
FriendOpImport_7	10.89	4.82	2.26	0.02
MathTutother_7	-6.42	2.59	-2.48	0.01
ParentAttends_7	9.17	2.87	3.20	0.00
PostSecPlan_7 1	-0.54	4.91	-0.11	0.91
PostSecPlan_7 2	2.46	5.21	0.47	0.64
PostSecPlan_7 3	-6.86	2.53	-2.71	0.01
PostSecPlan_7 4	0.00	.	.	.
ProfAspiration_7	5.57	2.16	2.57	0.01
SiblingEd_8	12.78	4.73	2.70	0.01
Volunteerism_8	6.06	2.38	2.54	0.01
simphardwork_7	-13.82	6.69	-2.07	0.04
ultdegree_8	27.67	4.30	6.43	<.01
ChurchFreq_7	12.98	3.12	4.16	<.01
CollegeBoundRev_7	184.24	26.16	7.04	<.01
FriendFreq_7	-12.24	3.31	-3.70	0.00
GENDER	-28.99	7.75	-3.74	0.00
HHIncome_8	11.75	3.32	3.54	0.00
Heard4Year_7	-9.99	2.62	-3.82	0.00
ParGrades_8	-74.25	23.14	-3.21	0.00
performance_7	-44.22	11.58	-3.82	0.00
performance_8	161.33	17.80	9.06	<.01
pexpect_7	-48.46	6.91	-7.01	<.01
CollegeBoundRev_7*ParGrades_8	165.59	31.86	5.20	<.01
GENDER*pexpect_8	27.14	10.51	2.58	0.01
Performance_8*pexpect_8	139.46	11.49	12.14	<.01

Each case in section 8P was then matched to the case with a parent and student survey (section 8TP) or the case with data from all three sources (section 8STP) with the closest predicted College Orientation Index value and that was in the same GEAR UP group.[45] Once each case from section 8P was matched to its nearest neighbor, eighth-grade student data were copied from the donor (the case in either section 8TP or section 8STP) to the recipient (the case in section 8P).

[45] In other words, cases from GEAR UP schools were only matched with other cases from GEAR UP schools and cases from non-GEAR UP schools were only matched with others from non-GEAR UP schools. This additional stipulation was used in all of the eighth-grade imputations but was not required for seventh-grade imputations.

Imputing Eighth-grade Student Data for Those with Eighth-Grade Parent and Eighth-Grade Student Records Data. There were 288 cases with eighth-grade student records data and eighth-grade parent data but no eighth-grade student data. (These cases are in section 8SP of figure B-2.) To impute eighth-grade student data for these cases, complete seventh-grade data, eighth-grade student records, and eighth-grade parent data were used to predict an eighth-grade College Orientation Index value for all 3,389 cases. Table B-13 provides the variables, and their beta coefficients, used to produce these predicted College Orientation Index values. The R^2 for this model is 0.77, indicating that it is a strong predictor of the College Orientation Index values.

Each of the 288 cases in section 8SP was then matched to a case with student survey, parent interview and student records data (section 8STP) with the closest predicted College Orientation Index value and that was in the same GEAR UP group. Then, student data were copied from each donor to its recipient.

Imputing Eighth-grade Parent Data for Those with Eighth-grade Student Data. Sections 8T and 8ST contained a total of 338 cases, all of which had eighth-grade student data but no eighth-grade parent data. Imputation of eighth-grade parent data were performed for these cases by predicting an eighth-grade College Orientation Index value for all 3,389 cases, based on their seventh-grade records and eighth-grade student questionnaires.[46] Table B-14 contains a list of variables and beta coefficients that were used in the model to produce these predicted College Orientation Index values. This model's R^2 is 0.92, revealing that it is an extremely strong predictor of College Orientation Index values.

Each case in sections 8T and 8ST was then matched with the case with a parent and student survey (section 8TP) or a case with data from all three sources (section STP) that had the closest predicted College Orientation Index value and that was in the same GEAR UP group. Then, eighth-grade parent data were copied from the donor to the recipient.

Cluster Analysis Imputation for Cases with Missing Eighth-grade Student Records Data. The 503 students in sections 8T, 8TP and 8P in figure B-2 had missing eighth-grade student records data that needed to be imputed. As with the seventh-grade student records data, five student records variables were predicted. These predictions were made from the seventh-grade records and responses from both the eighth-grade student and parent questionnaires. The data used to create these models were taken only from those students with complete eighth-grade records (i.e., those in section STP in figure B-2). The five eighth-grade student records variables to be predicted were the same as were used for the seventh-grade model: HONORS, TOTABSNC, UNEXABSN, TOTDISP, and AWARDS. Tables B-15 through B-19 provide the variables and coefficients that made up each of the five models.

After the models were formed, predicted values for each of the five eighth-grade student records variables discussed above were predicted for each of the 2,507 students in sections 8STP, 8T, 8TP and 8P of figure B-2. A clustering algorithm was then used to group each student into one of five natural clusters. Within each cluster, students were homogeneous with respect to the five eighth-grade student records variables, but heterogeneous across the other four groups, with respect to those five variables. Table B-20 provides information on each of the five clusters.

[46] Student records data were ignored as probably contributing little to predicting parent variables beyond the students' own reports.

Table B-13. Variables and beta coefficients used in the model to predict College Orientation Index values for the imputation of student data to cases in section 8SP

Model Term	Estimate	Standard error	tValue	Probt
Intercept	-90.38	6.60	-13.7	<.001
AWARDS8	2.92	1.33	2.2	0.028
ChurchFreq_7	8.11	1.92	4.2	<.001
CollegeBound_7	155.75	10.73	14.5	<.001
EventBacktoSchool_7	-4.15	1.33	-3.1	0.002
ExpectPSERev_7	19.65	6.46	3.0	0.002
FriendFreq_7	-5.81	2.05	-2.8	0.005
FriendOpImport_7	7.60	2.99	2.5	0.011
HHIncome_8	7.07	2.03	3.5	0.001
ProfAspiration_7	3.18	1.35	2.4	0.019
SiblingEd_8	7.56	2.95	2.6	0.010
Volunteerism_8	4.26	1.48	2.9	0.004
Performance_8	141.52	7.27	19.5	<.001
pexpect_8	72.39	4.62	15.7	<.001
GENDER	-5.04	1.32	-3.8	0.000
ParentAttends_7	6.66	1.76	3.8	0.000
TOTABS8	-26.91	7.40	-3.6	0.000
Performance_7	-29.88	5.73	-5.2	<.001
pexpect_7	-31.62	4.42	-7.2	<.001
ParGrades_8*ultdegree_8	27.77	3.28	8.5	<.001

As with the seventh-grade cluster analysis, these five clusters seem to describe familiar groups of students. Students with missing eighth-grade student records data were then randomly matched to students with complete eighth-grade student records data in the same cluster. Whole eighth-grade student records were then copied from donors to recipients.

Nonresponse Adjustment for Eighth-grade Data. For the seventh-grade imputation, a student questionnaire was necessary for the analysis; if a student had not completed a seventh-grade student questionnaire, he or she was considered a nonrespondent. Because of the permission issues discussed earlier, there were a number of completed eighth-grade parent interviews or eighth-grade student records data forms without a corresponding eighth-grade student questionnaire. (Figure B-2 provides exact counts of the number of cases with different combinations of data.) As noted earlier, because of this situation, the rule determining a nonrespondent was changed for eighth-grade data. A student was considered a respondent for the eighth-grade portion of the analysis if he or she had a completed seventh-grade student questionnaire and had either a completed eighth-grade student questionnaire or a completed eighth-grade parent interview.

Students without a completed seventh-grade student questionnaire had already been weighted as nonrespondents during the seventh-grade procedure. By definition, only those students with seventh-grade student questionnaires were allowed into the eighth-grade analysis. Among those in the eighth-grade analysis, students with neither a completed eighth-grade student questionnaire nor a completed eighth-grade parent interview were given a weight of zero and counted as nonrespondents. These 83

Table B-14. Variables and beta coefficients used in the model to predict College Orientation Index values for the imputation of parent data to cases in sections 8T and 8ST

Model Term	Estimate	Standard error	tValue	Probt
Intercept	-73.21	3.01	-24.3	<.001
Academic_8	87.06	2.25	38.7	<.001
AdultHangFreq_8	-2.00	0.64	-3.2	0.002
Adultmentor_7	-1.06	0.43	-2.5	0.013
DontNeedHelp_8	-1.30	0.55	-2.4	0.018
ExpectPSERev_8	101.44	3.53	28.7	<.001
ExpectPSE_8	9.21	2.75	3.4	0.001
Grades_8	6.46	1.24	5.2	<.001
HONORS7	1.61	0.54	3.0	0.003
ImpWork_8	-5.17	1.56	-3.3	0.001
LeagueSports_8	-0.85	0.43	-2.0	0.046
ParentEd_7	3.31	0.97	3.4	0.001
ReadingHours_8	16.21	0.85	19.1	<.001
RevParDKCount_7	6.59	2.34	2.8	0.005
StdParTalk_7	2.32	0.89	2.6	0.010
StdParTalk_8	15.67	0.91	17.2	<.001
TeacherHelp_7	1.59	0.52	3.1	0.002
pexpect_7	12.66	1.20	10.6	<.001
raceeth_7 1	2.07	0.85	2.4	0.015
raceeth_7 2	2.44	0.93	2.6	0.009
raceeth_7 3	3.21	0.93	3.5	0.001
raceeth_7 4	1.08	1.72	0.6	0.530
raceeth_7 5	0.00	.	.	.
FirstLanguage_8	-1.16	0.60	-1.9	0.053
HowHard_7	-2.85	1.07	-2.7	0.008
ImpGoCollege_7	2.86	1.14	2.5	0.012
SciTutother_8	-2.50	0.56	-4.4	<.001
hmwkundr_7	-5.86	1.71	-3.4	0.001
Performance_7	23.90	2.12	11.3	<.001

students, whose only eighth-grade source of information was student records data, are in the section 8S of figure B-2.

In addition to those from section 8S of figure B-2, the NRA had to adjust for 200 cases with seventh-grade student survey data and no data from any of the three eighth-grade data sources. There were indications that these students had not left the sample by transferring to another school. Nevertheless, there were no eighth-grade data about them.

Eliminating these two groups of students from the sample reduced the sample size from 3,389 to 3,106. As with the seventh-grade data, an NRA needed to be performed to minimize the effect of weighting 283 cases as nonrespondents. The NRA process would reweight the remaining 3,106 cases so that their combined weight would match the weight of the original 3,389.

Table B-15. Model for HONORS_8

Model Term	Estimate	Standard error	ChiSq	ProbChiSq
Intercept	-5.23	0.67	61.7	<.0001
AttendClforColl_7	0.35	0.15	5.7	0.017
CollegeBound_7	3.53	0.90	15.5	<.0001
CollegeMoreMoney_8	1.14	0.38	9.0	0.0027
GrParentGoCollege_7	-0.44	0.16	7.4	0.0065
HONORS7	2.19	0.15	205.1	<.0001
HeardVocEd_7	0.37	0.14	7.0	0.0084
INSCSUSP7	-3.12	1.44	4.7	0.0306
ImpWork_7	-1.82	0.51	12.9	0.0003
MathTutother_7	-0.37	0.18	4.5	0.0345
OtherHelp_7	-0.42	0.16	7.3	0.0069
ParGrades_7	1.41	0.43	10.6	0.0011
ParRptHmwkHelp_7	-0.63	0.26	5.7	0.0169
ParentAttends_8	-0.52	0.20	6.7	0.0099
SiblingHelp_8	0.30	0.14	4.8	0.0289
SkipClasses_8	-1.03	0.38	7.3	0.007
SoloSport_7	-0.40	0.18	4.7	0.0305
VisitCollCamp_7	0.51	0.15	11.5	0.0007
Yearbook_8	0.43	0.20	4.5	0.0336
conferFreq_7	0.78	0.26	9.2	0.0025
knowcollcampus_7	0.53	0.17	9.4	0.0022
ultdegree_8	0.62	0.25	6.3	0.012
AttendPlays_8	-0.75	0.18	18.0	<.0001
Grades_7	1.54	0.43	12.8	0.0003

To create the NRA weights, a logistic regression predicted the probability of nonresponse for each case in the original group of 3,389. Then, each of the 3,389 cases was placed into one of five groups of cases with similar predicted probabilities for nonresponse. Table B-21 provides the beta coefficients for the logistic regression model used to predict each case's probability of nonresponse. Note that only seventh-grade variables were allowed into the model but that all three sources of seventh-grade data were used.

Within each of the five groups, nonrespondents' weights were proportionally allocated to the respondents. After this weight transfer, nonrespondents were given a weight of zero. The equation to determine the transfer of weights is the same as was used for the seventh-grade nonresponse adjustment and is located on page B-11. The weights for GEAR UP and non-GEAR UP students were separately adjusted.

Table B-16. Model for TOTABSNC_8

Model Term	Estimate	Standard error	tValue	Probt
Intercept	1.592	0.069	22.9	<.0001
AttendPlays_7	0.086	0.024	3.6	0.0004
EXABSNC7	0.775	0.224	3.5	0.0005
Firstlanguage_7	0.067	0.030	2.2	0.025
FriendOpImport_7	-0.139	0.046	-3.0	0.0024
HeardVocEd_7	0.050	0.020	2.5	0.0131
Mobility_7	0.098	0.028	3.4	0.0006
NumAdult_7	-0.114	0.024	-4.7	<.0001
ParRptHmwkHour_7	-0.103	0.045	-2.3	0.0219
Truancy_7	0.205	0.035	5.8	<.0001
raceeth_7 1	0.032	0.040	0.8	0.4297
raceeth_7 2	-0.152	0.044	-3.5	0.0005
raceeth_7 3	-0.141	0.043	-3.2	0.0012
raceeth_7 4	-0.116	0.082	-1.4	0.1596
raceeth_7 5	0.000	.	.	.
ChurchFreq_7	-0.118	0.029	-4.0	<.0001
INSCSUSP7	0.544	0.154	3.5	0.0004
OUTSSUSP7	0.497	0.136	3.7	0.0003
TOTABSNC7	3.393	0.189	18.0	<.0001
GENDER*TOTABSNC7	-0.661	0.171	-3.9	0.0001

Table B-17. Model for UNEXABSN_8

Model Term	Estimate	Standard error	tValue	Probt
Intercept	-0.856	0.039	-21.89	<.0001
AttendPlays_7	0.047	0.014	3.4	0.0007
Band_7	-0.025	0.012	-2.12	0.0344
Firstlanguage_7	0.032	0.017	1.91	0.0569
ProfAspiration_7	-0.028	0.012	-2.36	0.0184
TOTABSNC7	0.375	0.079	4.73	<.0001
UNEXABSN7	0.878	0.090	9.75	<.0001
raceeth_7 1	0.058	0.023	2.51	0.0121
raceeth_7 2	0.107	0.025	4.23	<.0001
raceeth_7 3	-0.033	0.025	-1.31	0.1902
raceeth_7 4	0.052	0.047	1.1	0.2728
raceeth_7 5	0.000	.	.	.
CollegeBoundRev_7	-0.293	0.044	6.66	<.0001
INSCSUSP7	0.152	0.083	-1.82	0.0691

Table B-18. Model for TOTDISP_8

Model Term	Estimate	Standard error	tValue	Probt
Intercept	-0.82	0.16	-5.23	<.0001
AbsentDays_7	0.16	0.08	2.1	0.0356
CollegeBoundRev_7	-1.65	0.21	-8	<.0001
ConferBehave_7	0.35	0.07	4.96	<.0001
HowFarSchool_7	0.35	0.10	3.63	0.0003
NegVideoHours_7	-0.23	0.08	-2.9	0.0038
TOTDISP7	1.43	0.50	2.83	0.0047
raceeth_7 1	-0.29	0.09	-3.23	0.0013
raceeth_7 2	-0.01	0.10	-0.09	0.9271
raceeth_7 3	-0.23	0.09	-2.44	0.0146
raceeth_7 4	-0.10	0.18	-0.56	0.5723
raceeth_7 5	0.00	.	.	.
INSCSUSP7	2.90	0.53	5.47	<.0001
OUTSSUSP7	2.27	0.36	6.38	<.0001
ParRptHmwkHour_7	-0.52	0.10	-5.04	<.0001
TRUANCY7	3.36	0.42	7.99	<.0001
INSCSUSP7*OUTSSUSP7	-6.41	1.09	-5.9	<.0001

Table B-19. Model for AWARDS_8

Model Term	Estimate	Standard error	ChiSq	ProbChiSq
Intercept	-2.29	0.29	61.57	<.001
AdvisClassNeed_8	-0.46	0.10	21.81	<.001
ParPrep_8	1.05	0.18	32.76	<.001
ExpectPSERev_7	1.08	0.38	8.12	0.004
ParGrades_8	1.45	0.25	35.01	<.001
TOTDISP7	-4.75	1.00	22.7	<.001
AWARDS7*ExpectPSERev_7	1.57	0.19	71.13	<.001
AWARDS7*TeamSport_8	-0.69	0.16	19.47	<.001

Table B-20. Size and predicted eighth-grade student records values for each of the five natural clusters used for eighth-grade student records imputation

	Number of	Percent	Predicted values for selected eighth-grade student record variables				
Cluster	students	of total	HONORS	TOTABSNC	UNEXABSN	TOTDISP	AWARDS
1	243	9.7%	-0.584	1.716	1.372	-0.013	-0.516
2	604	24.1%	0.134	-0.192	-0.527	-0.547	1.020
3	936	37.3%	-0.560	-0.271	-0.007	0.004	-0.495
4	474	18.9%	1.593	-0.574	-0.750	-0.548	0.496
5	250	10.0%	-0.678	0.899	1.389	2.361	-1.050

Table B-21. Beta coefficients used to determine a student's propensity for nonresponse

Parameter	Estimate	Standard error	Wald chi-square	Pr > ChiSq
Intercept	0.27	0.38	0.5	0.5
Drama_7	0.50	0.23	4.6	0.0
Grades_7	0.71	0.25	7.8	0.0
LeagueSports_7	0.34	0.14	5.7	0.0
ParTalkPolitics_7	-0.46	0.18	6.4	0.0
TOTDISP7	-1.68	0.59	8.1	0.0
Volunteerism_7	-0.41	0.16	6.2	0.0
knowcollcampus_7	0.72	0.25	8.6	0.0
raceeth_7 (level 1)	-0.55	0.31	3.2	0.1
raceeth_7 (level 2)	-0.41	0.31	1.7	0.2
raceeth_7 (level 3)	0.31	0.33	0.9	0.3
raceeth_7 (level 4)	0.10	0.56	0.0	0.9
raceeth_7 (level 5)	0	0	.	.
Band_7	0.58	0.15	14.6	0.0
ConferBehave_7	-0.76	0.18	18.6	<.01
ConferProgress_7	1.37	0.22	39.3	<.01
EnglishHomework_7	1.56	0.46	11.4	0.0
FriendFreq_7	0.65	0.19	11.9	0.0
Mobility_7	2.42	0.41	35.0	<.01
TeacherHelp_7	0.51	0.14	12.9	0.0
ConferProgress_7*Mobility_7	-1.31	0.37	12.8	0.0
LUNCH7*Mobility_7	-1.39	0.36	14.8	0.0

Nonresponse Adjustment for Missing Transcript Data. It was decided that transcript data would not be imputed for those students with missing transcript data. Instead, those with missing transcript data would be labeled as nonrespondents for transcript analysis[47] and given a transcript weight of zero. As when students with missing seventh-grade student survey and eighth-grade student survey and parent data were weighted as nonrespondents, a nonresponse adjustment was necessary to minimize the effect of those nonrespondents.

The transcript NRA process created weights that, when applied to the remaining respondents, reduced the impact of weighing the nonrespondents as zero. To create these NRA weights, the probability of being a transcript nonrespondent was predicted for all of the students. That probability of nonresponse was estimated with a logistic regression and was based on seventh- and eighth-grade data. Table B-22 provides a list of the variables used in the model to predict a student's probability of transcript nonresponse. Note that many of the variables were student records variables. The reasons for transcript nonresponse among nontransfer students are unclear but probably have to do with school decisions rather than student or parent decisions.

[47] These students were used in all analyses except the transcript analyses.

Table B-22. Variables and beta coefficients used to predict a student's probability of transcript nonresponse

Model Term	Estimate	Standard error	ChiSq	ProbChiSq
Intercept	2.79	0.34	68.7	<.0001
AttendMeetCollPrep_7*LUNCH8	0.71	0.20	12.9	0.0003
Confer_events_7*HeardCommColl_7	1.69	0.45	14.2	0.0002
DadHelp_7*LUNCH8	-0.67	0.15	19.7	<.0001
DontNeedHelp_7*tschool	0.96	0.19	26.6	<.0001
ESLBIL8*LEP7	2.60	0.71	13.5	0.0002
EventPTA_7*HeardCommColl_7	-0.94	0.20	21.4	<.0001
LEP7*OUTSSUSP7	-12.35	3.80	10.6	0.0012
LEP7*TOTABSNC7	9.26	2.72	11.6	0.0007
LEP7*TRUANCY7	-3.15	1.59	3.9	0.0482
LEP7*computerathome_7	-0.91	0.29	10.2	0.0014
LUNCH7*LUNCH8	1.74	0.17	102.2	<.0001
LUNCH7*computerathome_7	0.74	0.19	15.2	<.0001
LUNCH8*TRUANCY7	-3.28	1.17	7.9	0.0051
LUNCH8*computerathome_7	-0.82	0.17	22.9	<.0001
ParentEd_7*tschool	1.05	0.27	15.2	<.0001
computerathome_7*tschool	0.64	0.18	12.6	0.0004
ClubLeader_7	0.31	0.16	3.9	0.0497
ConferBehave_7	-0.50	0.14	11.9	0.0006
EdFor30_7	0.54	0.23	5.6	0.0182
HeardCommColl_7	-0.43	0.15	7.8	0.0052
LUNCH7	-1.01	0.19	29.3	<.0001
LibraryUsage_7	-0.75	0.24	9.7	0.0018
MathClub_7	-0.40	0.11	13.5	0.0002
OUTSSUSP7	2.47	0.80	9.6	0.0019
OtherHomework_7	0.73	0.20	13.0	0.0003
TalkCollege_7	-0.34	0.14	6.1	0.0134
tschool	-2.68	0.23	141.5	<.0001

Once the probability of being a transcript nonrespondent was estimated for each student, the students were partitioned into one of five groups, based on that probability. Within each of the five groups, the weights of the nonrespondents were transferred, proportionally allocated, to the respondents, so that the sum of the adjusted weights for the respondents was equal to the sum of the pre-adjusted weights for the nonrespondents and respondents combined. At this point, the nonrespondents were given a weight of zero. The equation on page B-11 that governed the transfer of weights for seventh-grade student survey nonresponse was also applied to these transcript nonrespondents. As with the nonresponse adjustment for missing eighth-grade data, weights were adjusted for these data separately for GEAR UP and non-GEAR UP students.

B.4 Variance Estimation

Variances were estimated using a new resampling method. For a general discussion of resampling variance estimation, see appendix A of the WesVar 4.0 manual[48] or Wolter.[49] A new method was developed for the GEAR UP evaluation because of the small number of matched pairs of GEAR UP and non-GEAR UP schools. The original design had 20 pairs, but only 36 schools cooperated at baseline, including 17 matched pairs, leaving one GEAR UP and one non-GEAR UP unmatched among cooperating schools. These two unmatched schools were paired for purposes of variance estimation, leading to 18 pairs. The new method was designed to maximize the stability of the variance estimates given these conditions.

The procedure involved creating 18 replicate weights for every student. On a given replicate, a pair of schools was given a reduced weight, while the remaining 17 pairs got an increased weight. The formula is

$$W_{rijk} = \begin{cases} \frac{1}{2} & \text{if } r = i \text{ for } r = 1,...18, \text{ and } i = 1,...,18 \\ \frac{35}{34} & \text{otherwise} \end{cases}$$

where r indexes the replicate weights, i indexes the pairs, j indexes the schools within a pair, and k indexes the students within a school.

All the adjustments for nonresponse and GEAR UP propensity described in other sections of this appendix and in appendix E were also applied to the replicate weights. This was done by replicating the adjustment factors and then applying the replicated adjustment factors to the replicate weights. For example, in the adjustment for student nonresponse in the seventh-grade, the r-th replicated nonresponse adjustment factor for students in a nonresponse adjustment cell c was

$$f_{rc} = \frac{\sum_{ijk \in c} w_{rijk}}{\sum_{ijk \in c} \delta_{ijk} w_{rijk}},$$

where $\delta_{ijk} = \begin{cases} 1 \text{ if the student is a respondent and} \\ 0 \text{ otherwise} \end{cases}$

The r-th replicated nonresponse adjusted weight was then

$W_{rijk} = \delta_{ijk} f_{rc} W_{rijk}$ where $ijk \in c$.

[48] Westat. *WesVar 4.0 User's Guide.* Rockville, Md: Westat, 2000.

[49] K.M. Wolter. *Introduction to Variance Estimation*. New York: Springer-Verlag, 1985.

The set of replicate weights appropriate for a certain analysis was used to estimate the variance on a statistic *t* using the following formula:

$$\hat{v}(t) = 4\frac{17}{18}\sum_{r=1}^{18}(t_r - t)^2 ,$$

where t_r is the value of the statistic obtained when the *r*-th set of replicate weights is used in forming the statistic.

This section closes with some discussion of this variance estimator and two theorems that relate it to better known variance estimators.

Theorem One. For linear statistics restricted to either GEAR UP or non-GEAR UP schools, $\hat{v}(t)$ is identical to the standard variance estimator for a two-stage sample where the first stage is a simple random sample with replacement. For variance estimation, this is equivalent to a single stage simple random sample with replacement as discussed in section 3 of chapter 6 of volume 2 of Hansen, Hurwitz and Madow, 1953.[50]

Proof:

Let $t = \sum_{i=1}^{18}\sum_{k}\alpha_{ijk}y_{ijk}$ be some linear function of the questionnaire data on sample students in either the GEAR UP (*j*=1) or non-GEAR UP schools (*j*=2), where y_{ijk} is some numeric measurement on the student and α_{ijk} is some constant that depends only on the sample design such as 1/18 (average school total) or 1/n (average student response).

The replicated version of this statistic is

$$\begin{aligned} t_r &= \sum_{i=1}^{18}\sum_{k} w_{rijk}\alpha_{ijk}y_{ijk} \\ &= \sum_{k}\frac{1}{2}\alpha_{ijk}y_{rjk} + \sum_{i\neq r}^{18}\sum_{k}\frac{35}{34}\alpha_{ijk}y_{ijk} \end{aligned}$$

[50] M.H. Hansen, W.N. Hurwitz, and W.G. Madow. *Sample Survey Methods and Theory*. New York: John Wiley and Sons, 1953.

and so the estimated variance is

$$
\begin{aligned}
\hat{v}(t) &= 4\frac{17}{18}\sum_{r=1}^{18}\left(t_r - t\right)^2 \\
&= 4\frac{17}{18}\sum_{r=1}^{18}\left(\sum_k \frac{1}{2}\alpha_{ijk}y_{rjk} + \sum_{i\neq r}^{18}\sum_k \frac{35}{34}\alpha_{ijk}y_{ijk} - \sum_{i=1}^{18}\sum_k \alpha_{ijk}y_{ijk}\right)^2 \\
&= 4\frac{17}{18}\sum_{r=1}^{18}\left(-\sum_k \frac{1}{2}\alpha_{ijk}y_{rjk} + \frac{1}{34}\sum_{i\neq r}^{18}\sum_k \alpha_{ijk}y_{ijk}\right)^2 \\
&= \frac{17}{18}\sum_{r=1}^{18}\left(-\sum_k \alpha_{ijk}y_{rjk} + \frac{1}{17}\sum_{i\neq r}^{18}\sum_k \alpha_{ijk}y_{ijk}\right)^2 \\
&= \frac{17}{18}\sum_{r=1}^{18}\left(-\sum_k \alpha_{ijk}y_{rjk} + \frac{1}{17}\sum_{i=1}^{18}\sum_k \alpha_{ijk}y_{ijk} - \frac{1}{17}\alpha_{ijk}\sum_k y_{rjk}\right)^2 \\
&= \frac{17}{18}\sum_{r=1}^{18}\left(-\frac{18}{17}\sum_k \alpha_{ijk}y_{rjk} + \frac{18}{17}\frac{1}{18}\sum_{i=1}^{18}\sum_k \alpha_{ijk}y_{ijk}\right)^2 \\
&= \frac{18}{17}\sum_{r=1}^{18}\left(\sum_k \alpha_{ijk}y_{rjk} - \frac{1}{18}\sum_{i=1}^{18}\sum_k \alpha_{ijk}y_{ijk}\right)^2
\end{aligned}
\tag{1}
$$

Note that for α_{ijk}=1/18, this simplifies to the standard formula for the variance estimator for a mean across schools:

$$
\hat{v}(t) = \frac{1}{(18)(17)}\sum_{r=1}^{18}\left(\sum_k y_{rjk} - \frac{1}{18}\sum_{i=1}^{18}\sum_k y_{ijk}\right)^2
$$

Theorem Two. For linear statistics comparing GEAR UP or non-GEAR UP schools, $\hat{v}(t)$ is identical to the standard variance estimator on a simple random sample with replacement of the difference between two variables.

Proof:

Let $t = \sum_{i=1}^{18}\alpha_{i1}\sum_k y_{i1k} - \sum_{i=1}^{18}\alpha_{i2}\sum_k y_{i2k}$ be some linear function of differences between GEAR UP and non-GEAR UP schools. Let $z_i = \alpha_{i1}\sum_k y_{i1k} - \alpha_{i2}\sum_k y_{i2k}$. Using the same arguments as in the proof of Theorem one, we have that

$$
\hat{v}(t) = \frac{18}{17}\sum_{r=1}^{18}\left(z_r - \frac{1}{18}\sum_{i=1}^{18} z_i\right)^2 \tag{2}
$$

Although the original pairing was not directly used in the primary inferential procedures about the outcomes for GEAR UP (see appendix E), the pairing was part of the variance estimation for some estimated GEAR UP associations. More specifically, it was used in estimating variances for the estimated

adjusted differences that were prepared using counterfactional projection (CFP) weights. The pairing was not used, however, in the variances for the estimates produced by hierarchical linear modeling (HLM).

Use of the pairing in the variances for estimates based on CFP weights most likely decreased the estimated variances relative to what would have been obtained had the original pairing been ignored. This was an appropriate reduction because the original pairing was effective in reducing preexisting differences between GEAR UP and non-GEAR UP students.

For estimates based on HLM, the variances estimated by SAS were accepted.

Appendix C

Index Construction

The goal of the U.S. Department of Education's Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) program is to significantly increase the number of low-income students who seek to enter and succeed in postsecondary education. The National Evaluation of GEAR UP seeks to assess the impact that GEAR UP has on postsecondary education preparation for students who receive program services. Figure C-1 is a representation of the conceptual framework for GEAR UP driving the analysis. Within a context of targeted students, families, schools and communities (Column no. 1), GEAR UP projects provide an array of services (Column no. 2). These treatments are expected to be derived from research-based best practices. The treatments are intended to result in interim outcomes (Column no. 3) that are logically associated with the desired longer term outcomes of the program (Column no. 4). The current analysis can only assess the interim outcomes because of the period of performance for this evaluation.

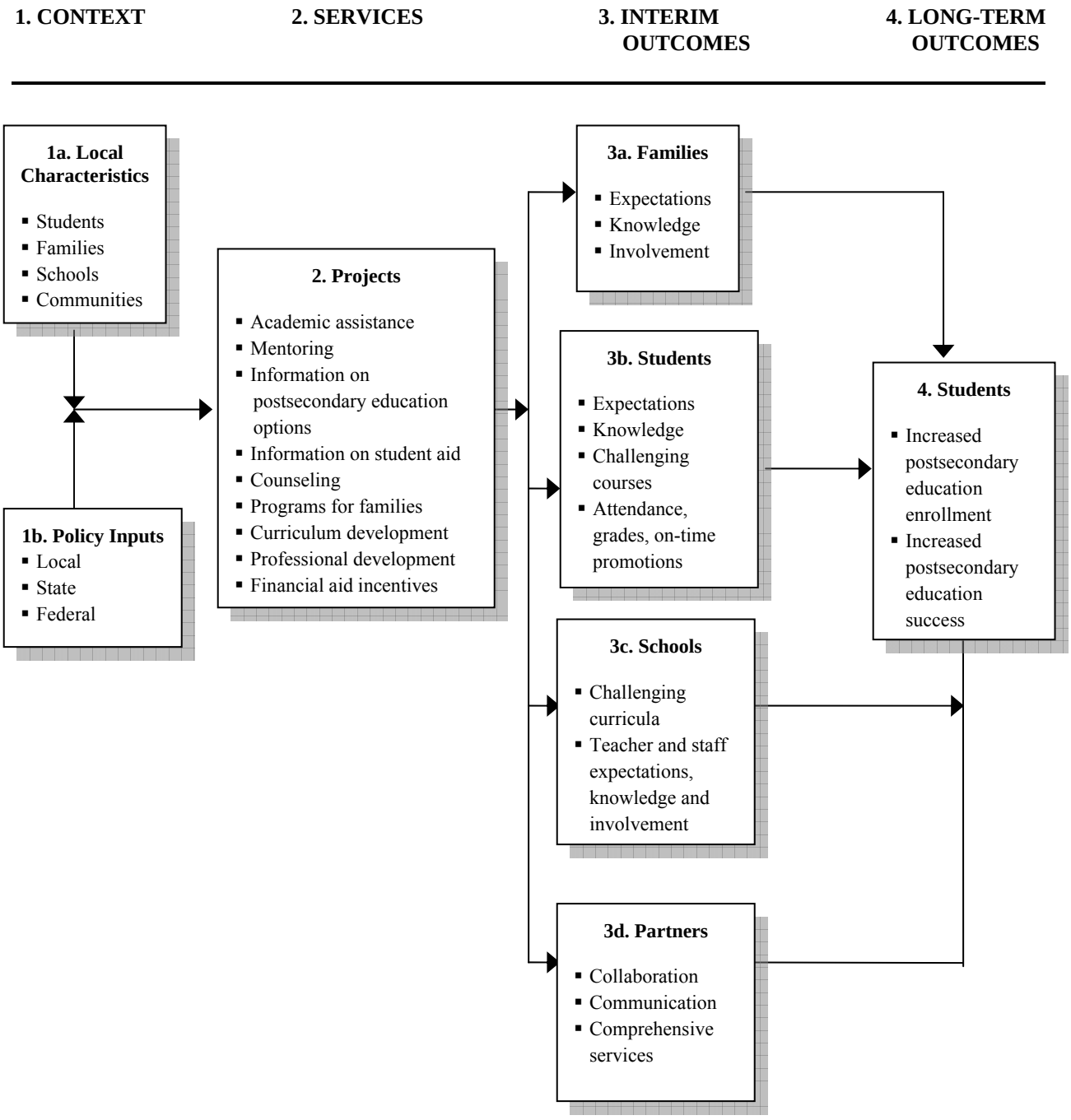
Based on the conceptual framework, we looked for effects among the following groups of potential interim outcome variables:[51]

- Parents' expectations for their children,
- Parents' knowledge about postsecondary education,
- Parents' involvement in their children's education,
- Students' expectations about postsecondary education,
- Students' knowledge about postsecondary education,
- Students' course-taking behavior,
- Students' academic achievement, and
- Students' attitudes and activities.

To sharpen hypotheses before examining the data, outcome indexes were formed. Outcome indexes are typically done to avoid statistical problems associated with running multiple tests on the same concepts. Indexes also increase the statistical power and the ability to discern broad but subtle effects on complex concepts or constructs. A disadvantage to using indexes is that the index values themselves have no intrinsic meaning because they combine multiple questions.

[51] The scope of this analysis does not encompass all of the interim outcome measures displayed in figure C-1. The contents of boxes 3a. and 3b. are evaluated, while the contents of boxes 3c. and 3d. are only described.

Figure C-1. Conceptual framework of the impact of GEAR UP



Source: Westat analysis of *HEA 1988* Amendments, 2007.

We built one or more composite indexes for each group based on items from the student and parent surveys. We also built composite indexes across the groups, including an overarching index called the College Orientation Index, meant to encompass all of the analytic domains. We built these indexes for two primary reasons. The first was to sharpen hypotheses, as in clinical trials research, and thereby reduce multiple-comparison problems. If a large group of items is analyzed without any grouping, it is well known that many false positive results will emerge, which then lead to a more inductive research style in which the analyst tries to distinguish patterns in the results. We wanted a more deductive approach where we would formulate a very sharp hypothesis and give a high profile to test results for it. The second reason for forming the indexes was to increase the power to detect effects along the expected lines. Because the indexes are more difficult to interpret than individual questionnaire items, we also analyzed the items separately, but we used greater caution in interpreting individual items if the index covering the item was not significant.

The process for building the interim outcome indexes involved intuition, analysis of correlation structure, group discussion and outside review by experts on the Technical Working Group. All of this work was done using seventh-grade data before examining any eighth-grade data. No strict psychometric test was used to establish the reliability of each index. Instead, correlation matrices and Cronbach alpha coefficients were calculated for groups of items that were intended to measure the same analytic domain. Items that correlated poorly with others were sometimes dropped from the intended index and then either shifted to another index or dropped as an interim outcome altogether. Sometimes items that were not intended to measure the same analytic domain turned out to be very highly correlated with each other and were subsequently grouped together in the same index. Some groups had Cronbach alpha coefficients below the range (0.7 to 0.8) that is sometimes considered ideal in batteries of psychometric test items. This criterion range, while useful in guiding the design of tests and questionnaires, should not be seen as an absolute requirement for useful grouping of items. Even if the items in a group do measure slightly different latent variables or factors, the grouping still serves the dual purposes of reducing problems with multiple comparisons and increasing statistical power to find effects. On the other hand, it is true that those indexes with low Cronbach alpha coefficients are more difficult to interpret.

For the most part, once items had been grouped together, the index for the group was constructed by standardizing each variable (to have mean zero and standard deviation one) and then simply summing the standardized variables together. However, in some cases it was necessary to first recode the response categories. Because not all questions were originally coded in the same direction, some were recoded to make response values align with desired outcomes. For example, Student Question 3 “How important do you think it is to work hard in school?” has four possible responses, ranging from “very important” (originally coded as “1”) to “not important at all” (originally coded as “4”). When entered into the index, this code order was reversed, so that “very important” would be “4” and “not important at all” would be a “1.” With such reordering of codes, all responses in the College Orientation Index that indicate a higher likelihood of attending college have higher code values than those responses that suggest that future college attendance is less likely.

In addition, answers of “don’t know” were usually treated as missing values and imputed, but they were sometimes treated as informative and placed in the scale based on group intuition. Details are provided below on each variable.

C.1 Creation of College Orientation Index

A summative interim outcome measure of the National Evaluation of GEAR UP is the College Orientation Index. This index comprises data from the evaluation's student and parent surveys. As discussed above, it was created using only seventh-grade, self-reported questionnaire data thought to be predictive of future enrollment in postsecondary education. The index was developed before examining eighth-grade data as a single indicator of the impact of GEAR UP. The index was partially validated using another data set as documented in appendix D.

The College Orientation Index does not include all of the information collected during the evaluation. Only eighth-grade transcript information was processed. As a result, the index excludes information such as course enrollment, GPA and performance on standardized test scores because there was no way to empirically correlate pre-intervention transcript information with other elements of the index and therefore no method to combine transcript information with questionnaire information. Analyses of the transcript data are, therefore, presented separately.

A reason the College Orientation Index should not be viewed as the single criterion for the success of GEAR UP is that the relative weighting of its different components was arbitrary. It could be that some components have higher predictive power than others and would, therefore, require weighting more heavily in a single criterion index than others, but this was impossible to determine with the available data. Thus, while importance was attached to the estimated impact of GEAR UP on the College Orientation Index, it was not treated as the sole indicator of program success or failure.

The College Orientation Index is a collection of the following six subindexes:

- **Academic** measures the student's view of his or her current performance in school,
- **Performance** measures the parent's view of the student's performance,
- **ExpectPSE** measures the student's postsecondary aspirations,
- **Pexpect** measures the parent's postsecondary aspirations for the child,
- **StdParTalk** measures the student's report of parent-child discussions, and
- **ReadingHours** measures how much time the student spent reading for pleasure.

Twenty-two variables make up the six College Orientation subindexes, and the resulting Cronbach alpha is 0.80. The variables that make up these subindexes were standardized so that they had a mean of 0 and a standard deviation of 1. Standardizing the inputs of the College Orientation Index ensured that the resulting index would have an easily understood range.

Below is a description of each of the six subindexes that make up the College Orientation Index and an explanation of how the variables that make up the subindexes were altered. All variables were standardized before building the index. Cases with partial data were excluded from the correlation analysis used to decide how to group the items and how to standardize the variables, but they were subsequently included in the analysis by means of imputing missing items.

Academic Subindex

This subindex consists of questions from the student survey and measures the student's view of his or her current performance in school (see exhibit C-1). The Cronbach alpha is 0.57 and consists of responses to questions on the following topics:

- How hard the student works in school,
- How good a student he or she is,
- How important he or she thinks it is to work hard,
- What kind of grades the student gets,
- How often he or she is absent, and
- How often he or she skips class.

Exhibit C-1. Example of Academic subindex

Student Question 1:
Compared with other students, how hard do you think you work in school?

(Response options)	(Survey code)	(Index code)
▪ Much harder	1	5
▪ Harder	2	4
▪ About the same	3	3
▪ Not as hard	4	2
▪ Much less hard	5	1

The code values for this variable were reversed so more desirable responses have higher values.

Student Question 2:
How good a student do you think you are?

(Response options)	(Survey code)	(Index code)
▪ Excellent	1	4
▪ Good	2	3
▪ Fair	3	2
▪ Poor	4	1

The code values for this variable were reversed so more desirable responses have higher values.

Exhibit C-1. Example of Academic subindex (continued)

Student Question 3:

How important do you think it is to work hard in school?

(Response options)	(Survey code)	(Index code)
▪ Very Important	1	4
▪ Important	2	3
▪ Not too important	3	2
▪ Not important at all	4	1

The code values for this variable were reversed so more desirable responses have higher values.

Student Question 17:

Thinking about the last school year, how would you describe your grades?

(Response options)	(Survey code)	(Index code)
▪ Mostly As	1	7
▪ As and Bs	2	6
▪ Mostly Bs	3	5
▪ Bs and Cs	4	4
▪ Mostly Cs	5	3
▪ Cs and Ds	6	2
▪ Mostly Ds or below	7	1

The code values for this variable were reversed so more desirable responses have higher values.

Student Question 31:

During the past month, how many days were you absent from school?

(Response options)	(Survey code)	(Index code)
▪ None	1	5
▪ 1 or 2	2	4
▪ 3 or 4	3	3
▪ 5 or more	4	2
▪ Don’t remember	5	1

The code values for this variable were reversed so more desirable responses have higher values.

Exhibit C-1. Example of Academic subindex (continued)

Student Question 33:
During the past month, how many classes did you skip or cut?

(Response options)	(Survey code)	(Index code)
▪ None	1	4
▪ 1 or 2	2	3
▪ 3 or 4	3	2
▪ 5 or more	4	1

The code values for this variable were reversed so more desirable responses have higher values.

Performance Subindex

This subindex consists of parent interview questions that measure the parent's view of the student's performance (see Exhibit C-2). The alpha is 0.71 and is highly correlated with the Academic subindex. It is made up of responses to questions on the following:

- Student's understanding of homework,
- Grades, and
- Student's view of the importance of hard work.

Exhibit C-2. Example of Performance subindex

Parent Question 6:
Does (he/she) seem to understand (his/her) homework?

(Response options)	(Survey code)	(Index code)
▪ Always	1	3
▪ Sometimes	2	2
▪ Rarely	3	1
▪ Never	4	0

The code values for this variable were reversed so more desirable responses have higher values.

Exhibit C-2. Example of Performance subindex (continued)

Parent Questions 16 and 17:

Overall, what type of student is [child]? (Question 16)

(Response options)	(Survey code)	(Index code)
▪ Excellent	1	3
▪ Good	2	2
▪ Fair	3	1
▪ Poor	4	0

Since the beginning of the school year, do you think [child] has done excellent, good, fair, or poor in the following areas? (Question 17)

(Response categories)

- English
- Science
- Math
- History or Social Studies
- All other subjects

Overall, what type of student is [child]? (Question 16)

(Response options)	(Survey code)	(Index code)
▪ Excellent	1	3
▪ Good	2	2
▪ Fair	3	1
▪ Poor	4	0

The code value for Parent Question 16 and the five values for Parent Question 17 were first reversed so more desirable responses have higher values. Then, they were averaged, to provide a parent's overall assessment of his or her child's academic performance. The value of this question only entered the index if the student's parent indicated that the child had homework and provided a response to questions about where the child does homework and whether the child understands that homework.

Parent Question 20:

How important does [child] think it is to work hard in school?

(Response options)	(Survey code)	(Index code)
▪ Very important	1	3
▪ Important	2	2
▪ Not too important	3	1
▪ Not important at all	4	0

The code values for this variable were reversed so more desirable responses have higher values.

ExpectPSE Subindex

This subindex is made up of items from the student survey and measures the student's postsecondary aspirations and has a Cronbach alpha of 0.68 (see exhibit C-3). It includes responses to questions on the following:

- Whether or not the student had heard of 4-year colleges,
- Number of people the student reported talking to about his or her postsecondary education,
- Whether the student thought people who attended college had higher salaries than those who did not,
- How likely it is that the student will go to college,
- How important the student thought it is to go to college,
- How far the student thought he or she would go in his or her education, and
- What sort of education the student thought is required for the job he or she wants to have at age 30.

Exhibit C-3. Example of ExpertPSE subindex

Student Question 36b:
Have you heard of the following types of schools: 4-year college or university?

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only "Yes" responses.

Student Question 37:
Who do you talk to about continuing your education after high school (Check all that apply)

(Response options)	(Survey code)	(Index code)
▪ Parent(s) or guardian	1	1
▪ Brother(s) or sister(s)	2	1
▪ Guidance counselor	3	1
▪ Teacher(s)	4	1
▪ Principal or assistant principal	5	1
▪ Religious leader (minister, priest, rabbi, etc.)	6	1 1
▪ Friend(s)	7	1
▪ Someone else (who?)	8	1
▪ No one	9	0

The code values for this variable were changed to count only "Yes" responses. Then the number of "Yes" responses for the nine options was summed.

Exhibit C-3. Example of ExpertPSE subindex (continued)

Student Question 38:

In general, do you think a person who finishes college makes more money in a year than a person who does not finish college?

(Response options)	(Survey code)	(Index code)
▪ Definitely	1	4
▪ Probably	2	3
▪ I doubt it	3	2
▪ Definitely not	4	1
▪ Don't know	8	2.5

The code values for this variable were reordered so more desirable responses have higher values. "Don't know" was placed in the middle of the ordered responses because, in this case, it does not necessarily reflect either a positive or negative outcome.

Student Question 40:

How likely are you to go to college?

(Response options)	(Survey code)	(Index code)
▪ I will definitely go to college	1	36
▪ Probably	2	25
▪ May	3	16
▪ Probably not	4	9
▪ Definitely not	5	4
▪ Not decided	6	6.25

The code values for this variable were reversed so more desirable responses have higher values, and then they were squared. Squaring increases the distance between values for the different possible responses for this question, giving more weight to "positive" responses. "Not decided" was considered to be better than "Definitely not," but not as positive as "Probably not."

Student Question 41:

How important is it for you to go to college?

(Response options)	(Survey code)	(Index code)
▪ Very important	1	16
▪ Somewhat important	2	9
▪ Not very important	3	4
▪ Not important at all	4	1

The code values for this variable were reversed so more desirable responses have higher values. Then, the reversed values were squared, increasing the distance between values for the different possible responses and giving more weight to more desired responses.

Exhibit C-3. Example of ExpertPSE subindex (continued)

Student Question 42:

How far in school do you think you will get after high school?

(Response options)	(Survey code)	(Index code)
▪ A certificate from a vocational, trade, or business school (less than a 2-year program)	1	2
▪ A 2-year degree from a community college or an Associates degree	2	3
▪ A 4-5 year degree from a college or university or a Bachelor's degree	3	4
▪ A graduate or professional degree such as an MA, Ph.D., JD, or MD	4	5
▪ I'm not going to school after high school	5	1
▪ I don't know	8	2.5

The code values for this variable were reordered so more desirable responses have higher values. "Don't know" was placed near the middle of the ordered responses because, in this case, it was determined to reflect neither a positive nor negative outcome.

Student Question 46:

How much education do you think you'll need to get that kind of job when you are 30 years old? [This question references a list of 19 jobs from Student Question 43.]

(Response options)	(Survey code)	(Index code)
▪ Less than high school	1	2
▪ High School	2	3
▪ A certificate from a vocational, trade, or business school (less than a 2-year program)	3	4
▪ A 2-year degree from a community college or an Associates degree	4	5
▪ A 4-5 year degree from a college or university or a Bachelor's degree	5	6
▪ A graduate or professional degree such as an MA, Ph.D., JD, or MD	6	7
▪ Not planning to work	7	1
▪ Don't know	8	4.5

The code values for this variable were reordered so more desirable responses have higher values. "Don't know" was placed near the middle of the ordered responses because it was determined to reflect neither a positive nor negative outcome.

Pexpect Subindex

This subindex consists of questions from the parent interview and measures the parent's postsecondary aspirations for the child (see exhibit C-4). The Cronbach alpha is 0.58 and correlates well with ExpectPSE, with a correlation coefficient of p = 0.36. The subindex is based on responses to questions on the following:

- Discussions about college with the child,
- Student's expected ultimate degree,
- Whether the parent saw the child attending a college away from home, and
- The affordability of college, as reported by the parent.

Exhibit C-4. Example of Pexpect subindex

Parent Question 21:
Since the beginning of the school year, have you talked to him/her about attending college?

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only "Yes" responses.

Parent Question 23:
How far in school do you think [child] will get?

(Response options)	(Survey code)	(Index code)
▪ A certificate from a vocational, trade, or business school	1	1
▪ Associates degree	2	2
▪ Bachelor's degree	3	3
▪ Graduate or professional degree	4	4

The code values for this variable were not changed, but they were counted as a component in this index only if the parent had indicated a belief that the student would continue education after high school.

Exhibit C-4. Example of Pexpect subindex (continued)

Parent Question 24:

Do you think [child] will attend a college or other school after high school that is close to where you live now?

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	2
▪ Don't know	8	0

The code values for this variable were not changed, but they were counted as a component in this index only if the parent had indicated a belief that the student would continue education after high school.

Parent Question 28:

Do you think [child] will be able to afford to attend a 4-year state college or university after high school?

(Response options)	(Survey code)	(Index code)
▪ Definitely	1	2
▪ Probably	2	1
▪ Not sure	3	0
▪ I doubt it	4	-1
▪ Definitely not	5	-2

The code values for this variable were reversed so more desirable responses have higher values. They were also centered around 0, to give more desirable responses positive values and less desirable responses negative values.

StdParTalk Subindex

This subindex is made up of student survey items and measures the student's report of parent-child discussions on various topics (see exhibit C-5). The Cronbach alpha is 0.78. It contains responses to questions on the following:

- School activities and events;
- New knowledge from class;
- Grades;
- Community, national and world events; and
- Things that were bothering the students.

Exhibit C-5. Example of StdParTalk subindex

Student Question 48:

In the past month, how often did you talk about the following with either or both of your parents or guardians?

(Response categories)

- School activities or events of particular interest to you
- Things you've studied in class
- Your grades
- Community, national, and world events
- Things that were bothering you

(Response options)	(Survey code)	(Index code)
▪ Frequently	1	3
▪ A few times	2	2
▪ Never	3	1

The code values for this variable were reversed so more desirable responses have higher values. The code values for each of the five response categories were summed to obtain a single value for these questions. The value of this question entered the index only if the student reported having either a mother, a father or a guardian at home.

Reading Hours Subindex

This subindex is made up of a question from the student survey and measures how much time the student spent reading for pleasure. Because it is only made up of one question, a Cronbach alpha is not applicable.

Exhibit C-6. Reading Hours subindex

Student Question 8:

How many hours each week do you spend reading that is not part of your homework?

(Response options)	(Survey code)	(Index code)
▪ None	1	1
▪ 1 hour or less a week	2	2
▪ Between 2 and 3 hours a week	3	3
▪ Between 4 and 5 hours a week	4	4
▪ Between 6 and 7 hours a week	5	5
▪ 8 or more hours a week	6	6

The code values for this variable were not changed.

C.2 Creation of Other Indexes

Below is a description of several other interim outcome measures not included in the College Orientation Index and the interview items that make up each index.

ParInvolve Index

This index was designed to measure the level of parent involvement in their child's education (see exhibit C-7). This index has an alpha of 0.59 and includes items on the frequency and content of

- Parent-teacher conferences,
- Parental attendance at school events,[52] and
- Steps taken to find out about college requirements.

Exhibit C-7. Example of ParInvolve index

Parent Question 25:

Since the beginning of the school year, have you received any written information about the types of classes (he/she) should be taking now to prepare (himself/herself) for college?

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only "Yes" responses.

Parent Question 26:

Since the beginning of the school year, have you attended any meetings that discussed the types of classes (he/she) should be taking now to prepare (himself/herself) for college?

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only "Yes" responses.

[52] Some of these school events are assumed to be GEAR UP events, but survey questions did not ask separately about GEAR UP and non-GEAR UP events. (Parents of GEAR UP and non-GEAR UP students were asked the same questions.)

Exhibit C-7. Example of ParInvolve index (continued)

Parent Question 27:

Given that [CHILD] is in the 7th grade, do you feel you have…

(Response options)	(Survey code)	(Index code)
▪ **Enough** information about college entrance requirements	1	1
▪ **Some** information but not enough about college entrance requirements	2	0
▪ **No** information about college entrance requirements	3	-1

The code values for this variable were reversed and centered around 0. These changes allowed more desirable responses to have positive values and less desirable responses to have negative values.

Parent Question 29:

Have you attended any workshops for parents that provided you with information about financial assistance for your child to attend college?

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only "Yes" responses.

Parent Question 9:

Since the beginning of the school year, how many meetings have you had with [CHILD'S] teachers? Would you say…

(Response options)	(Survey code)	(Index code)
▪ One	1	1
▪ A few	2	2
▪ Several, or	3	3
▪ I regularly meet with my child's teacher(s)	4	4

The code values for this variable were not changed.

Exhibit C-7. Example of ParInvolve index (continued)

Parent Question 14:

Since the beginning of the school year, have you participated in any of the following school activities?

(Response categories)

- Back-to-school-night
- PTA meetings
- A school event, such as a play or sports event
- Attended a field trip, such as a museum or zoo

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0
▪ Don't Know	8	0

The code values for this variable were changed to count only "Yes" responses for each of the four response categories.

Sdiligent Index

This index measures how diligent the parent feels the student is about his or her schoolwork. It was created from parental reports on the frequency and duration of the child's homework and has an alpha of 0.64 (see exhibit C-8).

Exhibit C-8. Example of Sdiligent index

Parent Question 4:

How often does (he/she) do homework at a place other than home…

(Response options)	(Survey code)	(Index code)
▪ Less than once a week	1	0.5
▪ 1 to 2 times a week	2	1.5
▪ 3 to 4 times a week	3	3.5
▪ 5 or more times a week, or	4	6
▪ Only does it at home	5	0

The code values for this variable were set to a wider scale. The value of this question entered the index only if the parent reported that the student received homework.

Exhibit C-8. Example of Sdiligent index (continued)

Parent Question 2a:

How often does (he/she) do homework at home? Is it…

(Response options)	(Survey code)	(Index code)
▪ Less than once a week	1	0.5
▪ 1 to 2 times a week	2	1.5
▪ 3 to 4 times a week	3	3.5
▪ 5 or more times a week	4	6

The code values for this variable were set to a wider scale. The value of this question entered the index only if the parent reported that the student received homework but completed it somewhere other than at home or in an after-school program.

Parent Question 5:

Including at home, in school, during after-school programs, or any other place that [CHILD] does (his/her) homework, how much time does [CHILD] spend doing homework per week on average? Would you say…

(Response options)	(Survey code)	(Index code)
▪ None	1	1
▪ Less than 2 hours	2	2
▪ 2-3 hours	3	3
▪ 4-6 hours	4	4
▪ over 6 hours	5	5

The code values for this variable were not changed.

NegJunkHours Index

This index measures a student's use of after-school time. It was created from items that measured how much time students spent watching television as well as playing video games (see exhibit C-9). The index was reverse coded to allow high values to indicate that the student spent little time in those activities. The index alpha is 0.53.

Exhibit C-9. Example of NegJunkHours index

Student Question 10:
Not including weekends, how many hours a day do you USUALLY watch TV?

(Response options)	(Survey code)	(Index code)
▪ Do not watch TV	1	6
▪ 1 hour or less a day	2	5
▪ Between 2 and 3 hours a day	3	4
▪ Between 3 and 4 hours a day	4	3
▪ Between 4 and 5 hours a day	5	2
▪ 5 or more hours a day	6	1

The code values for this variable were reversed so more desirable responses have higher values. Missing values were counted the same as a response of "Do not watch TV."

Student Question 11:
Not including weekends, how many hours a day do you USUALLY play video games?

(Response options)	(Survey code)	(Index code)
▪ Do not play video games	1	6
▪ 1 hour or less a day	2	5
▪ Between 2 and 3 hours a day	3	4
▪ Between 3 and 4 hours a day	4	3
▪ Between 4 and 5 hours a day	5	2
▪ 5 or more hours a day	6	1

The code values for this variable were reversed so more desirable responses have higher values. Missing values were counted the same as a response of "Do not play video games."

HomeworkHours Index

This index measures how long students spent on homework and was based on the student's report of time spent doing homework, by subject (see exhibit C-10). The index alpha is 0.80, which is fairly high. The high alpha is most likely because of the format of the questions that make up the index. The questions are in a series and all have a similar format, which often leads to more consistent responses and therefore a higher alpha. The analysts tried to combine this index with Sdiligent, but got an alpha of only 0.44. Interestingly, the correlation between parental and student reports of homework hours is only 0.08.

Exhibit C-10. Example of HomeworkHours index

Student Question 4:

About how much time do you spend on homework each WEEK? Include the time you spend both in and out of school.

(Response categories)

- Math
- English/Language Arts
- Science
- All other subjects combined

(Response options)	(Survey code)	(Index code)
▪ None	1	0
▪ Less than 1 hour	2	0.5
▪ Between 1 and 3 hours	3	2
▪ Between 4 and 6 hours	4	5
▪ 7 hours or more	5	10

The code values for this variable were altered so that increasingly desirable responses have much more weight than less desirable responses. The code values for each of the four response categories were summed to obtain the final value for this question.

ECBusy Index

This index measures a student's extracurricular activities (see exhibit C-11). It has an alpha of 0.70 and uses items that indicate "active" extracurricular activities, including

- Student leadership;
- Number of school-based extracurricular activities and hours spent on them;
- Frequency of participation in other activities other than television, video games, reading or homework;
- Parent attendance at school events; and
- Out-of-school activities.

Exhibit C-11. Example of ECBusy index

Student Question 13:

Were you an officer or leader in any of the activities listed[below]?

(Response categories)

- A team sport such as soccer, basketball, baseball, football, field hockey, etc.
- An individual sport such as cross-country, gymnastics, golf, swimming, tennis, track, wrestling, etc.
- Band, orchestra, chorus, choir, or other music group
- Drama club, school play or musical
- Student government
- Cheerleading, pom squad, drill team, dance team
- School yearbook, newspaper, or literary magazine
- Academic clubs, such as Art, Computer, Math, Engineering, Science, Debate/Forensics, Foreign languages, Philosophy
- Hobby clubs, such as photography and chess
- Future Teachers of America, Future Homemakers of American, or other vocational education or professional clubs

(Response options)	(Survey code)	(Index code)
▪ Yes	1	3
▪ No	2	2
▪ Did not participate in any clubs	3	1

Code values for this variable were reversed so more desirable responses have higher values.

Exhibit C-11. Example of ECBusy index (continued)

Student Question 14:

Most weeks, how much time do you spend on all activities (such as, sports, clubs, or other activities) at your school?

(Response options)	(Survey code)	(Index code)
▪ None	1	1
▪ Less than 1 hour a week	2	2
▪ 1 to 4 hours a week	3	3
▪ 5 to 9 hours a week	4	4
▪ 10 hours or more a week	5	5

The code values for this variable were not changed.

Student Question 12

Have you been in any of the following school activities this school year?

(Response categories)

- A team sport such as soccer, basketball, baseball, football, field hockey, etc.
- An individual sport such as cross-country, gymnastics, golf, swimming, tennis, track, wrestling, etc.
- Band, orchestra, chorus, choir, or other music group
- Drama club, school play or musical
- Student government
- Cheerleading, pom squad, drill team, dance team
- School yearbook, newspaper, or literary magazine
- Academic clubs, such as Art, Computer, Math, Engineering, Science, Debate/Forensics, Foreign languages, Philosophy
- Hobby clubs, such as photography and chess
- Future Teachers of America, Future Homemakers of American, or other vocational education or professional clubs

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0
▪ School does not have	3	0

The code values for this variable were changed to count only the number of "Yes" responses among the 10 response categories.

Exhibit C-11. Example of ECBusy index (continued)

Student Question 15:

How often do you spend time on the following activities outside of school?

(Response categories)

- Using a personal computer, not including school-related work
- Participating in religious activities
- Doing volunteer or community service beyond any requirements for graduation
- Doing things with your friends
- Doing things with your mother, father, or guardian(s)
- Doing things with other adults

(Response options)	(Survey code)	(Index code)
▪ Never or almost never	1	1
▪ Once or twice a month	2	2
▪ Once or twice a week	3	3
▪ Every day or almost every day	4	4

The code values for this variable were not changed. The values for each of the six response categories were summed to obtain the final value for this question.

Student Questions 49 and 50:

Does your mother or female guardian attend school activities or events?
(Question 49)

(Response options)	(Survey code)	(Index code)
▪ Yes, often	1	3
▪ Yes, sometimes	2	2
▪ No, never	3	1
▪ I don't have a mother or female guardian	4	1

Does your father or male guardian attend school activities or events?
(Question 50)

(Response options)	(Survey code)	(Index code)
▪ Yes, often	1	3
▪ Yes, sometimes	2	2
▪ No, never	3	1
▪ I don't have a father or male guardian	4	1

The code values for this variable were reversed so more desirable responses have higher values. In addition, for the index to register the index code noted above, only one of the survey questions needed to meet the criteria. For example, if the original item value for *either* Question 49 or Question 50 was 1, the index code was set to 3.

Exhibit C-11. Example of ECBusy index (continued)

Student Question 16:
Do you spend time doing any of the following activities?

(Response categories)

- Working on hobbies, arts, or crafts on your own
- Taking classes (music, art, language, dance) that are not a t your school
- Participating in sports or taking sports lessons that are not at your school
- Attending plays or other performances at a theater

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only the number of "Yes" responses among the four response categories. Missing responses were counted the same as a response of "Yes."

KnowPSE Index

This index measures the student's knowledge of postsecondary education (see exhibit C-12). It has an alpha of 0.59 and includes responses to questions on the following:

- To whom the student has spoken about the classes needed to graduate from high school and get into college,
- Whether the student has talked with any adults at home about classes necessary to get into college,
- Student's familiarity with different types of postsecondary education,
- With whom the student speaks about continuing education after high school, and
- Whether the student feels people with college degrees earn a higher salary than those without college degrees.

Exhibit C-12. Example of KnowPSE index

Student Question 34:

Have you talked with your school counselor or someone else at your school about the classes you need [below]

(Response categories)

- to graduate high school
- to get into college

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only "Yes" responses.

Student Question 35:

Since the beginning of the school year, have you talked with any adults in your house about the classes you need to take to get into college?

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only "Yes" responses.

Student Question 36:

Have you heard of the following types of schools [below]:

(Response categories)

- 2-year or community college
- 4-year college or university
- Vocational, trade, or business school

(Response options)	(Survey code)	(Index code)
▪ Yes	1	1
▪ No	2	0

The code values for this variable were changed to count only "Yes" responses.

Exhibit C-12. Example of KnowPSE index (continued)

Student Question 37:

Who do you talk to about continuing your education after high school (Check all that apply)

(Response options)	(Survey code)	(Index code)
▪ Parent(s) or guardian	1	1
▪ Brother(s) or sister(s)	2	1
▪ Guidance counselor	3	1
▪ Teacher(s)	4	1
▪ Principal or assistant principal	5	1
▪ Religious leader (minister, priest, rabbi, etc.)	6	1
		1
▪ Friend(s)	7	1
▪ Someone else (who?)	8	1
▪ No one	9	0

The code values for this variable were changed to count only "Yes" responses. Then the number of "Yes" responses for the nine options was summed.

Student Question 38:

In general, do you think a person who finishes college makes more money in a year than a person who does not finish college?

(Response options)	(Survey code)	(Index code)
▪ Definitely	1	4
▪ Probably	2	3
▪ I doubt it	3	2
▪ Definitely not	4	1
▪ Don't know	8	2.5

The code values for this variable were reordered so more desirable responses have higher values. "Don't know" was placed in the middle of the ordered responses because, in this case, it does not necessarily reflect either a positive or negative outcome.

Appendix D

Index Validation Using the National Longitudinal Study (NELS:88)

Because it will be several years before the students participating in this evaluation are old enough to enroll in college, interim measures are the only indicators of the Gaining Early Awareness and Readiness for Undergraduate Programs' (GEAR UP's) effect on students' college-going rates that are available. The analysis in this appendix is a test of the validity of the predictive power of the College Orientation Index (described in appendix C) in estimating a student's likelihood of going to college.

The National Education Longitudinal Study of 1988 (NELS:88) database was used for this test of the predictive capabilities of the College Orientation Index. NELS:88 is a longitudinal survey that started in 1988 with a nationally representative sample of about 12,000 eighth-graders. The NELS:88 study conducted follow-ups with these students and their families and schools in 1990, 1992, 1994 and 2000. NELS:88 asked questions about school, parents' roles in education and students' education and occupational aspirations. Most important, while NELS:88 mirrors some of the aspects of the GEAR UP student and parent surveys, it has the advantage of having followed students beyond middle school and high school and asked questions about students' actual college attendance. This makes it possible to compare students' answers with specific NELS:88 questions in eighth grade to the later outcome of whether the student actually attended college.

D.1 Creating a NELS:88 College Orientation Scale

To validate the GEAR UP College Orientation Index, a College Orientation Index outcome was created based on similar questions from NELS:88. While the GEAR UP College Orientation Index consists of 22 questions from the GEAR UP student and parent surveys, the NELS:88 College Orientation Index outcome scale comprises 12 questions from the NELS:88 student and parent surveys that closely mirror questions on the GEAR UP College Orientation Index. There were no matches in NELS:88 for 10 questions on the GEAR UP College Orientation Index, so these components were not included in the NELS:88 College Orientation Index. (Exhibit D-1 provides a complete list of the questions and the response categories that make up both College Orientation Indexes.)

The coding for many of the questions in the GEAR UP College Orientation Index was changed so that responses that suggest a greater likelihood of attending college had higher values than those that were consistent with a lesser likelihood of attending college. In most cases, this meant simply reversing the coding but not changing the magnitude of the responses.

In developing the NELS:88 College Orientation Index, similar changes were made to the coding for several of the NELS:88 questions. These changes preserved the magnitude and direction captured in the GEAR UP College Orientation Index scale.

Exhibit D-1. Comparison between GEAR UP variables and NELS:88 variables in their respective College Orientation Indexes

College Orientation Index variables	GEAR UP evaluation questions with possible response categories and values where pertinent	NELS:88:88 equivalent question, with possible response categories and values where pertinent
ImpWork	Student Question 3: *How important do you think it is to work hard in school?* ■ Very important ■ Important ■ Not too important ■ Not important at all	Student Question 59h: *How much do you agree with each of the following statements about your school and teachers?* ■ When I work hard on my schoolwork, my teachers praise my efforts. - Strongly agree - Agree - Disagree - Strongly disagree
ReadingHours	Student Question 8: *How many hours each week do you spend reading that is not part of your homework?* ■ None ■ 1 hour or less a week ■ Between 2 and 3 hours a week ■ Between 4 and 5 hours a week ■ Between 6 and 7 hours a week ■ 8 or more hours a week	Student Question 80: *How much additional reading do you do on your own outside school—not in connection with schoolwork? (Do not count any reading done for any school purpose.)* ■ None ■ 1 hour or less a week ■ 2 hours ■ 3 hours ■ 4-5 hours ■ 6 hours or more a week
Grades	Student Question 17: *Thinking about the last school year, how would you describe your grades?* ■ Mostly As ■ As and Bs ■ Mostly Bs ■ Bs and Cs ■ Mostly Cs ■ Cs and Ds ■ Mostly Ds or below	Student Question 81: *For each of the school subjects listed below (English, Math, Science, and Social Studies), mark the statement that best describes your grades from sixth grade up till now.* ■ Mostly As ■ Mostly Bs ■ Mostly Cs ■ Mostly Ds ■ Mostly below Ds ■ Doesn't apply to me – my classes are not graded

Exhibit D-1. Comparison between GEAR UP variables and NELS:88 variables in their respective College Orientation Indexes (continued)

College Orientation Index variables	GEAR UP evaluation questions with possible response categories and values where pertinent	NELS:88:88 equivalent question, with possible response categories and values where pertinent
AbsentDays	Student Question 31: *During the past month, how many days were you absent from school?* ■ None ■ 1 or 2 ■ 3 or 4 ■ 5 or more ■ Don't remember	Student Question 75: *How many days of school did you miss over the past four weeks?* ■ None ■ 1 or 2 days ■ 3 or 4 days ■ 5 to 10 days ■ More than 10 days
SkipClasses	Student Question 33: *During the past month, how many classes did you skip or cut?* ■ None ■ 1 or 2 ■ 3 or 4 ■ 5 or more	Student Question 76: *How often do you cut or skip classes?* ■ Never or almost never ■ Sometimes, but less than once a week ■ Not every day, but at least once a week ■ Daily
LikelyGo College	Student Question 40: *How likely are you to go to college?* ■ I will definitely go to college ■ I will probably go to college ■ I may go to college ■ I will probably not go to college ■ I will definitely not go to college ■ I have not decided yet	Student Question 47: *How sure are you that you'll go on for further education after leaving high school?* ■ Very sure I'll go ■ I'll probably go ■ I probably won't go ■ Very sure I won't go
HowFarSchool	Student Question 42: *How far in school do you think you will get after high school?* ■ A certificate from a vocational, trade, or business school (less than 2-year program) ■ A 2-year degree from a community college or an associate's (A.A.) degree ■ A 4-5 year degree from a college or university or a bachelor's (B.A.) degree ■ A graduate or professional degree such as a master's (M.A.), doctorate (Ph.D.), law (J.D.) or medical (M.D.) degree ■ I'm not going to school after high school ■ I don't know	Student Question 45: *As things stand now, how far in school do you think you will get?* ■ Won't finish high school ■ Will graduate from high school, but won't go any further ■ Will go to vocational, trade, or business school after high school ■ Will attend college ■ Will graduate from college ■ Will attend a higher level of school after graduating from college

Exhibit D-1. Comparison between GEAR UP variables and NELS:88 variables in their respective College Orientation Indexes (continued)

College Orientation Index variables	GEAR UP evaluation questions with possible response categories and values where pertinent	NELS:88:88 equivalent question, with possible response categories and values where pertinent
StdParTalk	Student Question 48: *In the past month, how often did you talk about the following with either or both of your parents or guardians?* ■ School activities or events of particular interest to you ■ Things you've studied in class ■ Your grades ■ Community, national and world events ■ Things that were bothering you - Frequently - A few times - Never	Student Question 36: *Since the beginning of the school year, how often have you discussed the following with either or both of your parents or guardians?* ■ Selecting courses or programs at school ■ School activities or events of particular interest to you ■ Things you've studied in class - Not at all - Once or twice - Three or more times
HmwkUnder	Parent Question 6: *Does (he/she) seem to understand (his/her) homework?* ■ Always ■ Sometimes ■ Rarely ■ Never ■ Don't know	Parent Question 74b: *How much do you agree or disagree with each of the following statements concerning your eighth grader's school?* ■ The homework assigned is worthwhile. ■ Strongly agree ■ Agree ■ Disagree ■ Strongly disagree
TalkCollege	Parent Question 21: *Since the beginning of the school year, have you talked to him/her about attending college?* ■ Yes ■ No	Parent Question 68: *How often do you or your spouse/partner talk with your eighth grader about his or her education plans for after high school?* ■ Not at all ■ Rarely ■ Occasionally ■ Regularly

Exhibit D-1. Comparison between GEAR UP variables and NELS:88 variables in their respective College Orientation Indexes (continued)

College Orientation Index variables	GEAR UP evaluation questions with possible response categories and values where pertinent	NELS:88:88 equivalent question, with possible response categories and values where pertinent
UltDegree	Parent Question 23: *How far in school do you think [child] will get?* ■ A certificate from a vocational, trade, or business school ■ An associate's (A.A.) degree ■ A bachelor's (B.A.) degree ■ A graduate or professional degree	Parent Question 76: *How far in school do you expect your eighth grader to go?* ■ Less than a high school diploma ■ GED ■ High school graduate ■ Less than 1 year in a vocational, trade, or business school ■ One or 2 years in a vocational, trade, or business school ■ Two or more years in a vocational, trade, or business schools ■ Less than 2 years of college ■ Two or more years of college ■ Finish a 2-year college program ■ Finish a 4- or 5-year program ■ Masters degree or equivalent ■ Ph.D., M.D., or other advanced degree
College Affordable	Parent Question 28: *Do you think [child] will be able to afford to attend a 4-year state college or university after high school?* ■ Definitely ■ Probably ■ Not sure ■ I doubt it ■ Definitely not	Parent Question 85: *The following statements are about financial aid for education beyond high school. Indicate whether each statement is true or false for your family.* ■ My eighth grader will be able to earn most of the money he or she will need for schooling beyond high school ■ We can pay for our eighth grader's further education without getting any outside assistance ■ The family is not willing to go into debt for schooling ■ Too much paperwork is required in order to apply for financial aid ■ I have not been able to get much information on how and where to apply for financial aid ■ I do not see any way of getting enough money for my eighth grader to go to college ■ Other relatives will help pay my eighth grader's college expenses ■ True ■ False ■ We haven't thought about this yet

Exhibit D-1. Comparison between GEAR UP variables and NELS:88 variables in their respective College Orientation Indexes (continued)

College Orientation Index variables	GEAR UP evaluation questions with possible response categories and values where pertinent	NELS:88:88 equivalent question, with possible response categories and values where pertinent
HowHard	Student Question 1: *Compared with other students, how hard do you think you work in school?* ■ Much harder ■ Harder ■ About the same ■ Not as hard ■ Much less hard	No match
HowGood	Student Question 2: *How good a student do you think you are?* ■ Excellent ■ Good ■ Fair ■ Poor	No match
Heard4Year	Student Question 36b: *Have you heard of the following types of schools:* ■ Four-year college or university? ■ Yes ■ No	No match
NumPeople TalkedPSE	Student Question 37: *Who do you talk to about continuing your education after high school?* ■ Parent(s) or guardian ■ Brother(s) or sister(s) ■ Guidance counselor ■ Teacher(s) ■ Principal or assistant principal ■ Religious leader (minister, priest, rabbi, etc.) ■ Friend(s) ■ Someone else (who?) ■ No one	No match
CollegeMore Money	Student Question 38: *In general, do you think a person who finishes college makes more money in a year than a person who does not finish college?* ■ Definitely ■ Probably ■ I doubt it ■ Definitely not ■ Don't know	No match

Exhibit D-1. Comparison between GEAR UP variables and NELS:88 variables in their respective College Orientation Indexes (continued)

College Orientation Index variables	GEAR UP evaluation questions with possible response categories and values where pertinent	NELS:88:88 equivalent question, with possible response categories and values where pertinent
ImpGoCollege	Student Question 41: *How important is it for you to go to college?* ■ Very important ■ Somewhat important ■ Not very important ■ Not important at all	No match
EdFor30	Student Question 46: *How much education do you think you'll need to get that kind of job when you are 30 years old?* ■ Less than high school ■ A certificate from a vocational, trade, or business school (less than 2-year program) ■ A 2-year degree from a community college or an associate's (A.A.) degree ■ A 4- to 5-year degree from a college or university or a bachelor's (B.A.) degree ■ A graduate or professional degree such as a master's (M.A.), doctorate (Ph.D.), law (J.D.) or medical (M.D.) degree ■ Not planning to work ■ Don't know	No match

Exhibit D-1. Comparison between GEAR UP variables and NELS:88 variables in their respective College Orientation Indexes (continued)

College Orientation Index variables	GEAR UP evaluation questions with possible response categories and values where pertinent	NELS:88:88 equivalent question, with possible response categories and values where pertinent
ParGrades	Parent Question 16: *Overall, what type of student is [child]?* ■ Excellent ■ Good ■ Fair ■ Poor Parent Question 17: *Since the beginning of the school year, do you think [child] has done excellent, good, fair, or poor in the following areas?* ■ English ■ Science ■ Math ■ History or Social Studies ■ All other subjects ■ Excellent ■ Good ■ Fair ■ Poor	No matches
SimpHard Work	Parent Question 20: *How important does [child] think it is to work hard in school?* ■ Very important ■ Important ■ Not too important ■ Not important at all	No match
CloseCollege	Parent Question 24: *Do you think [child] will attend a college or other school after high school that is close to where you live now?* ■ Yes ■ No ■ Don't know	No match

As with the GEAR UP College Orientation Index, after the variables that make up the NELS:88 College Orientation Index were recoded, they were standardized so that each of their means was 0 and each of their standard deviations was 1. After the individual variables were standardized, they were summed to create the NELS:88 College Orientation Index.

D.2 Testing the NELS:88 College Orientation Scale

After identifying questions from the NELS:88 study that closely matched those GEAR UP questions that make up the GEAR UP College Orientation Index, students' and parents' responses on the NELS:88 questionnaires were used to create a NELS:88 College Orientation Index score for the appropriate NELS:88 respondent. (To test the outcome measure, the analyses was limited to those students and parents who responded to all of the NELS:88 follow-ups.) The scores resulting from the NELS:88 College Orientation Index ranged between -29.42 and 13.71. with a median of 0.65 and a mean of 0.

The next step in the analysis was to test the predictive power of the NELS:88 College Orientation Index by noting whether students actually went to college. While running the multiple regression models, other factors were also considered that could have affected a student's likelihood of going to college. The factors, besides the NELS:88 College Orientation measure, that were most likely to have influenced a student's likelihood of attending college were parental education, race and family income. A multiple regression analysis showed the effect of the three independent variables (NELS:88 College Orientation Index, parental education and race) on the dependent variable (whether the student actually attended college).

Family income was used to limit the analysis to those students most similar to the GEAR UP population. To this end, the regression equation described effects only for respondents with family incomes of less than $20,000. This family income level roughly replicated the income levels in the GEAR UP schools, which had National School Lunch Program (NSLP) rates ranging from 50 to 95 percent of the student population. Students are eligible for the NSLP if their family's income is no more than 150 percent of the poverty line. In 1988, the year of the NELS:88 Base Year Survey, the poverty level for a family of four was $11,997 and the median income for a family of four was $39,051. In 1988, 150 percent of the poverty level for a family of four was $17,995.50. The closest income category cutoff on the NELS:88 Base Year Survey was $20,000.

Independent Variables

Independent variables in the regression equation came from the NELS:88 Base Year Survey conducted in 1988 when the students were in eighth grade. In addition to the variables that make up the NELS:88 College Orientation Index, a composite variable was included on parents' education (BYPARED), self-reported race from the student survey (BYS31A) and the parent's report of family income (BYP80).

Parental education was based on responses to the NELS:88 variable BYPARED, which is a composite of several parent questions about parental education. BYPARED characterizes the level of education attained by either of the student's parents. It was constructed using parent questionnaire data (BYP30 and BYP31). Student data (BYS34A and BYS34B) were used whenever parent data were either missing or not available. Before standardizing with a mean of 0 and standard deviation of 1, the values for this categorical variable ranged from 1 to 6, and had the following categories:

BYPARED:	Did not finish high school	1
	High school graduate or GED	2
	Less than a 4-year degree	3
	College graduate	4
	Masters or equivalent	5
	Ph.D., M.D., or other	6

Race was based on the NELS:88 variable BYS31A. The original BYS31A variable had the following five categories:

BYS31A:	Asian/Pacific Islander	1
	Hispanic	2
	Black non-Hispanic	3
	White non-Hispanic	4
	American Indian	5

To fit into the logistic regression equation, each response to the race question was turned into a binomial variable. The value for the binomial variable representing the student's race was 1, while the values for all the other race variables was 0. If the student self-reported as white, non-Hispanic, all four other binomial race variables were 0.

In addition, the respondents' family income was established from the variable BY80. The income variable BY80 had 15 income categories. Only those records that indicated the respondents' family earned less than $20,000 were used.

As described earlier, the inputs into the NELS:88 College Orientation Index and the parental education variables were standardized so that the mean is 0 and the standard deviation is 1. This modification simplifies the interpretation of the regression coefficients.

Dependent Variable

The dependent variable (whether the student attended college) came from the students' responses to the NELS:88 third followup variable F3PSEATN, which asked students about their postsecondary education attendance. This variable was turned into a binomial 1, in which an answer of 0 meant that the student was not attending or had not attended college by the time of the third followup (F3PSEATN = 0, 1, 4, or 5), and an answer of "one" meant that the student had attended or was attending college (F3PSEATN = 2, 3, 6, or 7). The original coding of F3PSEATN is as follows:

F3PSEATN:	No PSE	0
	No degree, working toward certificate or license	1
	No degree, working toward associate's	2
	No degree, working toward bachelor's	3
	Some PSE, other	4
	Certificate or license	5
	Associate's degree	6
	Bachelor's degree	7

D.3 Analyzing the Findings

Two measures show how well the NELS:88 College Orientation Index predicted actual college-going rates. First, the multiple regression equation described earlier shows, for families with less than $20,000 in total family income, how each factor (NELS:88 College Orientation Index, parental education, and race) affected the probability of a respondent attending college. The second measure shows the relationship between the NELS:88 College Orientation Index and the other two independent variables (parental education and race).

For families with income less than $20,000, the multiple regression equation takes the form:

$$y = 0.1595(NCB) + 0.3248(PE) + 1.3475(API) + 0.3619$$

where:

- **y** represents the dependent variable F3PSEATN, so the higher the value for y, the more likely the student is to have attended college.
- **NCB** is the continuous NELS:88 College Orientation score. With standardized input variables, the scores ranged from -29.42 to 13.71, with a mean of 0.
- **PE** is the categorical parental education variable. The scores originally ranged from one to six but were standardized; the mean was set to 0 with a standard deviation of 1.
- **API** is the binomial indicator variable for race where 1 = Asian/Pacific Islander and 0 = not Asian/Pacific Islander.
- **H** is the binomial indicator variable for race where 1 = Hispanic and 1= not Hispanic. (The fact that a student was Hispanic did not produce results that were statistically different from those from white, non-Hispanic students. Therefore, the coefficient was "0" and the variable was not included in this equation.)
- **B** is the binomial indicator variable for race where 1 = black, non-Hispanic and 0 = not black, non-Hispanic. (The fact that a student was black, non-Hispanic did not produce results that were statistically different from those from white, non-Hispanic students. Therefore, the coefficient was "0," and the variable was not included in this equation.)
- **AI** is the binomial indicator variable for race where 1 = American Indian and 0 = not American Indian. (The fact that a student was American Indian did not produce results that were statistically different from those from white, non-Hispanic students. Therefore, the coefficient was 0 and the variable was not included in this equation.)

There is no **W** (Race = white, non-Hispanic) variable because this is the reference group, and these respondents are captured when API = 0, H = 0, B = 0 and AI = 0.

For the family income level measured, the NELS:88 College Orientation Index has a significant and positive relationship with the student's college attendance. In addition, the odds ratio estimates indicated that the NELS:88 College Orientation Index was a good predictor of whether a NELS:88 respondent would attend college. For families with less than $20,000 in family income, a one-point increase in the NELS:88 College Orientation Index make a respondent 2.375 times more likely to attend college.

D.4 Conclusion

These tests support the theory that, at least for low-income students, the NELS:88 College Orientation Index was a good predictor of whether a student will attend college. The NELS:88 College Orientation Index correctly predicted the college-going rate of these children 75 percent of the time.

Because the NELS:88 College Orientation Index is based on a subset of concepts closely related to the GEAR UP College Orientation Index, these results can be extrapolated to the GEAR UP College Orientation Index. The general predictive power of both College Orientation Indexes will be similar. In fact, because the overall coherence of the GEAR UP College Orientation Index is so high (as explained in appendix C), the GEAR UP College Orientation Index, which contains 10 more items than the NELS:88 College Orientation Index, should have greater predictive capabilities than those of the NELS:88 College Orientation Index. Therefore, the evaluation team is confident that the GEAR UP College Orientation Index is a valid predictor of future college-going behavior with the caveat that it should not be viewed as the single criterion because the relative weighting of its different components was arbitrary. Some components of the index may have higher predictive powers than others and would, therefore, require weighting more heavily to optimize the predictive power of the index. It was not possible to determine optimal weighting with the available data.

Appendix E

Removal of Baseline Differences

Several different but related analytic strategies were used for this report. The methods differ in terms of controlled covariates, correction of variance estimates for the clustering present in a school-based study and robustness of inferences to untestable assumptions. They are laid out in tables E-1 and E-2. Only the first three methods are discussed in this appendix. The last two are discussed in appendixes I and H, respectively. Table E-1 summarizes the features of each method, while table E-2 shows the outcomes for which each analysis method was used.

A central concept for this analysis concerns whether any particular seventh-grade variable is "contaminated." The need to distinguish between contaminated and uncontaminated variables arose because seventh-grade student surveys and parents' interviews were not collected as early in the school year as might have been wished. There is good evidence that some of the programs were very active in the early part of that school year, before the student and parent interviews. This meant that not all of the seventh-grade variables could be treated as baseline variables. Those variables that appear to have been affected by early seventh-grade Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) program activities were treated as contaminated variables. Section E.1 provides information about which variables were classified as contaminated and about the process used in that classification.

Subsequent sections provide more detailed information on each method, but here are some brief notes on each method. The method of replicated counterfactual projection (CFP) weights is based on propensity scoring[53] and jackknifing.[54] It is a robust method, requiring only very weak distributional assumptions. The method of hierarchical linear models (HLM) is probably more powerful statistically and allows fixed effects at both the school and student levels, but it requires stronger distributional assumptions. Both approaches control on baseline differences in uncontaminated student-variables and both yield standard errors on estimated effects that reflect the clustering. The advantage of the HLM approach is that it also allowed control on school-level variables. However, this advantage is gained by making stronger distribution assumptions than are required for the CFP method. These extra distribution assumptions were clearly inappropriate for some outcomes. Thus, the CFP procedure was used for the outcomes that were strongly non-Gaussian, while the HLM procedure was used for those outcomes that were approximately distributed as Gaussian.

[53] P.R. Rosenbaum, and D.B. Rubin. The Central Role of Propensity Score in Observational Studies for Causal Effects. *Biometrika,* 70, 41-55: 1983; P.R. Rosenbaum, and D.B. Rubin. Reducing Bias in Observational Studies Using Subclassification on the Propensity Score. *Journal of the American Statistical Association,* 79, 516-524: 1984; R. Hornik, D. Maklan, D. Judkins, and D. Cadell, et al. *Evaluation of the National Youth Anti-Drug Media Campaign: Second Semi-Annual Report of Findings—April 2001*. Rockville, Md.: Westat, 2001.

[54] K.M. Wolter. *Introduction to Variance Estimation.* New York: Springer-Verlag, 1985.

Table E-1. Analysis methods

Method	Variables controlled	Other features
Replicated counterfactual projection weights	o Uncontaminated student-level variables from the seventh-grade parent and student questionnaires	o Clustering reflected in variance estimates o Effects of nonresponse adjustment reflected in variance estimates o No assumption about probability distribution of outcome variable
HLM with control on baseline value of outcome	o Uncontaminated student-level variables from the seventh-grade parent and student questionnaires o School-level averages of uncontaminated student-level variables for the seventh-grade parent and student questionnaires o Student-level seventh-grade report on the outcome of interest o School-level averages of student-level seventh-grade report on the outcome of interest	o Clustering reflected in variance estimates o Outcome variable assumed to be normally distributed
HLM without control on baseline value of outcome	o Uncontaminated student-level variables from the seventh-grade parent and student questionnaires o School-level averages of uncontaminated student-level variables for the seventh-grade parent and student questionnaires	o Clustering reflected in variance estimates o Outcome variable assumed to be normally distributed
Counterfactual imputations (Appendix I)	o Uncontaminated student-level variables from the seventh-grade parent and student questionnaires	o Clustering not reflected in variance estimates o No assumption about probability distribution of outcome variable
Analysis of covariance (Appendix H)	o Uncontaminated student-level variables from the seventh-grade parent and student questionnaires o Uncontaminated student-level variables from school records	o Clustering not reflected in variance estimates o Outcome variable assumed to be normally distributed

Table E-2. Application of analysis methods

Effects of	On	Method
GEAR UP application of analysis methods as a whole	o Course-taking behavior o GPAs o Percentage of students with grade of B or better o Student attendance o Percentage of students reporting definite intentions for college attendance o Percentage of parents who talked with child about college o Percentage of parents anticipating postsecondary education for child o Percentage of students who think college graduates earn more o Information on college planning o Parental attendance at parent-teacher conferences and school events	Replicated counterfactual projection weights
GEAR UP as a whole	o Scale for student expectations about postsecondary education (ExpectPSERev) o Scale for student's attitude toward school (Academic) o Scale for parent's perception of student's attitude toward school (Performance) o Scale for participation in extracurricular activities (ECBusy) o Scale for homework hours (HomeworkHours) o Scale for time not spent watching television or playing video games (NegJunkHours) o Scale for parent's perception of how hard the student works (SDiligent) o College Orientation Index (CollegeBoundRev)	HLM **with** control on baseline value of outcome
GEAR UP as a whole	o Scale for parental expectations for the student's postsecondary education (Pexpect) o Discussions about college and course planning (TalkCoursePlanning) o Student familiarity with different types of postsecondary institutions (HeardOfSchools) o Scale for student's knowledge about postsecondary education (KnowPSE) o Parental knowledge and involvement (ParInvolve)	HLM **without** control on baseline value of outcome
GEAR UP services	o College Orientation Index (CollegeBoundRev)	Counterfactual imputations
GEAR UP as a whole	o Standardized test scores	Analysis of covariance

E.1 Identification of Contaminated Baseline Variables

As mentioned above, the seventh-grade questionnaires were not administered early enough in the school year to serve as a true baseline. There was good evidence that the programs were active early that year and that those early activities had an impact on some outcome variables, such as knowledge about postsecondary education. This raised the difficult question for the evaluation of which, if any, of the seventh-grade variables should be controlled in the analysis. Those seventh-grade variables affected by early GEAR UP activities were classified as contaminated, and the rest were classified as uncontaminated. The decision was made to control only on those that were classified as uncontaminated. The task was sensitive because misclassification of variables could lead to either overestimation or underestimation of GEAR UP's effects. If the analysis controlled on contaminated variables, GEAR UP's effects would be underestimated. Alternatively, if uncontaminated variables were treated as contaminated, GEAR UP's effects could be overestimated.

This problem in the analysis of observation studies is discussed by Rosenbaum in his 1995 textbook (pages 61 to 62).[55] As a simple example, consider field trips to local colleges and the question of whether the GEAR UP program caused an increase in the number of students who went on such field trips during their eighth-grade year. Table E-3 shows that these field trips were already much more common in the GEAR UP schools early in the seventh grade and that the difference widened by the end of the eighth grade from 9 percentage points to 25 percentage points. If it were known that GEAR UP-sponsored college field trips started only in the second half of seventh grade, then we would say that the nine-point gap is evidence of selection bias and must be removed from estimated GEAR UP effects. One way to do that would be to average the gaps among those who did and did not have early seventh-grade trips, 17 and 27 points, respectively. This would lead to an estimated GEAR UP effect of (0.29)(17)+(1-0.29)(27) = 24 points, slightly less than the 25 points observed. If on the other hand, we have reason to believe (as we do) that the nine-point gap is at least partially due to early GEAR UP activities, then it is more appropriate to report the 25-point gap as the GEAR UP effect. If we decide that the seventh-grade report of college field trips is contaminated, then we estimate a 25-point effect. If, on the other hand, we decide that the variable is uncontaminated, then we report a 24-point effect.

Table E-3. Illustration of contaminated variable and analysis options (among eighth-grade respondents)

	Attended college campus (%)			
	Early in seventh grade	During eighth grade		
School type		Total	Among those who had trip early in seventh grade	Among those who had no trip early in seventh grade
Total	29	47	61	41
GEAR UP	33	59	68	55
Non-GEAR UP	24	34	51	28
Difference	9	25	17	27

[55] P.R. Rosenbaum. *Observational Studies.* New York: Springer-Verlag, 1995.

Although the difference between the two analyses in this illustration is slight, this was unknowable at the time that decisions about covariate admissibility were being made. It is well known that decisions about covariates in the analysis of observation studies can be highly influential on the final analyses. This section documents the decisions that were made by the study team and the decision process that they used. The validity of several findings in this report rests strongly on the appropriateness of these decisions. It is important to note that most decisions on contaminated variables were made before examining eighth-grade outcome data and were approved by an advisory panel.

The identification of contaminated variables relied on qualitative information from site visits, theory from the model for GEAR UP effects, and identification of counterintuitive patterns in the baseline data themselves. As an example of how the qualitative data from site visits were used, the visitors' reports noted that some programs had organized field trips to local colleges early in the year. In another example, visitors' reports noted that GEAR UP activities were often incorporated in PTA meetings and back-to-school nights that usually occur in September and early October—times prior to questionnaire administration. The visitors' reports on these issues argued strongly in favor of treating variables about college field trips and parental participation in informational meetings as contaminated.

As an example of how theory was used, consider that services should be received before effects can be generated. So those variables that were most closely related to service delivery (such as attending field trips or receiving written information about classes recommended for college preparation) are the ones that were most likely to be treated as contaminated.

Finally, with respect to counterintuitive patterns in the baseline data, it was noted that despite efforts to find well-matched comparison schools, it was still the case that GEAR UP schools generally showed more signs of social stress and deprivation than did the comparison schools. This pattern was seen both in terms of the data from the Common Core of Data (CCD) file used to select the comparison schools and in the seventh-grade surveys of students and parents. The methods described in sections E.2 and E.3 were, of course, used to remove these baseline differences. However, it was suspicious to find some variables that indicated the opposite to be true. One plausible explanation for such variables is that they are contaminated, showing the benefits of early GEAR UP activities.

To summarize, we were most likely to classify a seventh-grade variable as contaminated if (1) we had anecdotal reports of GEAR UP activities that could have affected the variable, (2) the variable was theoretically closely tied to service delivery, and (3) GEAR UP schools scored higher on the variable, when *higher* means in a direction more consistent with an atmosphere promoting postsecondary education. Based on three criteria, tentative decisions were made about which baseline variables should be treated as contaminated. This tentative list was then presented to a group of technical experts for approval. Based on the evidence outlined above, they concurred that the variables were likely contaminated. These decisions were agreed on before the analysis of the eighth-grade data. Subsequently, new recodes that were functions of these contaminated variables or closely related to them were also added to the list of contaminated variables. Table E-4 provides a list of the contaminated and student questionnaire variables, and table E-5 lists the contaminated indexes. Those that showed statistically significant differences among the two groups of schools, even after accounting for school-level clustering, are noted with an asterisk (*).

Table E-4. Contaminated baseline student questionnaire variables by GEAR UP status (tabulated on eighth-grade completes with nonresponse-adjusted weights)

Variable	Response	GEAR UP (%)	Non-GEAR UP (%)	Difference	95% Confidence interval
Adultmentor_7	Yes	44.0%	36.9%	7.1	*(0.3,13.9)
AdvisClassNeed_7	Yes	32.8%	26.0%	6.8	(-1.1,14.7)
AdvisReadyforColl_7	Yes	30.8%	20.3%	10.5	*(3.4,17.5)
AdvisReadyforHS_7	Yes	23.1%	19.8%	3.2	(-3.3,9.8)
ArtsTutother_7	Yes	25.8%	22.2%	3.6	(-2.0,9.2)
AttendClforColl_7	Yes	40.4%	22.1%	18.3	*(5.8,30.8)
AttendMeetCollPrep_7	Yes	17.4%	8.8%	8.7	*(1.7,15.7)
Childpartknow_7	Yes	38.6%	27.4%	11.2	*(4.3,18.1)
EnufInfo_7	No	46.0%	54.4%	-8.4	*(-15.3,-1.4)
EnufInfo_7	Some	40.8%	34.6%	6.2	*(2.3,10.1)
EnufInfo_7	Enough	13.2%	10.9%	2.2	(-1.9,6.3)
Heard2Year_7	Yes	61.7%	51.7%	10.0	*(3.1,16.8)
knowcollcampus_7	Yes	21.0%	7.8%	13.2	*(5.8,20.7)
MathTutother_7	Yes	30.7%	29.2%	1.5	(-2.8,5.9)
PrepMeet_7	Yes	13.0%	5.8%	7.2	*(0.7,13.7)
SciTutother_7	Yes	22.6%	20.4%	2.1	(-3.2,7.5)
TalkCollege_7	Yes	81.3%	78.6%	2.7	(-2.9,8.3)
TalkCounCollEntClasses_7	Yes	30.3%	24.1%	6.2	(-2.3,14.7)
VisitCollCamp_7	Yes	33.1%	24.4%	8.7	(-0.4,17.8)
Workshop_7	Yes	9.8%	6.3%	3.5	(-0.2,7.3)
WritInfo_7	Yes	21.0%	12.4%	8.5	*(2.6,14.5)

* Statistically significant at the $\alpha = 0.05$ level.

NOTE: See Appendix J, Glossary, for a crosswalk of variables with survey items.

Table E-5. Means of contaminated baseline indexes by GEAR UP status (tabulated on eighth-grade completes with nonresponse-adjusted weights)

	GEAR UP	Non-GEAR UP	Difference	95% Confidence interval
HeardOfSchools_7	0.3	-0.1	0.4	*(0.0,0.7)
KnowPSE_7	0.4	-0.3	0.7	*(0.1,1.2)
ParInvolve_7	0.3	-0.3	0.7	*(0.0,1.3)
ParPrep_7	0.4	-0.4	0.8	*(0.2,1.3)
pexpect_7	0.0	0.0	0.0	(-0.4,0.4)
TalkCoursePlanning_7	0.1	-0.3	0.3	(-0.1,0.8)

* Statistically significant at the $\alpha = 0.05$ level.`1

NOTE: See Appendix J, Glossary, for a crosswalk of variables with survey items.

Note that most of the variables that were judged to be contaminated show significant seventh-grade difference in the direction of a more positive atmosphere for postsecondary education in GEAR UP schools. Some of the differences are quite striking, such as the percentage of students who reported attending a class or meeting about getting ready for college (AttendClForColl_7) and the percent of parents who reported being aware of their child participating in a field trip to a local college (knowcollcampus_7). If we had controlled on these variables in our analyses, we almost certainly would have found many fewer effects of the GEAR UP program. We felt that it was appropriate not to control on these variables because they passed the criteria discussed above in this section.

E.2 Replicated Counterfactual Projection Weights

This procedure is based on propensity scoring and jackknifing. The term *CFP weights* was coined by Westat statisticians,[56] but is based on the general work of Paul Rosenbaum and Donald Rubin. More specifically, CFP weights are closely related to the "model-based" weights proposed by Rosenbaum.[57] The basic idea of CFP weights is simple. In the case of GEAR UP, the students in GEAR UP schools are reweighted to resemble the entire study sample and the students in non-GEAR UP schools are also reweighted to resemble the entire study sample. For example, students in GEAR UP schools reported more class skipping than their counterparts in non-GEAR UP schools. So the CFP weights for class-skippers in GEAR UP schools are adjusted down while the CFP weights for class-skippers in non-GEAR UP schools are adjusted up, so that when the two samples are tabulated using the CFP weights, the weighted frequency of class skipping is similar across the two groups of schools. The reweighted means can be viewed as projections to counterfactual universes in which either everyone attends a GEAR UP school or no one does. Hence the name.

Some nice features of this procedure include a lack of need for distribution assumptions about outcome variables, control on a rich set of confounders without the need to form a separate model for every outcome, robust variance estimation that fully reflects the clustered structure of the data and the ability to present complex results in simple form as in the technique known as predictive margins.[58] Propensity scoring is a procedure in which every student's probability of belonging to a GEAR UP school (as opposed to a comparison school) is modeled in terms of uncontaminated baseline variables. The counterfactual projection weights are formed using the propensity scores in such a manner that the GEAR UP and non-GEAR UP samples closely resemble each other on a weighted basis. This then induces weighted similarity between the two groups in terms of all the variables that entered the propensity model as well as in terms of all the variables that were given a chance to enter the model but were omitted because of a lack of model significance. This weighted similarity in terms of uncontaminated baseline characteristics ensures that weighted differences in outcomes between the two groups are reasonable estimates of program effects. The replication is used to provide robust variance estimates as described in appendix B. More information is now provided on the propensity scoring and on the formation of the CFP weights.

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[56] R. Hornik, D. Maklan, D. Judkins, and D. Cadell, et al. *Evaluation of the National Youth Anti-Drug Media Campaign: Second Semi-Annual Report of Findings—April 2001*. Rockville, Md.: Westat, 2001.

[57] P.R. Rosenbaum. Model-based Direct Adjustment. *Journal of the American Statistical Association,* 82, 387–394:1987.

[58] B.I. Graubard, and E.L. Korn. Predictive Margins with Survey Data. *Biometrics*, 55, 652–659:1999.

Table E-6 shows the logistic regression model to define each student's propensity to be in a GEAR UP school (as opposed to being in a non-GEAR UP school). Looking at a few of the estimated model coefficients, it is evident that minority GEAR UP students were more likely to skip classes than minority non-GEAR UP students, that GEAR UP students were less likely to have low hours of television viewing and video game playing, that they were less likely to affirm the importance of hard work in school, and that their parents were less likely to volunteer in schools. There are also more complex differences between the groups in terms of race, pre-seventh grade mobility, student-parent discussions, and the education of adults in the household. In addition to the variables shown, many other variables were given the chance to enter the model but did not. The small number of terms in the model speaks to the quality of initial selection of the non-GEAR UP schools for service as comparison schools. After controlling for the variables shown in table E-6, the groups were not, for example, different in terms of family income.

Table E-6. Variables and interactions that define membership in a GEAR UP school

Parameter	Estimate	Standard error	Chi-square	Wald Pr > ChiSq
Intercept	0.02	0.12	0.04	0.85
Volunteerism	-0.19	0.09	4.46	0.03
ClassSkipping	0.37	0.08	20.23	<.0001
ClassSkipping*White	-0.63	0.13	23.35	<.0001
NegJunkHours	-0.14	0.04	15.39	<.0001
ImpWork	-0.09	0.04	5.63	0.02
White*Mobility	0.26	0.05	26.51	<.0001
White*ParTalkPolitics	-0.21	0.07	9.74	0.00
Mobility*OtherAdultEd	-0.02	0.01	4.76	0.03

This model was then used to form five groups of students of descending propensities of being in a GEAR UP school. (Table E-7 provides the number of GEAR UP and comparison students in each of the five propensity groups.) Within each of these five groups, the students all had very similar probabilities of being a GEAR UP student. The first group identified by the model had characteristics that were least consistent with students in GEAR UP schools. Some of the students in this group were in GEAR UP schools, but most were not. The last of the five groups contained students with characteristics most consistent with the overall seventh-grade student body in the GEAR UP schools. The purpose of these five propensity groups was to have collections of similar students in which some attended GEAR UP schools and others did not. Within each group, these students could be compared with one another to measure the effect of attending a GEAR UP school, which was the major difference between the students within a given group.

Table E-7. Makeup of propensity groups, by school attendance

Propensity group (in ascending likelihood of attending a GEAR UP school)	Number of GEAR UP students	Number of comparison students	Total
1	251	426	677
2	326	352	678
3	369	309	678
4	399	279	678
5	446	232	678
Total	1,791	1,598	3,389

These five propensity groups were then used to form CFP weights in the following way. Within each of the five groups, the proportion of students in GEAR UP schools was calculated. Then, for each student in a GEAR UP school, his or her original weight[59] was divided by that proportion. Finally, the weights for each of the comparison students were divided by the proportion of students within the group who were not in GEAR UP schools. The following equation provides the formula for the calculation of the CFP weights.

$$W_{CFP_i} = W_{7_i} \sum_j \delta_{ij} \left(\frac{\Psi_i}{f_{gj}} + \frac{(1-\Psi_i)}{f_{cj}} \right) \quad (1)$$

Where

W_{CFP_i} = the CFP weight for student i

W_{7_i} = seventh-grade, nonresponse-adjusted weight for student i

δ_{ij} = $\begin{cases} 1 \text{ if student } i \text{ is in group } j \\ 0 \text{ otherwise} \end{cases}$

f_{gj} = the weighted percentage of students within group j who are in GEAR UP schools

Ψ_i = $\begin{cases} 1 \text{ if student } i \text{ attends a GEAR UP school} \\ 0 \text{ otherwise} \end{cases}$

f_{cj} = weighted percentage of students within group j who are not in GEAR UP schools

The CFP weights effectively project the experience of GEAR UP participants to the comparison students in the counterfactual state that they had belonged to a GEAR UP school. CFP weights also project the experience of comparison students to GEAR UP participants in the counterfactual state that they had not belonged to a GEAR UP school.

[59] Probabilities of student selection were not used in the weighting. Instead, as explained in appendix B, each student started with a weight of 1, which was adjusted for nonresponse to the seventh-grade student questionnaire.

For example, GEAR UP students make up less than one-half of Group no. 1. In the counterfactual projection weighting, the GEAR UP students needed to represent what would have happened in Group no. 1 if GEAR UP had been a universal program. So the GEAR UP students get a CFP weight of roughly 671/251=2.67. Continuing the example, non-GEAR UP students make up more than one-half of Group no. 1. In the CFP weighting, the non-GEAR UP students need to represent what would have happened if the GEAR UP program had not existed. So the non-GEAR UP students get a CFP weight of roughly 671/426=1.58. We know from the model that Group no. 1 is rich in minority students who do not skip classes, in white students who do skip classes, in students who spend less time watching television and playing video grams, whose parents volunteer and so on—the same groups that are underrepresented in GEAR UP schools and overrepresented in non-GEAR UP schools—so it is appropriate that, when generalizing the experience of GEAR UP students, those in Group no. 1 should receive heavier than average weights, and when generalizing the experience of non-GEAR UP students, those in Group no. 1 should receive lighter than average weights

In summary, through the use of CFP weights, the GEAR UP and comparison students' weights were manipulated so that each of the two counterfactual groups resembled the original combined set of students as closely as possible, with respect to the confounders. The analysis then proceeded by simply comparing the two counterfactual groups' eighth-grade outcomes to see if one group had outcomes that were different from the other group.

As support for the proposition that the CFP weights work as intended, refer to table E-8. This table shows mean values for the seven variables that entered the propensity model by intervention status and type of weight. Note that almost all of the differences between GEAR UP and non-GEAR UP schools are larger in absolute value with the ordinary weights than with the CFP weights. Also note that the lack of significant differences with even the ordinary weights seems paradoxical with the chi-square tests in table E-6, but that the reason for this seeming inconsistency is that the tests in table E-8 have been corrected for clustering while those in table E-6 were not. In addition, the sample size in table E-6 is for all seventh-grade respondents, while the sample size in table E-8 is only for eighth-grade respondents.

Table E-8. Comparisons between GEAR UP and non-GEAR UP schools with ordinary weights and with CFP weights

	With ordinary eighth-grade weights				With eighth-grade CFP weights			
	GEAR UP	Non-GEAR UP	Difference	95% Confidence interval	GEAR UP	Non-GEAR UP	Difference	95% Confidence interval
ClassSkipping_7	1.20	1.11	0.09	(0.00,0.18)	1.17	1.14	0.04	(-0.01,0.09)
ImpWork_7	-0.05	0.06	-0.11	(-0.28,0.06)	0.00	0.01	-0.02	(-0.14,0.11)
Mobility_7	2.50	2.47	0.03	(-0.21,0.28)	2.45	2.50	-0.05	(-0.21,0.11)
NegJunkHours_7	-0.08	0.08	-0.15	(-0.42,0.11)	0.00	-0.03	0.04	(-0.10,0.18)
OtherAdultEd_7	2.06	2.18	-0.12	(-0.51,0.28)	2.11	2.09	0.03	(-0.15,0.20)
ParTalkPolitics_7	1.71	1.77	-0.06	(-0.13,0.01)	1.74	1.73	0.01	(-0.06,0.07)
Volunteerism_7	0.18	0.22	-0.05	(-0.10,0.01)	0.19	0.20	-0.01	(-0.06,0.04)
White_7	0.36	0.45	-0.08	(-0.20,0.03)	0.43	0.39	0.03	(-0.04,0.11)

To be able to judge the significance of any findings from these follow-up comparisons, it is important to be able to report the variances of the estimated findings. Two factors affected the variance estimation for this evaluation. The first factor, clustering, is due to the fact that there are only 36 schools in the analysis. Students from the same schools tend to have similar responses for certain variables. This clustering around certain variables tends to differ from school to school. If there were more schools in the study, such clustering would have a smaller impact on the analysis.

The other factor to affect the variance estimates is nonresponse adjustment because of attrition. To lessen the effect of their attrition, nonresponse adjustments had to be made to the weighting system. While these nonresponse adjustments reduce the risk of bias, they also increase variances. The replication system used to estimate variances reflects both the clustering and the nonresponse adjustment, as explained in more detail in appendix B. Imputation also has the effect of increasing variances, but no attempt was made to reflect the impact of imputation on variance estimates. As a result, tests of significance are probably slightly too aggressive, meaning that many effects will appear to be statistically significant. Because few significant effects were found, the lack of an adjustment for imputation variance appears not to have been an issue.

E.3 Hierarchical Linear Modeling

Despite the favorable features of the CFP approach discussed earlier, it does have a weakness. While the CFP approach accounts for the variability among schools in the confidence intervals on estimated effects, it does not control on school-level differences in estimating the effects themselves. As an example of how school-level differences can affect individual growth, consider an excellent student in a school in which most of his or her classmates are doing well. Such a student probably progresses differently from an excellent student in a school of poorly performing students. To control on these school-level differences, a technique known as HLM was used for those outcomes with approximately normal distributions. In preparing confidence intervals on estimated effects, the HLM technique, like the replicated CFP approach, does reflect the clustering by school, but, unlike the replicated CFP approach, it does not reflect the impact of nonresponse adjustment. In addition, it makes some distribution assumptions in estimating the confidence intervals. The following equation provides the formula for the HLM model.

$$y_{ij}^{8} = T_i\delta + \sum_{l=1}^{5}\Theta_{ijl}\beta_l + \sum_{l=1}^{5}(x_{ijl} - \bar{x}_{i\bullet l})\beta_{5+1} + \sum_{l=1}^{5}\bar{x}_{i\bullet l}\beta_{10+1} + \sum_{l=1}^{5}\Theta_{ijl}(y_{ijl}^{7} - \bar{y}_{i\bullet l}^{7})\beta_{15+1} + [\pi_{ij} - \bar{\pi}_{i\bullet}]\beta_{21} + \bar{\pi}_{i\bullet}\beta_{22} + (y_{ij}^{7} - \bar{y}_{i\bullet}^{7})\beta_{23} + \bar{y}_{i\bullet}^{7}\beta_{24} + u_i + e_{ij} \quad (2)$$

where

y_{ij}^{8} = the eighth-grade outcome variable being modeled

T_i = $\begin{cases} 1 \text{ if school } i \text{ is a GEAR UP school} \\ 0 \text{ otherwise} \end{cases}$

δ = the effect of GEAR UP

Θ_{ijl} = $\begin{cases} 1 \text{ if student } j \text{ in school } i \text{ is in the } l\text{-th propensity group} \\ 0 \text{ otherwise} \end{cases}$

x_{ijl} = is the value of the l -th confounder for the student

$\bar{x}_{i\bullet l}$ = is the school-level average of l -th confounder

π_{ij} = the propensity for being in a GEAR UP program, estimated in terms of a row vector of student-level baseline covariates z_{ij}

$\bar{\pi}_{i\bullet}$ = the school-level average propensity for being in a GEAR UP school, for student i

y_{ij}^{7} = the baseline value of the outcome (unless it was contaminated by early GEAR UP activities in the fall of seventh grade, in which case the term would be dropped from the model)

$\bar{y}_{i\bullet}^{7}$ = the school average baseline value of the outcome (unless it was contaminated by early GEAR UP activities in the fall of seventh grade, in which case the term would be dropped from the model)

$u_i \sim N(0, \sigma_u^2)$ = a normally distributed set of iid random errors at the school level

$e_{ij} \sim N(0, \sigma_e^2)$ = a normally distributed set of iid random errors at the student level

The coefficients δ, $\beta_1, \ldots, \beta_{24}$, σ_u^2, and σ_e^2 are the fixed terms in the model, while the u_i and the e_{ij} are the random terms. The coefficients $\beta_{11}, \ldots, \beta_{15}, \beta_{22}$, and β_{24} are the terms that capture the systematic impact of baseline school-level differences on individual outcomes. The coefficients $\beta_1, \ldots, \beta_{10}, \beta_{16}, \ldots, \beta_{20}, \beta_{21}$, and β_{23} are the terms that capture the systematic impact of baseline individual-level differences on individual outcomes. The coefficients $\beta_{16}, \ldots, \beta_{20}, \beta_{23}$ and β_{24} are omitted from the models for outcomes judged to have contaminated baselines. All of the fixed terms except δ are nuisance parameters, meaning that they need to be estimated but that they do not address the effectiveness of the intervention (the GEAR UP program). The intervention is said to have a positive effect on the outcome if the estimates value of δ is positive and significantly larger than 0.

To use HLM, several assumptions had to be made. First, the variable being measured should be normally distributed. None of the outcomes were normally distributed, but some had stronger deviations than others. HLM was used for those confounders where the assumption of normality was not radically violated, and CFP weighting was used for the rest. In addition, for individual binary variables or ones that had four or fewer responses, CFP weights were used. Refer to table E-1 for a complete accounting of which technique was used for each analysis.

Table E-9 provides the predictor specifications for effect variables. Tables E-10 through 24 provide main-fitted HLM models for each of the outcome variables that were analyzed in this manner. These are the tables that were used to decide if GEAR UP had an impact on the variable in question on the total population within GEAR UP schools.

Table E-9. Predictor specifications for effect variables in tables E-10 through E-24

Variable name	Definition
mP	GEAR UP propensity (P), school mean
mP0	GEAR UP propensity (P), centered on mP
mBV	Baseline (seventh grade) value of the outcome variable
mBV0	Base variable for that model, centered on mBV
mCS	ClassSkipping_7, school mean
mCS0	Student deviation from school mean of ClassSkipping_7
mIW	ImpWork_7, school mean
mIW0	Student deviation from school mean of ImpWork_7
mMOB	Mobility_7, school mean
mMOB0	Student deviation from school mean of Mobility_7
mPTP	ParTalkPolitics_7, school mean
mPTP0	Student deviation from school mean of ParTalkPolitics_7
mNJH	NegJunkHours_7, school mean
mNJH0	Student deviation from school mean of NegJunkHours_7
rXbeta 0-4	Flag for the rank of the treatment propensity Xbeta, used as a class variable
mBV0 (rXbeta) 0-4	Student deviation from school mean of rXbeta
GEAR UP	Flag for students in GEAR UP schools

Table E-19 provides an example of a significant GEAR UP effect. That table indicates that parents of GEAR UP students scored higher on ParInvolve than parents of students in comparison schools. This finding is adjusted for preexisting differences in the group, both in terms of covariates explicitly shown in the model, such as school-level variables and baseline scores for ParInvolve, and in terms of variables that went into the GEAR UP propensity model. Table E-15 provides an example of a measurable finding in a contaminated variable, which does not take into account baseline score. Both are considered significant because the Pr > |t| score for the GEAR UP effect is less than 0.05.

Additional models were fit to look for interactions of GEAR UP with baseline characteristics such as race. The point of these additional models was to see if there was subgroups being affected by GEAR UP even if the total population was not affected.

For subgroup analysis, the form of the model was

$$y_{ij}^{8} = \sum_{l=1}^{k} T_i \delta_l \Omega_{ijl} + \sum_{l=1}^{5} \Theta_{ijl} \beta_l + \sum_{l=1}^{5} (x_{ijl} - \bar{x}_{i\bullet l}) \beta_{5+l} + \sum_{l=1}^{5} \bar{x}_{i\bullet l} \beta_{10+l} + \sum_{l=1}^{5} \Theta_{ijl} (y_{ijl}^{7} - \bar{y}_{i\bullet l}^{7}) \beta_{15+l} +$$
$$[\pi_{ij} - \bar{\pi}_{i\bullet}] \beta_{21} + \bar{\pi}_{i\bullet} \beta_{22} + (y_{ij}^{7} - \bar{y}_{i\bullet}^{7}) \beta_{23} + \bar{y}_{i\bullet}^{7} \beta_{24} + \sum_{l=1}^{k} \Omega_{ijl} \gamma_i + \sum_{l=1}^{k} \Omega_{ijl} (y_{ijl}^{7} - \bar{y}_{i\bullet l}^{7}) \gamma_{k+i} + u_i + e_{ij} \quad (3)$$

where

Ω_{ijl} = $\begin{cases} 1 \text{ if the student is in the } l\text{-th subgroup of interest} \\ 0 \text{ otherwise,} \end{cases}$

k = the number of levels of the variable defining subgroups, and

δ_1 = the effect of GEAR UP on the subgroup of interest.

To test the validity of HLM, a large simulation study was conducted. For this simulation, a mock database with a certain GEAR UP effect embedded in it, was created. Then HLM was run on that database. Several minor errors in the model were noted from the simulation. First, the variance of the random school-level effect was overestimated. In addition, the coefficients for the systematic student-level effects were underestimated. Luckily, both of these errors occurred in what are known as "nuisance parameters," so the fact that they existed had little effect on the outcome of the simulation. Ultimately, the test was successful because HLM provided an estimated GEAR UP effect that was similar to that which had been built into the model. For further details on this simulation study, refer to appendix F.

Table E-10. Beta coefficients for HLM for the variable Academic

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		-3.77	3.11	-1.21	0.22
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-1.04	1.74	-0.60	0.55
mBV	$\overline{y}^7_{i\bullet}$	β_{24}		0.62	0.17	3.62	0.00
mBV0	$y^7_{ij} - \overline{y}^7_{i\bullet}$	β_{23}		0.38	0.05	7.17	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		2.50	1.22	2.04	0.04
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		0.42	0.21	1.95	0.05
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.39	0.70	0.55	0.58
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		-0.21	0.08	-2.80	0.01
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.20	0.25	-0.78	0.43
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		-0.10	0.06	-1.64	0.10
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		1.47	1.00	1.46	0.14
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		0.18	0.07	2.57	0.01
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		-0.22	0.47	-0.48	0.63
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.10	0.10	0.99	0.32
rxbeta	Θ_{ij1}	β_1	0	-3.02	2.30	-1.31	0.19
rxbeta	Θ_{ij2}	β_2	1	-2.89	2.37	-1.22	0.22
rxbeta	Θ_{ij3}	β_3	2	-2.80	2.42	-1.16	0.25
rxbeta	Θ_{ij4}	β_4	3	-3.19	2.40	-1.33	0.19
rxbeta	Θ_{ij5}	β_5	4	-3.51	2.44	-1.44	0.15
mBV0(rxbeta)	$\Theta_{ij1}(y^7_{ij1} - \overline{y}^7_{i\bullet 1})$	β_{16}	0	0.32	0.08	4.03	<.0001
mBV0(rxbeta)	$\Theta_{ij2}(y^7_{ij2} - \overline{y}^7_{i\bullet 2})$	β_{17}	1	0.19	0.09	2.02	0.04
mBV0(rxbeta)	$\Theta_{ij3}(y^7_{ij3} - \overline{y}^7_{i\bullet 3})$	β_{18}	2	0.21	0.06	3.33	0.00
mBV0(rxbeta)	$\Theta_{ij4}(y^7_{ij4} - \overline{y}^7_{i\bullet 4})$	β_{19}	3	0.17	0.06	3.06	0.00
mBV0(rxbeta)	$\Theta_{ij5}(y^7_{ij5} - \overline{y}^7_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^2_u		0.19	0.08		
Residual variance		σ^2_e		9.35	0.24		
GEAR UP	T_i	δ		-0.16	0.22	-0.70	0.49

*****See table E-9 for explanation of effect variables.

Table E-11. Beta coefficients for HLM for the variable CollegeMoreMoney

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
Mp	$\overline{\pi}_{i\bullet}$	β_{22}		0.01	1.69	0.01	0.99
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-0.18	0.66	-0.27	0.79
mBV	$\overline{y}^{7}_{i\bullet}$	β_{24}		0.43	0.22	1.96	0.05
mBV0	$y^{7}_{ij} - \overline{y}^{7}_{i\bullet}$	β_{23}		0.15	0.04	4.18	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		0.76	0.54	1.41	0.16
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_{6}		-0.03	0.07	-0.52	0.60
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.10	0.20	0.52	0.60
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_{7}		0.05	0.03	2.05	0.04
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		0.04	0.14	0.31	0.76
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_{8}		0.04	0.02	1.93	0.05
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		0.42	0.34	1.21	0.22
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_{9}		0.05	0.03	1.73	0.08
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		0.29	0.12	2.41	0.02
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.05	0.02	2.16	0.03
rxbeta	Θ_{ij1}	β_{1}	0	-1.73	0.77	-2.24	0.03
rxbeta	Θ_{ij2}	β_{2}	1	-1.71	0.78	-2.19	0.03
rxbeta	Θ_{ij3}	β_{3}	2	-1.80	0.78	-2.32	0.02
rxbeta	Θ_{ij4}	β_{4}	3	-1.70	0.78	-2.18	0.03
rxbeta	Θ_{ij5}	β_{5}	4	-1.74	0.78	-2.22	0.03
mBV0(rxbeta)	$\Theta_{ij1}(y^{7}_{ij1} - \overline{y}^{7}_{i\bullet 1})$	β_{16}	0	0.05	0.06	0.90	0.37
mBV0(rxbeta)	$\Theta_{ij2}(y^{7}_{ij2} - \overline{y}^{7}_{i\bullet 2})$	β_{17}	1	0.08	0.06	1.30	0.20
mBV0(rxbeta)	$\Theta_{ij3}(y^{7}_{ij3} - \overline{y}^{7}_{i\bullet 3})$	β_{18}	2	-0.04	0.05	-0.78	0.43
mBV0(rxbeta)	$\Theta_{ij4}(y^{7}_{ij4} - \overline{y}^{7}_{i\bullet 4})$	β_{19}	3	-0.01	0.06	-0.25	0.81
mBV0(rxbeta)	$\Theta_{ij5}(y^{7}_{ij5} - \overline{y}^{7}_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^{2}_{u}		0.02	0.01		
Residual variance		σ^{2}_{e}		1.08	0.03		
GEAR UP	T_i	δ		-0.03	0.08	-0.34	0.74

*****See table E-9 for explanation of effect variables.

Table E-12. Beta coefficients for HLM for the variable CollegeBoundRev

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
Mp	$\overline{\pi}_{i\bullet}$	β_{22}		-0.75	12.05	-0.06	0.95
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-2.00	3.58	-0.56	0.58
mBV	$\overline{y}^{7}_{i\bullet}$	β_{24}		0.68	0.14	4.89	<.0001
mBV0	$y^{7}_{ij} - \overline{y}^{7}_{i\bullet}$	β_{23}		0.61	0.04	14.27	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		5.68	3.75	1.51	0.13
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_{6}		0.55	0.46	1.20	0.23
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		-0.62	2.11	-0.29	0.77
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_{7}		-0.54	0.20	-2.62	0.01
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.87	0.85	-1.03	0.30
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_{8}		-0.09	0.12	-0.75	0.45
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		6.39	3.32	1.92	0.05
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_{9}		-0.02	0.19	-0.11	0.91
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		0.44	1.79	0.25	0.81
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.39	0.22	1.80	0.07
rxbeta	Θ_{ij1}	β_{1}	0	-15.49	8.75	-1.77	0.08
rxbeta	Θ_{ij2}	β_{2}	1	-14.81	8.93	-1.66	0.10
rxbeta	Θ_{ij3}	β_{3}	2	-15.38	9.07	-1.69	0.09
rxbeta	Θ_{ij4}	β_{4}	3	-16.14	8.99	-1.80	0.07
rxbeta	Θ_{ij5}	β_{5}	4	-16.63	9.24	-1.80	0.07
mBV0(rxbeta)	$\Theta_{ij1}(y^{7}_{ij1} - \overline{y}^{7}_{i\bullet 1})$	β_{16}	0	0.24	0.07	3.42	0.00
mBV0(rxbeta)	$\Theta_{ij2}(y^{7}_{ij2} - \overline{y}^{7}_{i\bullet 2})$	β_{17}	1	0.10	0.06	1.69	0.09
mBV0(rxbeta)	$\Theta_{ij3}(y^{7}_{ij3} - \overline{y}^{7}_{i\bullet 3})$	β_{18}	2	0.10	0.06	1.68	0.09
mBV0(rxbeta)	$\Theta_{ij4}(y^{7}_{ij4} - \overline{y}^{7}_{i\bullet 4})$	β_{19}	3	0.01	0.05	0.12	0.90
mBV0(rxbeta)	$\Theta_{ij5}(y^{7}_{ij5} - \overline{y}^{7}_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^{2}_{u}		1.49	0.60		
Residual variance		σ^{2}_{e}		62.26	1.59		
GEAR UP	T_i	δ		-0.04	0.61	-0.06	0.95

*****See table E-9 for explanation of effect variables.

Table E-13. Beta coefficients for HLM for the variable ECBusy

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
Mp	$\overline{\pi}_{i\bullet}$	β_{22}		0.92	6.24	0.15	0.88
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-2.58	2.25	-1.15	0.25
mBV	$\overline{y}^7_{i\bullet}$	β_{24}		0.68	0.11	6.45	<.0001
mBV0	$y^7_{ij} - \overline{y}^7_{i\bullet}$	β_{23}		0.35	0.03	10.22	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		-0.56	1.95	-0.29	0.77
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		-0.07	0.17	-0.43	0.67
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.48	0.66	0.73	0.47
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		0.17	0.07	2.32	0.02
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.53	0.45	-1.18	0.24
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		-0.06	0.06	-1.03	0.30
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		0.46	0.91	0.51	0.61
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		0.13	0.09	1.50	0.13
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		0.67	0.47	1.43	0.15
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.09	0.08	1.06	0.29
rxbeta	Θ_{ij1}	β_1	0	0.71	3.09	0.23	0.82
rxbeta	Θ_{ij2}	β_2	1	0.75	3.21	0.23	0.82
rxbeta	Θ_{ij3}	β_3	2	0.54	3.31	0.16	0.87
rxbeta	Θ_{ij4}	β_4	3	0.56	3.36	0.17	0.87
rxbeta	Θ_{ij5}	β_5	4	0.92	3.45	0.27	0.79
mBV0(rxbeta)	$\Theta_{ij1}(y^7_{ij1} - \overline{y}^7_{i\bullet 1})$	β_{16}	0	0.30	0.05	6.32	<.0001
mBV0(rxbeta)	$\Theta_{ij2}(y^7_{ij2} - \overline{y}^7_{i\bullet 2})$	β_{17}	1	0.26	0.04	6.13	<.0001
mBV0(rxbeta)	$\Theta_{ij3}(y^7_{ij3} - \overline{y}^7_{i\bullet 3})$	β_{18}	2	0.10	0.05	2.14	0.03
mBV0(rxbeta)	$\Theta_{ij4}(y^7_{ij4} - \overline{y}^7_{i\bullet 4})$	β_{19}	3	0.09	0.05	1.94	0.05
mBV0(rxbeta)	$\Theta_{ij5}(y^7_{ij5} - \overline{y}^7_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^2_u		0.25	0.10		
Residual variance		σ^2_e		11.78	0.30		
GEAR UP	T_i	δ		-0.33	0.20	-1.66	0.10

*See table E-9 for explanation of effect variables.

Table E-14. Beta coefficients for HLM for the variable ExpectSERev

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
Mp	$\overline{\pi}_{i\bullet}$	β_{22}		1.62	5.38	0.30	0.76
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-3.19	2.22	-1.44	0.15
mBV	$\overline{y}^7_{i\bullet}$	β_{24}		0.49	0.11	4.34	<.0001
mBV0	$y^7_{ij} - \overline{y}^7_{i\bullet}$	β_{23}		0.36	0.04	9.38	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		1.34	1.60	0.84	0.40
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		-0.18	0.26	-0.71	0.48
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.04	0.61	0.06	0.95
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		0.13	0.10	1.35	0.18
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.57	0.36	-1.60	0.11
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		0.07	0.06	1.30	0.19
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		3.62	1.02	3.57	0.00
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		0.17	0.10	1.69	0.09
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		0.64	0.53	1.21	0.23
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.16	0.11	1.50	0.13
rxbeta	Θ_{ij1}	β_1	0	-7.65	3.28	-2.33	0.02
rxbeta	Θ_{ij2}	β_2	1	-7.45	3.38	-2.21	0.03
rxbeta	Θ_{ij3}	β_3	2	-7.67	3.47	-2.21	0.03
rxbeta	Θ_{ij4}	β_4	3	-7.67	3.45	-2.22	0.03
rxbeta	Θ_{ij5}	β_5	4	-7.66	3.58	-2.14	0.03
mBV0(rxbeta)	$\Theta_{ij1}(y^7_{ij1} - \overline{y}^7_{i\bullet 1})$	β_{16}	0	0.27	0.05	4.95	<.0001
mBV0(rxbeta)	$\Theta_{ij2}(y^7_{ij2} - \overline{y}^7_{i\bullet 2})$	β_{17}	1	0.21	0.05	4.03	<.0001
mBV0(rxbeta)	$\Theta_{ij3}(y^7_{ij3} - \overline{y}^7_{i\bullet 3})$	β_{18}	2	0.16	0.05	3.27	0.00
mBV0(rxbeta)	$\Theta_{ij4}(y^7_{ij4} - \overline{y}^7_{i\bullet 4})$	β_{19}	3	0.04	0.06	0.62	0.54
mBV0(rxbeta)	$\Theta_{ij5}(y^7_{ij5} - \overline{y}^7_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^2_u		0.25	0.11		
Residual variance		σ^2_e		15.34	0.39		
GEAR UP	T_i	δ		0.22	0.24	0.93	0.35

*****See table E-9 for explanation of effect variables.

Table E-15. Beta coefficients for HLM for the variable HeardOfSchools (contaminated)

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
Mp	$\overline{\pi}_{i\bullet}$	β_{22}		-13.49	3.79	-3.56	0.00
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-3.28	1.39	-2.36	0.02
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		0.40	1.18	0.34	0.73
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		0.01	0.12	0.11	0.91
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		-0.17	0.35	-0.48	0.63
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		0.07	0.05	1.46	0.14
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.14	0.24	-0.61	0.54
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		0.08	0.05	1.62	0.11
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		0.25	0.76	0.33	0.74
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		0.13	0.07	1.78	0.08
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		-1.59	0.38	-4.13	<.0001
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.05	0.06	0.92	0.36
rxbeta	Θ_{ij1}	β_1	0	6.26	1.98	3.16	0.00
rxbeta	Θ_{ij2}	β_2	1	6.32	2.05	3.09	0.00
rxbeta	Θ_{ij3}	β_3	2	6.41	2.06	3.11	0.00
rxbeta	Θ_{ij4}	β_4	3	6.43	2.11	3.05	0.00
rxbeta	Θ_{ij5}	β_5	4	6.70	2.13	3.15	0.00
Variance of school-level random effects		σ_u^2		0.19	0.07		
Residual variance		σ_e^2		5.12	0.15		
GEAR UP	T_i	δ		0.35	0.16	2.23	0.03

*****See table E-9 for explanation of effect variables.

Table E-16. Beta coefficients for HLM for the variable HomeWorkHours

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
Mp	$\overline{\pi}_{i\bullet}$	β_{22}		-1.6	1.09	-1.49	0.14
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		0.22	0.48	0.47	0.64
mBV	$\overline{y}^{7}_{i\bullet}$	β_{24}		0.1	0.13	0.74	0.46
mBV0	$y^{7}_{ij} - \overline{y}^{7}_{i\bullet}$	β_{23}		0.19	0.04	4.24	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		0.18	0.36	0.49	0.62
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_{6}		-0.1	0.05	-1.17	0.24
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		-0	0.10	-0.43	0.67
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_{7}		0.05	0.02	2.21	0.03
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0	0.09	-0.10	0.92
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_{8}		-0	0.02	-0.25	0.80
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		-0.3	0.24	-1.45	0.15
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_{9}		0.07	0.03	2.55	0.01
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		0.13	0.11	1.20	0.23
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.03	0.03	1.03	0.30
rxbeta	Θ_{ij1}	β_{1}	0	1.37	0.62	2.22	0.03
rxbeta	Θ_{ij2}	β_{2}	1	1.32	0.63	2.10	0.04
rxbeta	Θ_{ij3}	β_{3}	2	1.25	0.64	1.96	0.05
rxbeta	Θ_{ij4}	β_{4}	3	1.21	0.64	1.88	0.06
rxbeta	Θ_{ij5}	β_{5}	4	1.24	0.65	1.90	0.06
mBV0(rxbeta)	$\Theta_{ij1}(y^{7}_{ij1} - \overline{y}^{7}_{i\bullet 1})$	β_{16}	0	0.07	0.07	0.98	0.33
mBV0(rxbeta)	$\Theta_{ij2}(y^{7}_{ij2} - \overline{y}^{7}_{i\bullet 2})$	β_{17}	1	0.05	0.07	0.80	0.43
mBV0(rxbeta)	$\Theta_{ij3}(y^{7}_{ij3} - \overline{y}^{7}_{i\bullet 3})$	β_{18}	2	0.04	0.05	0.72	0.47
mBV0(rxbeta)	$\Theta_{ij4}(y^{7}_{ij4} - \overline{y}^{7}_{i\bullet 4})$	β_{19}	3	-0.2	0.06	-2.66	0.01
mBV0(rxbeta)	$\Theta_{ij5}(y^{7}_{ij5} - \overline{y}^{7}_{i\bullet 5})$	β_{20}	4	0	.	.	.
Variance of school-level random effects		σ^{2}_{u}		0.01	0.01		
Residual variance		σ^{2}_{e}		1.09	0.03		
GEAR UP	T_i	δ		0.02	0.04	0.39	0.70

*****See table E-9 for explanation of effect variables.

Table E-17. Beta coefficients for HLM for the variable NegJunkHours

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		-0.72	1.16	-0.62	0.54
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		0.33	0.71	0.47	0.64
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		0.48	0.09	5.18	<.0001
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		0.32	0.05	6.39	<.0001
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.33	0.48	0.70	0.48
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		-0.04	0.07	-0.56	0.57
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.25	0.12	-2.09	0.04
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		0.03	0.02	1.58	0.12
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		-0.11	0.09	-1.25	0.21
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		0.01	0.02	0.75	0.45
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		-0.40	0.19	-2.06	0.04
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.02	0.02	0.63	0.53
rxbeta	Θ_{ij1}	β_1	0	1.06	0.60	1.77	0.08
rxbeta	Θ_{ij2}	β_2	1	1.03	0.62	1.65	0.10
rxbeta	Θ_{ij3}	β_3	2	0.89	0.65	1.36	0.17
rxbeta	Θ_{ij4}	β_4	3	0.76	0.66	1.15	0.25
rxbeta	Θ_{ij5}	β_5	4	0.97	0.67	1.43	0.15
Variance of school-level random effects		σ_u^2		0.01	0.01		
Residual variance		σ_e^2		0.88	0.02		
GEAR UP	T_i	δ		-0.03	0.05	-0.70	0.49

*****See table E-9 for explanation of effect variables.

Table E-18. Beta coefficients for HLM for the variable Performance

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		5.73	2.96	1.93	0.05
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		0.13	0.98	0.13	0.90
mBV	$\overline{y}^7_{i\bullet}$	β_{24}		0.30	0.14	2.17	0.03
mBV0	$y^7_{ij} - \overline{y}^7_{i\bullet}$	β_{23}		0.49	0.04	12.10	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		-0.31	0.85	-0.37	0.71
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		-0.28	0.10	-2.83	0.00
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.15	0.43	0.35	0.73
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		0.02	0.04	0.61	0.55
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.48	0.23	-2.06	0.04
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		0.00	0.04	-0.01	1.00
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		1.99	0.78	2.56	0.01
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		0.12	0.06	1.98	0.05
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		1.08	0.43	2.53	0.01
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.16	0.04	3.52	0.00
rxbeta	Θ_{ij1}	β_1	0	-4.86	2.21	-2.20	0.03
rxbeta	Θ_{ij2}	β_2	1	-4.96	2.25	-2.20	0.03
rxbeta	Θ_{ij3}	β_3	2	-5.08	2.29	-2.22	0.03
rxbeta	Θ_{ij4}	β_4	3	-5.10	2.29	-2.23	0.03
rxbeta	Θ_{ij5}	β_5	4	-5.16	2.32	-2.23	0.03
mBV0(rxbeta)	$\Theta_{ij1}(y^7_{ij1} - \overline{y}^7_{i\bullet 1})$	β_{16}	0	0.11	0.06	1.67	0.10
mBV0(rxbeta)	$\Theta_{ij2}(y^7_{ij2} - \overline{y}^7_{i\bullet 2})$	β_{17}	1	-0.04	0.05	-0.82	0.42
mBV0(rxbeta)	$\Theta_{ij3}(y^7_{ij3} - \overline{y}^7_{i\bullet 3})$	β_{18}	2	-0.06	0.06	-1.05	0.30
mBV0(rxbeta)	$\Theta_{ij4}(y^7_{ij4} - \overline{y}^7_{i\bullet 4})$	β_{19}	3	-0.05	0.06	-0.75	0.45
mBV0(rxbeta)	$\Theta_{ij5}(y^7_{ij5} - \overline{y}^7_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^2_u		0.09	0.04		
Residual variance		σ^2_e		4.21	0.11		
GEAR UP	T_i	δ		0.09	0.14	0.60	0.55

*See table E-9 for explanation of effect variables.

Table E-19. Beta coefficients for HLM for the variable ParInvolve

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		-2.18	5.30	-0.41	0.68
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		1.09	1.74	0.63	0.53
mBV	$\overline{y}^{7}_{i\bullet}$	β_{24}		0.44	0.12	3.69	0.00
mBV0	$y^{7}_{ij} - \overline{y}^{7}_{i\bullet}$	β_{23}		0.35	0.04	8.39	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		-0.40	1.29	-0.31	0.76
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_{6}		-0.29	0.12	-2.31	0.02
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.19	0.47	0.40	0.69
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_{7}		-0.05	0.08	-0.62	0.54
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		0.23	0.31	0.72	0.47
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_{8}		0.00	0.06	0.03	0.98
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		1.01	0.88	1.15	0.25
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_{9}		0.16	0.07	2.13	0.03
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		-0.33	0.50	-0.66	0.51
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.03	0.06	0.45	0.66
rxbeta	Θ_{ij1}	β_{1}	0	-0.33	2.84	-0.12	0.91
rxbeta	Θ_{ij2}	β_{2}	1	-0.83	2.92	-0.28	0.78
rxbeta	Θ_{ij3}	β_{3}	2	-1.34	2.98	-0.45	0.65
rxbeta	Θ_{ij4}	β_{4}	3	-1.44	2.93	-0.49	0.62
rxbeta	Θ_{ij5}	β_{5}	4	-1.69	3.03	-0.56	0.58
mBV0(rxbeta)	$\Theta_{ij1}(y^{7}_{ij1} - \overline{y}^{7}_{i\bullet 1})$	β_{16}	0	0.04	0.07	0.59	0.55
mBV0(rxbeta)	$\Theta_{ij2}(y^{7}_{ij2} - \overline{y}^{7}_{i\bullet 2})$	β_{17}	1	0.03	0.06	0.55	0.58
mBV0(rxbeta)	$\Theta_{ij3}(y^{7}_{ij3} - \overline{y}^{7}_{i\bullet 3})$	β_{18}	2	0.00	0.06	-0.07	0.94
mBV0(rxbeta)	$\Theta_{ij4}(y^{7}_{ij4} - \overline{y}^{7}_{i\bullet 4})$	β_{19}	3	-0.11	0.07	-1.55	0.12
mBV0(rxbeta)	$\Theta_{ij5}(y^{7}_{ij5} - \overline{y}^{7}_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^{2}_{u}		0.20	0.09		
Residual variance		σ^{2}_{e}		11.73	0.30		
GEAR UP	T_i	δ		0.75	0.19	3.98	<.0001

*****See table E-9 for explanation of effect variables.

Table E-20. Beta coefficients for HLM for the variable PExpect (contaminated)

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		5.81	3.75	1.55	0.12
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-1.67	1.74	-0.96	0.34
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		-0.03	1.07	-0.03	0.98
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_{6}		-0.05	0.12	-0.40	0.69
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.57	0.47	1.22	0.22
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_{7}		0.06	0.06	1.16	0.25
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.28	0.28	-1.00	0.32
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_{8}		0.02	0.05	0.35	0.73
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		3.05	0.61	4.98	<.0001
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_{9}		0.34	0.07	4.75	<.0001
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		1.24	0.32	3.91	<.0001
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.17	0.06	2.63	0.01
rxbeta	Θ_{ij1}	β_{1}	0	-7.64	1.82	-4.20	<.0001
rxbeta	Θ_{ij2}	β_{2}	1	-7.65	1.91	-4.01	<.0001
rxbeta	Θ_{ij3}	β_{3}	2	-7.95	1.96	-4.05	<.0001
rxbeta	Θ_{ij4}	β_{4}	3	-7.90	2.01	-3.94	<.0001
rxbeta	Θ_{ij5}	β_{5}	4	-7.85	2.02	-3.88	0.00
Variance of school-level random effects		σ_u^2		0.09	0.05		
Residual variance		σ_e^2		7.43	0.19		
GEAR UP	T_i	δ		0.13	0.15	2.02	0.04

*****See table E-9 for explanation of effect variables.

Table E-21. Beta coefficients for HLM for the variable PPartCB

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		5.13	5.21	0.98	0.33
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-1.39	1.94	-0.72	0.47
mBV	$\overline{y}^7_{i\bullet}$	β_{24}		0.54	0.14	3.80	0.00
mBV0	$y^7_{ij} - \overline{y}^7_{i\bullet}$	β_{23}		0.47	0.03	14.04	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		-0.45	1.34	-0.33	0.74
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		-0.22	0.18	-1.20	0.23
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		-0.18	0.75	-0.24	0.81
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		0.02	0.09	0.28	0.78
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.52	0.37	-1.42	0.16
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		-0.02	0.07	-0.22	0.82
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		3.13	1.26	2.49	0.01
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		0.33	0.11	3.13	0.00
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		0.97	0.72	1.36	0.17
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.23	0.08	3.03	0.00
rxbeta	Θ_{ij1}	β_1	0	-6.51	3.93	-1.66	0.10
rxbeta	Θ_{ij2}	β_2	1	-6.31	4.04	-1.56	0.12
rxbeta	Θ_{ij3}	β_3	2	-6.64	4.13	-1.61	0.11
rxbeta	Θ_{ij4}	β_4	3	-6.61	4.11	-1.61	0.11
rxbeta	Θ_{ij5}	β_5	4	-6.72	4.20	-1.60	0.11
mBV0(rxbeta)	$\Theta_{ij1}(y^7_{ij1} - \overline{y}^7_{i\bullet 1})$	β_{16}	0	0.16	0.05	3.09	0.00
mBV0(rxbeta)	$\Theta_{ij2}(y^7_{ij2} - \overline{y}^7_{i\bullet 2})$	β_{17}	1	0.02	0.06	0.36	0.72
mBV0(rxbeta)	$\Theta_{ij3}(y^7_{ij3} - \overline{y}^7_{i\bullet 3})$	β_{18}	2	0.02	0.05	0.37	0.71
mBV0(rxbeta)	$\Theta_{ij4}(y^7_{ij4} - \overline{y}^7_{i\bullet 4})$	β_{19}	3	-0.04	0.05	-0.83	0.41
mBV0(rxbeta)	$\Theta_{ij5}(y^7_{ij5} - \overline{y}^7_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^2_u		0.22	0.10		
Residual variance		σ^2_e		13.22	0.34		
GEAR UP	T_i	δ		0.21	0.24	0.89	0.37

*See table E-9 for explanation of effect variables.

Table E-22. Beta coefficients for HLM for the variable SDiligent

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		4.39	2.07	2.12	0.03
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-1.01	1.05	-0.96	0.34
mBV	$\overline{y}^{7}_{i\bullet}$	β_{24}		0.81	0.10	8.47	<.0001
mBV0	$y^{7}_{ij} - \overline{y}^{7}_{i\bullet}$	β_{23}		0.21	0.06	3.72	0.00
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		-0.98	0.63	-1.57	0.12
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_{6}		-0.11	0.09	-1.21	0.23
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		-0.09	0.30	-0.31	0.76
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_{7}		0.02	0.04	0.56	0.57
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.12	0.16	-0.77	0.44
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_{8}		0.01	0.04	0.31	0.75
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		0.25	0.41	0.61	0.54
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_{9}		0.09	0.05	1.95	0.05
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		0.19	0.23	0.84	0.40
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.11	0.04	2.46	0.01
rxbeta	Θ_{ij1}	β_{1}	0	-1.43	1.13	-1.26	0.21
rxbeta	Θ_{ij2}	β_{2}	1	-1.47	1.17	-1.26	0.21
rxbeta	Θ_{ij3}	β_{3}	2	-1.25	1.20	-1.04	0.30
rxbeta	Θ_{ij4}	β_{4}	3	-1.35	1.24	-1.08	0.28
rxbeta	Θ_{ij5}	β_{5}	4	-1.20	1.27	-0.94	0.34
mBV0(rxbeta)	$\Theta_{ij1}(y^{7}_{ij1} - \overline{y}^{7}_{i\bullet 1})$	β_{16}	0	0.13	0.08	1.71	0.09
mBV0(rxbeta)	$\Theta_{ij2}(y^{7}_{ij2} - \overline{y}^{7}_{i\bullet 2})$	β_{17}	1	0.10	0.06	1.59	0.11
mBV0(rxbeta)	$\Theta_{ij3}(y^{7}_{ij3} - \overline{y}^{7}_{i\bullet 3})$	β_{18}	2	0.08	0.07	1.17	0.24
mBV0(rxbeta)	$\Theta_{ij4}(y^{7}_{ij4} - \overline{y}^{7}_{i\bullet 4})$	β_{19}	3	-0.03	0.06	-0.42	0.67
mBV0(rxbeta)	$\Theta_{ij5}(y^{7}_{ij5} - \overline{y}^{7}_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^{2}_{u}		0.05	0.02		
Residual variance		σ^{2}_{e}		3.02	0.08		
GEAR UP	T_i	δ		-0.05	0.11	-0.42	0.68

*****See table E-9 for explanation of effect variables.

Table E-23. Beta coefficients for HLM for the variable SPartCB

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		-2.72	8.47	-0.32	0.75
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-1.81	3.36	-0.54	0.59
mBV	$\overline{y}^7_{i\bullet}$	β_{24}		0.61	0.17	3.59	0.00
mBV0	$y^7_{ij} - \overline{y}^7_{i\bullet}$	β_{23}		0.51	0.04	12.30	<.0001
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		5.48	3.24	1.69	0.09
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		0.45	0.41	1.11	0.27
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.08	1.52	0.05	0.96
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		-0.33	0.17	-1.95	0.05
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.62	0.62	-1.00	0.32
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		-0.06	0.09	-0.60	0.55
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		4.52	2.46	1.84	0.07
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		-0.12	0.14	-0.83	0.41
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		0.12	1.13	0.10	0.92
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.27	0.19	1.41	0.16
rxbeta	Θ_{ij1}	β_1	0	-11.35	5.67	-2.00	0.05
rxbeta	Θ_{ij2}	β_2	1	-11.07	5.79	-1.91	0.06
rxbeta	Θ_{ij3}	β_3	2	-11.33	5.91	-1.92	0.06
rxbeta	Θ_{ij4}	β_4	3	-12.05	5.84	-2.06	0.04
rxbeta	Θ_{ij5}	β_5	4	-12.39	6.04	-2.05	0.04
mBV0(rxbeta)	$\Theta_{ij1}(y^7_{ij1} - \overline{y}^7_{i\bullet 1})$	β_{16}	0	0.26	0.07	3.62	0.00
mBV0(rxbeta)	$\Theta_{ij2}(y^7_{ij2} - \overline{y}^7_{i\bullet 2})$	β_{17}	1	0.18	0.07	2.47	0.01
mBV0(rxbeta)	$\Theta_{ij3}(y^7_{ij3} - \overline{y}^7_{i\bullet 3})$	β_{18}	2	0.15	0.06	2.57	0.01
mBV0(rxbeta)	$\Theta_{ij4}(y^7_{ij4} - \overline{y}^7_{i\bullet 4})$	β_{19}	3	0.01	0.05	0.29	0.77
mBV0(rxbeta)	$\Theta_{ij5}(y^7_{ij5} - \overline{y}^7_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^2_u		0.71	0.30		
Residual variance		σ^2_e		37.15	0.95		
GEAR UP	T_i	δ		-0.12	0.42	-0.27	0.78

*****See table E-9 for explanation of effect variables.

Table E-24. Beta coefficients for HLM for the variable TalkCoursePlanning

Effect*	Predictor variable in equation (2)	Parameter symbol	Value of categorical predictor	Estimate	Standard error	t Value	Pr > |t|
mP	$\overline{\pi}_{i\bullet}$	β_{22}		-5.00	3.44	-1.45	0.15
mP0	$\pi_{ij} - \overline{\pi}_{i\bullet}$	β_{21}		-3.51	1.28	-2.75	0.01
mBV	$\overline{y}^7_{i\bullet}$	β_{24}		0.08	0.15	0.55	0.59
mBV0	$y^7_{ij} - \overline{y}^7_{i\bullet}$	β_{23}		0.12	0.04	3.19	0.00
mCS	$\overline{x}_{i\bullet 1}$	β_{11}		0.79	0.92	0.87	0.39
mCS0	$x_{ij1} - \overline{x}_{i\bullet 1}$	β_6		0.18	0.12	1.45	0.15
mIW	$\overline{x}_{i\bullet 2}$	β_{12}		0.90	0.37	2.42	0.02
mIW0	$x_{ij2} - \overline{x}_{i\bullet 2}$	β_7		0.17	0.05	3.63	0.00
mMOB	$\overline{x}_{i\bullet 3}$	β_{13}		-0.20	0.21	-0.95	0.34
mMOB0	$x_{ij3} - \overline{x}_{i\bullet 3}$	β_8		0.04	0.04	1.01	0.31
mPTP	$\overline{x}_{i\bullet 4}$	β_{14}		1.51	0.66	2.30	0.02
mPTP0	$x_{ij4} - \overline{x}_{i\bullet 4}$	β_9		0.12	0.05	2.32	0.02
mNJH	$\overline{x}_{i\bullet 5}$	β_{15}		-0.73	0.28	-2.59	0.01
mNJH0	$x_{ij5} - \overline{x}_{i\bullet 5}$	β_{10}		0.04	0.05	0.80	0.42
rxbeta	Θ_{ij1}	β_1	0	-0.97	1.87	-0.52	0.60
rxbeta	Θ_{ij2}	β_2	1	-0.87	1.88	-0.46	0.65
rxbeta	Θ_{ij3}	β_3	2	-0.77	1.92	-0.40	0.69
rxbeta	Θ_{ij4}	β_4	3	-0.59	1.92	-0.31	0.76
rxbeta	Θ_{ij5}	β_5	4	-0.49	1.96	-0.25	0.80
mBV0(rxbeta)	$\Theta_{ij1}(y^7_{ij1} - \overline{y}^7_{i\bullet 1})$	β_{16}	0	-0.02	0.06	-0.31	0.76
mBV0(rxbeta)	$\Theta_{ij2}(y^7_{ij2} - \overline{y}^7_{i\bullet 2})$	β_{17}	1	0.13	0.06	2.37	0.02
mBV0(rxbeta)	$\Theta_{ij3}(y^7_{ij3} - \overline{y}^7_{i\bullet 3})$	β_{18}	2	0.05	0.05	1.10	0.27
mBV0(rxbeta)	$\Theta_{ij4}(y^7_{ij4} - \overline{y}^7_{i\bullet 4})$	β_{19}	3	0.05	0.05	0.99	0.32
mBV0(rxbeta)	$\Theta_{ij5}(y^7_{ij5} - \overline{y}^7_{i\bullet 5})$	β_{20}	4	0.00	.	.	.
Variance of school-level random effects		σ^2_u		0.11	0.05		
Residual variance		σ^2_e		5.31	0.14		
GEAR UP	T_i	δ		0.59	0.15	4.05	<.0001

*****See table E-9 for explanation of effect variables.

Appendix F

Hierarchical Linear Modeling (HLM) Simulation Study

Although the field of hierarchical linear models has seen a tremendous expansion in use, in part due to improved software and textbooks[*] and has been extensively researched for many more years, one area that has not received much attention is whether it is possible to use information about sample subjects within clusters to estimate cluster-level covariates and then control on those estimated cluster-level covariates in the analysis of individual outcomes. For this study, a small simulation study was undertaken to study the issue. This appendix documents the methods and results of that study.

F.1 Simulation Model

In this stimulation study, a sample of 80,000 students in 1,000 schools was created, with a constant 80 students per school. Both school-level and student-level covariates were simulated. The 1,000 schools were split into two groups of 500 each with probabilities that were a function of the school-level covariates, thereby creating a selection bias. Student-level outcomes were simulated that were a function of baseline student-level covariates, baseline school-level covariates, treatment status and random errors at both the school and student levels. This simulated data set was then analyzed with the same HLM software used to analyze the Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) data.

Before describing the model in more detail, several caveats are noted. First, the numbers of schools and students simulated are much larger than was available in the GEAR UP evaluation, although the number of students per school was comparable. The idea was to see if the technique would at least work with very large sample sizes. It probably does not work as well with smaller sample sizes available in the GEAR UP evaluation. Second, only a single replication of the simulation was carried out. Ideally, several hundred replications would have been carried out. Time and resources did not permit this level of effort.

A number of steps were involved in constructing and analyzing the simulated data set. First, a set of independent school-level latent variables was constructed. Second, the school-level covariates were used to generate a set of independent student-level latent variables. Third, these were mixed to create a correlated set of student-level manifest covariates and a latent true baseline score on the outcome variable. Fourth, measurement noise was added to the latent true baseline outcome to create a manifest baseline outcome. Fifth, the manifest student-level covariates were averaged within schools to create manifest school-level covariates. Sixth, the manifest student- and school-level covariates were mixed to create a latent student-level treatment propensity. Seventh, the latent student-level treatment propensities were averaged within schools to create a preliminary latent school-level treatment propensity. Eighth, these preliminary latent school-level treatment propensities were stretched out some to produce greater variability across schools. Ninth, a set of 500 schools was randomly selected with probability proportionate to the stretched latent school-level treatment propensity. Tenth, the students were classified

[*] A.S. Bryk, and S.W. Raudenbush. *Hierarchical Linear Models: Application and Data Analysis Methods*. Newbury Park, Calif.: Sage Publications; 1992; P.J. Diggle, K.Y. Liang, and S.L. Zeger. *Analysis of Longitudinal Data*. Oxford: Clarendon Press, 1994; H. Goldstein. *Multi-level Statistical Models*, 2d ed. London: Arnold, 1995; C.E. McCulloch, and S.R. Searle. *Generalized, Linear and Mixed Models*. New York: John Wiley and Sons, 2001.

into quintiles of personal treatment propensities. Eleventh, the follow-up outcomes were generated as a function of all the other variables generated thus far. Finally, the data set was analyzed using Proc Mixed.

The latent school-level covariates were generated as

$L_{i\mathrm{l}} \sim N(0, \tau_{\mathrm{l}}^2)$, for *i*=1 to 1,000 and l =1 to 8,

with variances 70, 80, 90, 100, 105, 110, 120, and 130.

The latent student-level covariates were then generated as

$g_{ij\mathrm{l}} \sim N(L_{i\mathrm{l}}, \sigma_{\mathrm{l}}^2)$, for *i*=1 to 1,000; l =1 to 8, and *j*=1 to 80,

with variances 930, 920, 910, 900, 895, 890, 880, and 870.

The manifest student-level covariates were then generated as

$$x_{ij\mathrm{l}} =\sim N\left((0.46)\sum_{t=1}^{8}\varphi_{\mathrm{l}t}g_{ijt}, 784\right), \text{ for } i\text{=1 to 1,000; } \mathrm{l} \text{ =1 to 8, and } j \text{ =1 to 80}$$

and latent true baseline outcome as

$$y_{ij}^{7T} =\sim N\left((0.46)\sum_{t=1}^{8}\varphi_{9t}g_{ijt}, 784\right) \text{ for } i\text{=1 to 1,000; and } j \text{ =1 to 80,}$$

where the phi terms were

(.90 .30 .05 .05 .05 .05 .05 .05
.05 .90 .30 .05 .05 .05 .05 .05
.05 .05 .90 .30 .05 .05 .05 .05
.05 .05 .05 .90 .30 .05 .05 .05
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.05 .05 .05 .05 .05 .90 .30 .05
.05 .05 .05 .05 .05 .05 .90 .30
.30 .05 .05 .05 .05 .05 .05 .90
.20 .30 .20 .20 .40 .30 .05 .40)

The manifest true baseline outcomes were then simulated as

$$y_{ij}^{7} \sim N\left((0.95)y_{ij}^{7T}, 100\right) \text{ for } i\text{=1 to 1,000; and } j \text{ =1 to 80}$$

Note that the 100 represents measurement variance and the factor of 0.95 a slight measurement bias. These measurement errors were introduced because of concern that the method would not work well if they were present.

The manifest school-level covariates were then generated as

$$\bar{x}_{i\bullet l} = \frac{1}{80}\sum_{j=1}^{80} x_{ijl} \quad \text{for } i\text{=1 to 1,000; and } l \text{=1 to 8.}$$

The student-level logit propensities were then calculated as

$$\ln\left(\frac{\pi_{ij}}{1-\pi_{ij}}\right) = \frac{1}{250}\left(\sum_{l=1}^{9}\alpha_{1l}\,x_{ijl} + \sum_{l=1}^{9}\alpha_{2l}\,\bar{x}_{i\bullet l}\right),$$

where the alpha parameters are shown in Table F-1.

Table F-1. Model for student-level treatment propensity

Variable name	Var index l	α_{1l}	α_{2l}	Renumbered index for outcome model
Volunteerism	1	+0.5	0	n/a
ClassSkipping	2	-1.5	-0.4	1
ImpWork	3	-2.0	-0.6	2
Mobility	4	-1.7	0	3
ParTalkPpolitics	5	-1.9	0	4
White	6	-0.5	0	n/a
Other adult	7	-0.4	0	n/a
NegativeJunkHours	8	-1.9	0	5
True baseline outcome	9	-0.02	+0.02	n/a

These were then converted to treatment propensities with the equation

$$\pi_{ij} = \frac{\exp\left(\mathbf{x}_{ij}\boldsymbol{\alpha}\right)}{1+\exp\left(\mathbf{x}_{ij}\boldsymbol{\alpha}\right)}$$

These were then averaged to the school level

$$\bar{\pi}_{i\bullet} = \frac{1}{80}\sum_{j=1}^{80}\pi_{ij}$$

and then stretched out as

$$\mathrm{MOS}_i = \frac{0.7\left(\bar{\pi}_{i\bullet} - \min_i\left\{\bar{\pi}_{i\bullet}\right\}\right)}{\max_i\left\{\bar{\pi}_{i\bullet}\right\} - \min_i\left\{\bar{\pi}_{i\bullet}\right\}} + 0.15,$$

with values outside the range of 0 to 1, shrunk back to the nearest boundary of the range.

These measures of size were then used in a systematic probability, proportionate-to-size sampling program that selected 500 of the 1,000 schools as treatment schools. The remainder were treated as control schools.

Students were ranked into five strata of π_{ij} with belonging to a particular stratum indicated by the binary flag $\Theta_{ij\mathrm{l}}$ for i=1 to 1,000; and j =1 to 80, and l =1 to 5.

Of the eight student-level covariates and eight school-level covariates, only five were used to generate the dependent variable. The renumbering of the covariates is shown in the last column of table F-1. The dependent variable (followup outcome) was then simulated as

$$y_{ij}^{8} = T_i \sum_{\mathrm{l}=1}^{5} \Theta_{ij\mathrm{l}} \delta_{\mathrm{l}} + \sum_{\mathrm{l}=1}^{5} \Theta_{ij\mathrm{l}} \beta_{\mathrm{l}} + \sum_{\mathrm{l}=1}^{5} (x_{ij\mathrm{l}} - \bar{x}_{i\bullet\mathrm{l}}) \beta_{5+\mathrm{l}} + \sum_{\mathrm{l}=1}^{5} \bar{x}_{i\bullet\mathrm{l}} \beta_{10+\mathrm{l}} +$$

$$\sum_{\mathrm{l}=1}^{5} \Theta_{ij\mathrm{l}} (y_{ij\mathrm{l}}^{7T} - \bar{y}_{i\bullet\mathrm{l}}^{7T}) \beta_{15+\mathrm{l}} + [\pi_{ij} - \bar{\pi}_{i\bullet}] \beta_{21} + \bar{\pi}_{i\bullet} \beta_{22} + (y_{ij}^{7T} - \bar{y}_{i\bullet}^{7T}) \beta_{23} + \bar{y}_{i\bullet}^{7T} \beta_{24} + u_i + e_{ij},$$

where the beta coefficients are given in table F-2,

$u_i \sim \mathrm{N}(0,9)$ and $e_{ij} \sim \mathrm{N}(0,16)$.

After generating the population, the same software was used to analyze it as was used for the actual analysis, as described in appendix E under the HLM section. Note that the true baseline outcomes (student and school level) were used to generate followup outcomes, but that manifest baseline outcomes (student and school level) were used in the model fitting to see if the procedure was sensitive to measurement error in the baseline outcome. Also note that true propensities were given to the model procedure rather than estimated propensities. It would have been a tougher test to force the modeling procedure to use estimated propensities, but the test was still fairly stringent.

Reviewing the test results, several features stand out. First and most important, the treatment effects are unbiasedly recovered with tight confidence intervals. (See first five data rows of table F-2.) This was, of course, the result that was desired.

Second, the model failed in sorting out the separate effects of the variables through the propensities. All of the coefficients for terms involving the propensities (both categorical and continuous) are extremely unstable. Because these are nuisance parameters, this instability is not much of an issue, but it does perhaps indicate that it is not very helpful to include the propensities in addition to the variables that predict the propensities. A separate run (not shown) was made omitting the terms for the propensities. The results of this run for the rest of the model were not appreciably affected despite the fact that more variables were used to generate the propensities than were used in the modeling. So it does not appear to matter very much whether the propensity scores are added to the model in addition to the variables that are important in the propensity model.

Third, the model produces highly biased estimates of the effects of both the student- and school-level covariates. All these estimates are strongly biased toward zero. Again, these are nuisance parameters of little interest in the evaluation. However, it does indicate that if one were interested in separately estimating the effects of student-level and school-level covariates, it does not work well to estimate the school-level covariates as the average of the student-level covariates and then include both in the model.

Table F-2. True and fitted models for followup outcome

Variable	Level/ index	True parameter	Estimated parameter	Standard error
Treatment effect by propensity stratum	1	-10.0	-10.2	0.2
	2	-5.0	-5.0	0.2
	3	0.0	-0.3	0.2
	4	10.0	10.0	0.2
	5	15.0	14.8	0.2
Propensity stratum	1	2.0	1.1	12.0
	2	0.5	0.2	12.0
	3	-0.2	-0.1	12.0
	4	-0.1	-0.2	12.0
	5	0.0	-0.1	12.0
Student-level covariate	1	-3.6	-0.72	0.04
	2	3.9	0.77	0.06
	3	-2.0	-0.41	0.04
	4	12.5	2.49	0.05
	5	5.2	1.04	0.05
School-level covariate	1	-2.9	-0.580	0.002
	2	2.2	0.436	0.002
	3	0.2	0.039	0.002
	4	2.5	0.499	0.002
	5	1.1	0.218	0.002
Interaction of baseline outcome with propensity stratum	1	0.0	-0.000	0.003
	2	0.0	-0.003	0.003
	3	0.0	-0.002	0.003
	4	0.0	-0.002	0.003
	5	0.0	0.0	N/A
Student-level propensity (continuous)		0.01	-5.0	24.0
School-level average propensity (continuous)		-0.2	-3.5	1.3
Student-level baseline outcome		0.68	0.66	0.03
School-level average baseline outcome		0.61	0.570	0.002
School-level random effect		9.0	9.9	0.5
Student-level random error		16.0	53.0	0.3

Fourth, the school-level random effect is well estimated, but the residual student-level random error is strongly overestimated. This positive bias in the residual variance is no doubt linked to the shrinkage bias in the fixed covariates. For some reason, the modeling procedure could not tease out the fixed effects of the covariates and as a result found larger residual error than truly existed. Again, the deficiencies in the modeling software have no impact on the evaluation report because the treatment effects were very well estimated.

Appendix G

Methodology for Analyzing Transcript Data

Transcript information consisting of report cards and standardized test scores was requested for all Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) and non-GEAR UP students participating in the national evaluation with parent consents obtained for these data. Information describing the students' eighth grade was analyzed for the national evaluation. To compare the student transcripts across schools, the national evaluation modified the Classification of Secondary School Courses (CSSC) developed by the National Center for Education Statistics (NCES) for use with middle schools. The CSSC was designed to describe course offerings in secondary education and to provide a coherent means for classifying these courses.[60] The middle school CSSC developed for the national evaluation appears in table G-1.

To aid in the classification of classes, school course catalogs and master schedules for classes were requested from schools. However, several schools were not able to provide course catalogs for their middle schools. When course catalogs were not available, information from interviews with guidance counselors and school administrative staff was used to interpret student transcripts.

The national evaluation based its method for analyzing middle school transcripts on two methods used by NCES for its high school transcript studies. These two methods are described in Supplemental Note 5: NAEP, NELS and HS&B Transcript Studies, which describes two methods used to classify academic challenge or difficulty of course work for the transcript studies: Academic Pipelines and Academic Rigor.[61]

G.1 Academic Pipelines

The term *pipelines* is used to note the normal sequencing of courses. The academic pipelines organize transcript data into four core subject areas: mathematics, science, English and foreign language. Each level within a subject area includes courses either of similar academic challenge and difficulty or at the same stage in the learning progression for that subject. Table G-2 shows the progression for each pipeline as defined for middle schools at the national evaluation. A student's placement in the pipeline is based on the highest level class completed within the subject area.

[60] See NCES' Web site regarding high school transcript studies sponsored by the U.S. Department of Education (http://nces.ed.gov/surveys/hst/courses.asp).

[61] See NCES-Supplemental Note 5: NAEP, NELS and HS&B Transcript Studies for a full description of the methods used for NCES' transcript studies.

Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
05	**AREA AND ETHNIC STUDIES**	**Summary of groups of instructional programs that describes the history, society, politics, culture and economics of either a particular geographic region or a particular subset of the population sharing common racial characteristics or common traits and customs.**			
05.01	**AREA STUDIES**	**Group of instructional programs that describes the history, society, politics, culture and economics of a particular geographic region.**			
05.0101	Area Studies	Survey of social, political, and cultural history; Africa, Latin America, China, Japan, Russia, India South Pacific, Europe	0	0	2
05.0102	American Studies, Basic	Contemporary issues, culture, domestic and international politics, print media resources, practical economic issues	0	0	2
05.0117	Comparative World Cultures	Comparative world culture study, geography, economics, political science, history and humanities	0	0	2
07	**BUSINESS AND OFFICE**	**Summary of groups of instructional programs that prepares individuals for a variety of activities in planning, organizing, directing and controlling all business office systems and procedures. Includes instruction in preparing, transcribing, systematizing and preserving written communications and records; preparing and analyzing financial records; collecting accounts and receiving and disbursing money; gathering, processing and distributing information and mail; operating office machines and electronic data processing equipment; storing, distributing and accounting for inventories of materials; operating telephone switchboards and delivering messages; and performing other business office duties.**			

[a] SE flag identifies whether a course is non-special education, self-contained special education or resource-level special education.

[b] LG is a language flag that identifies whether course is taught in English or a language other than English.

[c] LV is a level flag that identifies the academic level of the course (regular, honors, remedial, advanced placement or international baccalaureate).

Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
07.03	**BUSINESS DATA PROCESSING AND RELATED PROGRAMS**	**Group of instructional programs that prepares individuals to analyze and design data processing system configurations; write, test, monitor, debug and maintain data processing programs; and operate computers and peripheral and data entry equipment.**			
07.0361	Keyboarding	Alphabetic and numeric keyboarding using touch method	0	0	2
07.06	**SECRETARIAL AND RELATED PROGRAMS**	**Group of instructional programs that prepares individuals to record and transcribe communications and to provide administrative support.**			
07.0640	Word Processing - Middle School Level	Word processing software and equipment, word processing projects	0	0	2
07.0641	Word Processing 1	Word processing equipment, memory typewriters, integrated typing projects, transcription and communication skills	1	0	2
07.07	**TYPING, GENERAL OFFICE AND RELATED PROGRAMS**	**Group of instructional programs that prepares individuals to record, duplicate and retrieve data, including classifying, sorting and filing correspondence, records and other data. Includes instruction in shipping and receiving procedures, stock and inventory maintenance, and operation of office machines.**			
07.0711	Typewriting 1; Typewriting, Beginning; Typewriting, Business	Touch method mastery, speed building, interoffice correspondence, stroking techniques, manuscripts, letters	1	0	2
07.0714	Typing - Middle School Level	Touch method mastery, speed building, interoffice correspondence, correspondence projects	0	0	2
07.0721	Typewriting, Personal; Word Processing, Personal	Touch typewriting, letters; reports, footnotes, personal use	0	0	2

[a] SE flag identifies whether a course is non-special education, self-contained special education or resource-level special education.

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[c] LV is a level flag that identifies the academic level of the course (regular, honors, remedial, advanced placement or international baccalaureate).

Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
08	**MARKETING AND DISTRIBUTION**	**Summary of groups of instructional programs that prepares individuals for occupations directed toward the flow of industrial and consumer goods in channels of trade, or the provision of services to consumers or users. These programs are concerned with marketing, sales, distribution, merchandising and management, including ownership and management of enterprises engaged in marketing. Instructional programs prepare individuals to perform one or more of the marketing functions, such as selling, buying, pricing, promoting, financing, transporting, storing, market research and marketing management. In addition, instructional programs include varying emphases on technical knowledge of products or services marketed, related communication and computation skills and abilities and attitudes associated with human relations and private enterprise.**			
08.03	**ENTREPRENEURSHIP**	**Group of instructional programs that prepares individuals to perform marketing and management functions and tasks associated with owning and operating a business.**			
08.0312	Student Store - Middle Level	Operating school-sponsored student supply store	0	0	2
09	**COMMUNICATIONS**	**Summary of groups of instructional programs that describe the creation, transmission and evaluation of messages.**			

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[b] LG is a language flag that identifies whether course is taught in English or a language other than English.

[c] LV is a level flag that identifies the academic level of the course (regular, honors, remedial, advanced placement or international baccalaureate).

Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
09.04	**JOURNALISM (MASS COMMUNICATIONS)**	**Group of instructional programs that describes the principles and methods of gathering, processing, evaluating and disseminating through mass media, information about current events and issues.**			
09.0410	Journalism - Middle School Level	Newspaper study, newspaper production, news information gathering, proofreading, journalistic writing, production of school newspaper	0	0	2
09.0411	Journalism 1, Newspaper Production 1, News Writing 1, Writing for Publication	Newspaper study, newspaper production, news information gathering, proofreading, journalistic writing	1	0	2
09.0431	Literary Magazine	Advanced writing techniques, literary magazine publishing	0	0	2
09.0440	Yearbook Production - Middle School Level	Producing a publication, format, layout, photographs, yearbook design	0	0	2
09.0441	Yearbook Production 1, Publications 1	Producing a publication, format, layout, photographs, yearbook design	1	0	2
11	**COMPUTER AND INFORMATION**	**Summary of groups of instructional programs that describes the coding, processing and storage of data through repetitious and highly complex mathematical operations at high speed, and in accordance with strictly defined systems and procedures.**			
11.01	**COMPUTER AND INFORMATION SCIENCES, GENERAL**	**Group of instructional programs that generally describes the coding, processing and storage of data through repetitious and highly complex mathematical operations at high speed, and in accordance with strictly defined systems and procedures.**			
11.0110	Computer Literacy; Introduction to Computers - Middle School Level	Introductory survey of computer skills and awareness that includes using the Internet and World Wide Web, keyboarding, computer components, uses of computers in business and professions; computer-based skills	0	0	2

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[b] LG is a language flag that identifies whether course is taught in English or a language other than English.

[c] LV is a level flag that identifies the academic level of the course (regular, honors, remedial, advanced placement or international baccalaureate).

Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
11.0111	Computer Appreciation; Computer Literacy; Computers - Introduction	Survey course, nontechnical presentations, social implications of computers, computer familiarization	0	0	2
11.0130	Computer Applications - Middle School Level	Learning to use computer applications products for school-related projects	0	0	2
11.0131	Computer Applications, Computer Sciences 1	Emphasis on developing usable software, team approach	0	0	2
11.02	**COMPUTER PROGRAMMING**	**Group of instructional programs that describes the methods and procedures used in flow charting and writing instructions in computer language for the direction of computer operation in the solution of a problem.**			
11.0211	Computer Programming 1	Flow charts, algorithms, computer languages, machine operation, documentation	1	0	2
16	**FOREIGN LANGUAGES**	**Summary of groups of instructional programs that describes the structure and use of language common or indigenous to people of the same community or nation, the same geographical area or cultural traditions, including such features as sounds, literature, syntax, phonology, morphology, semantics, sentences, prose and verse, as well as development of skills and attitudes used in communicating and evaluating thoughts and feelings through oral and written language.**			
16.01	**FOREIGN LANGUAGES, MULTIPLE EMPHASIS**	**Group of instructional programs that describes the language, literature and culture of more than one specific group of people.**			
16.0110	Foreign Language, Exploratory - Middle School Level	Experiences in a variety of languages and cultures over a semester or year-long period	0	0	2
16.0111	Foreign Language, Exploratory	Language, culture, multiple groups	0	0	2

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[c] LV is a level flag that identifies the academic level of the course (regular, honors, remedial, advanced placement or international baccalaureate).

Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
16.0118	English as a Second Language 1, TESOL, ESOL, ESL - Beginning - Middle School Level	Basic English structure, limited vocabulary, English sounds, oral expression, American student life	0	1	2
16.0119	English as a Second Language 2, TESOL, ESOL, ESL - Intermediate -Middle School Level	Study of English language skills, increase language control, cultural information, composition skills	0	1	2
16.0120	English as a Second Language 3, TESOL, ESOL, ESL - Transition - Middle School Level	Greater English language ability, reading, composition, vocabulary building, role playing, American culture	0	1	2
16.0121	English as a Second Language 1, TESOL-Beginning	Basic English structure, limited vocabulary, English sounds, oral expression, American student life	1	1	2
16.0122	English as a Second Language 2, TESOL-Intermediate	English language skills, increase language control, cultural information, composition skills	2	1	2
16.0123	English as a Second Language 3, TESOL-Advanced	Greater English language ability, reading, composition, vocabulary building, role playing, American culture	2	1	2
16.0124	English as a Second Language, Skills Laboratory	Individualized instruction, non-native-English speakers, skill building	0	1	2
16.0125	Transitional English	Brush-up instruction to enable student to make the transition to regular English classes	0	1	2
16.05	**GERMANIC LANGUAGES**	**Group of instructional programs that describes the language, literature and culture of people whose native language belongs to the Germanic branch of Indo-European languages, languages such as German, Norwegian, Swedish, Danish and Yiddish are included in this category.**			
16.0500	Germanic Languages, Other		0	0	2
16.0511	German 7, German for Survival - Middle School Level	Vocabulary, grammar, culture study, dialogues	0	0	2
16.0512	German 8 - Middle School Level	Vocabulary, grammar, culture study, composition, dialogues	0	0	2
16.0513	German 1, German 9	Vocabulary, grammar, culture study, dialogues	1	0	2
16.0514	German 2, German 10, German 11	Vocabulary, grammar, culture study, composition and literature	2	0	2

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[b] LG is a language flag that identifies whether course is taught in English or a language other than English.

[c] LV is a level flag that identifies the academic level of the course (regular, honors, remedial, advanced placement or international baccalaureate).

Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
16.09	**ITALIC LANGUAGES**	**Group of instructional programs that describes the language, literature and culture of people whose native language belongs to the Italic branch of Indo-European languages; languages such as French, Italian, Latin, Portuguese and Spanish are included in this category**			
16.0900	Italic Languages, Other		0	0	2
16.0901	French 7 - Middle School Level	Basic vocabulary, grammar, culture study, reading, audio lingual approach	0	0	2
16.0902	French 8 - Middle School Level	Vocabulary, grammar, culture study, drill	0	0	2
16.0903	French 1, French 9	Vocabulary, grammar, culture study, dialogues	1	0	2
16.0904	French 2, French 10	Vocabulary, grammar, culture study, French family life and customs	2	0	2
16.0911	Italian 7 - Middle School Level	Basic vocabulary, grammar, culture study	0	0	2
16.0912	Italian 8 - Middle School Level	Vocabulary, grammar, culture study	0	0	2
16.0913	Italian 1, Italian 9	Vocabulary, grammar, culture study, dialogues, conversation	1	0	2
16.0914	Italian 2, Italian 10	Vocabulary, grammar, culture study, composition and literature, Italian and American cultural differences	2	0	2
16.0920	Latin 1, Latin 9, Latin Graffiti for Anybody	Classical Latin structure; prefixes, suffixes, root words; Virgil and Livy; legendary Rome; comparison of Roman and American life; Greek and Roman culture	1	0	2
16.0921	Latin 2	Grammar and syntax, Caesar, culture, classics in the original, comparison of Roman and American institutions	2	0	2
16.0931	Spanish 7, Spanish for Survival - Middle School Level	Basic vocabulary, grammar, culture study, travel information, money exchange, phrase books, oral skills	0	0	2
16.0932	Spanish 8 - Middle School Level	Vocabulary, grammar, culture study, time, weather, greetings	0	0	2
16.0933	Spanish 1, Spanish 9, Spanish, Beginning	Vocabulary, grammar, culture study, dialogues	1	0	2
16.0934	Spanish 2, Spanish 10	Vocabulary, grammar, culture study, composition and literature, Mexico and Spain, history and customs	2	0	2

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[c] LV is a level flag that identifies the academic level of the course (regular, honors, remedial, advanced placement or international baccalaureate).

Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
16.13	**NON-ENGLISH LANGUAGES FOR NATIVE SPEAKERS**				
16.1300	Non-English Languages for Native Speaker, Other		0	0	2
16.1311	Spanish for Native Speakers 1	Reading and writing of Spanish skills for Spanish speaking people, culture study	0	1	2
16.1312	Spanish for Native Speakers 2		0	1	2
16.1313	Spanish for Native Speakers 3		0	1	2
16.1361	French for Native Speakers 1		1	1	2
16.1362	French for Native Speakers 2		2	1	2
16.99	**FOREIGN LANGUAGES, OTHER**	**Group of instructional programs in foreign languages not described above.**			
16.9900	Foreign Languages, Other		0	0	2
17	**ALLIED HEALTH**	**Summary of groups of instructional programs that prepares individuals to assist qualified health professionals in providing diagnostic, therapeutic, preventive, restorative and rehabilitative services to patients in health care facilities, the home and the community.**			
17.02	**DIAGNOSTIC AND TREATMENT SERVICES**	**Group of instructional programs that prepares individuals to use equipment and medical materials for diagnostic and therapeutic purposes by learning to apply roentgen rays and radioactive substances; prepare and administer radioisotopes; operate electrocardiograph, electroencephalograph, respiratory or dialysis equipment; provide technical assistance before, during and after an operation; or render medical emergency treatment in a variety of situations that demand immediate care, such as heart attacks, childbirth, poisons, burns and shock.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
17.0211	First Aid; CPR and First Aid; Medical Emergencies; Emergency Medical Technician	Cardiopulmonary resuscitation, first aid, emergency care, simulated emergencies	0	0	2
17.0212	First Aid - Middle School Level	Red-Cross certification in First Aid and Safety	0	0	2
19	**HOME ECONOMICS**	**Summary of groups of instructional programs that describes the relationship between the physical, social, emotional and intellectual environment in and of the home and family, and development of individuals. Includes instruction in the natural and social sciences and humanities in the development of attitudes, knowledge and ability pertaining to clothing and textiles, consumer education, food and nutrition, home management, housing, human development and family studies and institutional management.**			
19.01	**HOME ECONOMICS, GENERAL**				
19.0100	Home Economics, Other General		0	0	2
19.99	**HOME ECONOMICS, OTHER**				
19.9900	Home Economics, Other		0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
20	**VOCATIONAL HOME ECONOMICS**	**Summary of groups of instructional programs that emphasizes the acquisition of competencies (including skills and job attitudes) needed for securing and holding paid employment at the entry and advanced levels and/or preparing for advancement in occupations that use home economics education knowledge and skills. Vocational home economics education instructional programs are developed from home economics education subject matter areas to meet the unique requirements of the specific vocations. Programs that prepare individuals for paid employment that include (1) services to individuals and families; (2) assistance to professional home economists and professionals in fields related to home economics in industry, business and public and private agencies; and (3) other services and/or assistance directly related to one or more of the home economics subject matter areas, offered in formal and/or informal settings combined with supervised laboratory and work experiences.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
20.01	**CONSUMER AND HOMEMAKING HOME ECONOMICS**	**Group of instructional programs that prepares individuals at all educational levels for the occupation of homemaking, emphasizing the acquisition of knowledge and the development of understanding attitudes, standards, values and skills relevant to individual and family life. Includes instruction in consumer education, food and nutrition, family living and parenthood education, child growth and development, housing and home management (including resource management), and clothing and textiles that emphasize the improvement of the home and quality of individual and family life and that enhance potential employability. These programs prepare individuals for the multiple roles of homemaker and wage earner.**			
20.0111	Home Economics 7, Comprehensive Consumer and Homemaking 7, Homemaking 7 - Middle School Level	Basic principles, foods and nutrition, clothing and textiles, consumer education, child care	0	0	2
20.0112	Home Economics 8, Comprehensive Consumer and Homemaking, Homemaking 8 - Middle School Level	Basic principles and concepts, clothing and textiles, parenting, interpersonal relationships, consumer education, nutrition and foods	0	0	2
20.0119	Adult Roles and Functions, Independent Living: Survival Skills, Singles Survival - Middle School Level	Basic principles and concepts, clothing and textiles, parenting, interpersonal relationships, consumer education, nutrition and foods	0	0	2
20.0121	Child Development 8 Middle School Level	Care of small children, safety, play, creative activity, dressing and feeding	0	0	2
20.0122	Child Development 1	Developmental stages, child interactions, dressing and feeding children	1	0	2
20.0127	Adolescent Development - Middle School Level	Physical, social and emotional development of adolescents, understanding of students' own state in life, adolescent decision-making skills	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
20.0131	Clothing 7 - Middle School Level	Project sewing, hand sewing, use of sewing machine	0	0	2
20.0132	Clothing 8 - Middle School Level	Project sewing, introducing clothing construction	1	0	2
20.0161	Family Health 1, Family Nursing	Accident prevention, home nursing techniques, diets, community health resources	1	0	2
20.0170	Family Relations, Family Sociology, Family Living - Middle School Level	Peer relations, family relations, premarital concerns, parenthood, child abuse, divorce	0	0	2
20.0171	Family Relations, Family Sociology, Family Living	Peer relations, family relations, premarital concerns, parenthood, child abuse, divorce	0	0	2
20.0172	Marriage Society and Change Lifestyles	Marriage issues, marriage partner choice, social trends, male and female relations	0	0	2
20.0173	Parenthood, Parent Education, Parenting	Parenthood preparation, prenatal care, childbirth, infancy	0	0	2
20.0174	Parenthood, Parent Education, Parenting - Middle School Level	Parenthood preparation, prenatal care, childbirth, infancy	0	0	2
20.0181	Foods and Nutrition 7 - Middle School Level	Introduction to nutrition, introduction to basic cooking principles	0	0	2
20.0182	Foods and Nutrition 8 - Middle School Level	Nutrition, health, preparation of simple meals	0	0	2
20.0188	Nutrition, Fitness Foods	Eating patterns, nutrition science, consumer aspects, world hunger, fitness foods	0	0	2
21	**INDUSTRIAL ARTS**	**Summary of groups of instructional programs that provides individuals with knowledge that (1) pertains to the body of related subject matter, or related courses, organized for the development of understanding about all aspects of industry and technology, including learning experiences involving activities like experimenting, designating, constructing, evaluating and using tools, machines, materials or processes; and (2) assists individuals in making informed and meaningful occupational choices or that prepares them for entry into advanced trade and industrial or technical education programs.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
21.01	**INDUSTRIAL ARTS**	**Group of instructional programs that provides individuals with knowledge that (1) pertains to the body of related subject matter, or related courses, organized for the development of understanding about aspects of industry and technology, including learning experiences involving activities such as experimenting, designating, constructing, evaluating and using tools, materials and processes; and (2) assists individuals in making informed and meaningful occupational choices or that prepares them for entry into advanced trade and industrial or technical education programs.**			
21.0100	Industrial Arts, Other		0	0	2
21.0101	Industrial Arts 7 - Middle School Level	Introductory course, mechanical drawing, woodworking, ceramics, tool familiarization	0	0	2
21.0102	Industrial Arts 8 - Middle School Level	Introductory course, electricity, power mechanics, metalwork, tool familiarization, wood working	0	0	2
21.0103	Industrial Arts 1, Shop 1, Exploratory, Shop, General, Industrial Materials 1, Industrial Arts Orientation, Industrial Crafts 1	Basic skills, woods, metals, plastics, occupational orientation	0	0	2
21.0127	Introduction to Technology, Technology Education	General course on technology, including computers, computer-related and computer-controlled technology	0	0	2
21.0128	Introduction to Technology, Technology Education - Middle School Level	General course on technology, including computers, computer-related and computer controlled technology	0	0	2
22	**LAW**	**Summary of groups of instructional programs that describes the principles and procedures, in the form of legislation, decisions, regulations and orders, developed and enforced by institutions of government to maintain social order.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
22.01	**LAW**	**Group of instructional programs that describes the principles and procedures, in the form of legislation, decisions, regulations and orders developed and enforced by institutions of government in order to maintain social order.**			
22.0100	Law, Other		0	0	2
23	**LETTERS**	**Summary of groups of instructional programs that describes sounds, literature, syntax, phonology, semantics, sentences, prose and verse, as well as the development of skills and attitudes used in communicating and evaluating thought and feelings through oral and written language.**			
23.01	**ENGLISH, GENERAL**	**Group of instructional programs that generally describes the skills and techniques essential to learning the English language.**			
23.0101	English 7 - Middle School Level	Reading, writing, listening, speaking skills; literature appreciation; vocabulary study; mechanics; usage; spelling	0	0	2
23.0102	English 7, Honors; English 7 - Above Grade Level - Middle School Level	Literature and composition; reading, writing, listening, speaking skills; text preview; study skills	0	0	1
23.0103	English 8 - Below Grade Level - Middle School Level	Literature and composition; reading, writing, listening, speaking skills	0	0	3
23.0104	English 8, English 8 - Average - Middle School Level	Reading, writing, listening, speaking skills; usage; sentence structure; literature appreciation	0	0	2
23.0105	English 8, Honors, English 8 - Above Grade Level - Middle School Level	Literature appreciation; in-depth study of reading writing, speaking, listening skills	0	0	1
23.0106	English 1 - Below Grade Level; English 9 - Basic; Communication Skills, Non College	Grammar study; literature survey; reading, writing speaking, listening skills	0	0	3

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
23.0107	English 1; English 9, Average	Grade-level English; genres; reading, writing, listening, speaking skills	0	0	2
23.0108	English 1, Honors; English 9, Honors	Above grade-level English; in-depth study of reading, writing, speaking, listening skills; general study	0	0	1
23.04	**COMPOSITION**	**Group of instructional programs that describes the principles and techniques of selecting, combining, arranging and developing ideas and expressing them in appropriate written forms such as narration, exposition or persuasion.**			
23.0400	Composition, Other		0	0	2
23.0401	Composition, Expository, Writing Practice, Contemporary Composition, Expository Writing	Basic composition structure, models, skill improvement	0	0	2
23.0402	Writing Laboratory, Writing Skills Workshop, Composition, Advanced Computer Assisted Writing Instruction	Intensive practice, writing skills, laboratory setting	0	0	2
23.0404	Vocabulary, Fun With Words, College Vocabulary Skill Building, Word Power	Dictionary use, prefixes and suffixes, spelling	0	0	2
23.0405	Spelling	Study of spelling words, assigned lists, self-identified lists	0	0	2
23.0406	Grammar 7, Language Structure 7 - Middle School Level	Traditional grammar, transformational grammar, structural linguistics	0	0	2
23.0407	Grammar 8, Language Structure 8 - Middle School Level	Traditional grammar, transformational grammar, structural linguistics	0	0	2
23.0408	Grammar 9, Language Structure 9	Traditional grammar, transformational grammar, structural linguistics	0	0	2
23.0413	Handwriting, Penmanship	Techniques for and exercises in handwriting	0	0	2
23.0414	Interpersonal Communication	Role playing, experiments, games, discussions; verbal, nonverbal behavior; composition suggestions	0	0	2
23.0415	Word Study - Remedial	Vocabulary improvement, pronunciation, prefixes, root meanings	0	0	3

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
23.12	**LANGUAGE ARTS, READING**				
23.1201	Reading Development 7, Reading Improvement, Remedial Reading, Reading Skills, Title 1 Reading, Reading Fundamentals, Corrective Reading - Middle School Level	Instruction for students with reading difficulties, skill acquisition, reading techniques, below-grade-level remediation, word attack, comprehension	0	0	3
23.1202	Reading Development 8 - Middle School Level	Reading difficulties, continued skill building, student needs diagnosis, survival reading, critical thinking skills, study habits	0	0	3
23.1211	Reading Development 1, Reading Improvement, Remedial Reading, Reading Skills, Chapter 1 Reading, Reading Fundamentals, Corrective Reading	Instruction for students with reading difficulties, skill acquisition, reading techniques, below-grade level remediation, word attack skills, comprehension	1	0	3
23.1212	Reading Development 2	Reading difficulties, continued skill building, student needs diagnosis, survival reading, critical thinking skills, study habits	2	0	3
23.13	**LANGUAGE ARTS, BASIC SKILLS**				
23.1311	Functional English 1, Correlated Language Arts 1	Integrated language arts course designed to develop reading and writing skills; survival and job-oriented skills; emphasis on short reading selections, vocabulary from context, and writing paragraphs	1	0	3
24	**LIBERAL AND GENERAL STUDIES**	**Summary of groups of instructional programs that describes the foundation necessary for understanding self and society through an appreciation of the concerns of civilization and our common heritage.**			
24.01	**LIBERAL AND GENERAL STUDIES**	**Group of instructional programs that describes the foundation necessary for understanding self and society through an appreciation of the concerns of civilization and our common heritage.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
24.0110	Liberal Studies - Middle School Level	Integrated fields of art, music, literature, philosophy	0	0	2
24.0140	Gifted and Talented Program - Middle School Level	Academic and creative education for gifted students, enrichment-subject unspecified or broad range of subjects	0	0	2
24.0141	Gifted and Talented Program	Academic and creative education for gifted students, enrichment-subject unspecified or broad range of subjects	0	0	1
25	**LIBRARY AND ARCHIVAL SCIENCES**	**Summary of groups of instructional programs that describes the knowledge and skills required to develop, organize, store, retrieve, administer, and facilitate the use of collections of information in such formats as books, documents, manuscripts, machine-readable databases, filmed and recorded materials, specimens, and artifacts.**			
25.01	**LIBRARY AND ARCHIVAL SCIENCES, GENERAL**	**Group of instructional programs that generally describes the knowledge and skills required to develop, organize, store, retrieve, administer, and facilitate the use of collections of information in such formats as books, documents, manuscripts, machine-readable databases, filmed and recorded materials, specimens, and artifacts.**			
25.0110	Library Science, Library Skills - Middle School Level	Library skills development, card catalog, Dewey decimal system, audiovisual equipment, filing	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
25.03	**LIBRARY ASSISTING**	**Group of instructional programs that prepares individuals to assist professional librarians. Includes instruction in principles, systems, processes and procedures in library operation; library resources and services; processes of acquisition, cataloging, storage and display systems; discovery and retrieval of requested materials; management of books, periodicals and other printed materials; technological media such as audiovisual and education equipment; public services such as library loans; and data-processing implications for automation of records in libraries.**			
25.0310	Library Assistant, Library Aide - Middle School Level	Library procedures, school service, audiovisual equipment operation	0	0	2
25.0311	Library Assistant, Library Aide	Library procedures, school service, audiovisual equipment operation	0	0	2
26	**LIFE SCIENCES**	**Summary of groups of instructional programs that describes the systematic study of living organisms.**			
26.01	**BIOLOGY, GENERAL**	**Group of instructional programs that generally describes life forms, including the structure, function, reproduction, growth, heredity, evolution, behavior and distribution of living organisms.**			
26.0111	Science 7, Life Sciences 7 - Middle School Level	Animals, plants, cells; human body systems; environment; continuity	0	0	2
26.0112	Science 7, Life Sciences 7 - Honors - Middle School Level	Animals; plants; cells; human body systems; environment; continuity	0	0	1
26.0121	Biology, Basic 1; Biology, Essentials; Biology, Patterns; Life Science; Natural Science; Biology, Functional	Basic course, organism level, simplified approach, human body, functioning plants, functioning animals	1	0	2
26.0122	Biology, Basic 2	Second-level basic course in biology for students who need a more simplified approach	2	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
26.0131	Biology, General 1; Biology, Biology, Regents; Biology, Introductory	Standard course, cellular level, community level, ecological relations, evolutionary development	1	0	2
26.0141	Biology, Honors 1	College preparatory course, quantitative approach, biosphere, physiology, heredity, molecular level	1	0	1
27	**MATHEMATICS**	**Summary of groups of instructional programs that describes the sciences of logical symbolic language and their applications.**			
27.01	**MATHEMATICS, GENERAL**	**Group of instructional programs that generally describes the sciences of logical symbolic language and their applications.**			
27.0101	Mathematics 7 - Middle School Level	Basic computational skills, problem solving techniques, fractions, decimals, measurement systems, tables and graphs	0	0	2
27.0102	Mathematics 7, Accelerate - Middle School Level	Junior high mathematics, 2 years work, increased pace, pre-algebra topics	0	0	2
27.0103	Mathematics 8 - Middle School Level	Arithmetic, metric system, real numbers, negative numbers, ratio and proportion, exponents	0	0	2
27.0104	Mathematics 8, Accelerated - Middle School Level	Junior high mathematics, pre-algebra topics, increased pace	0	0	2
27.0105	Unused Code		0	0	2
27.0106	Mathematics 1, General; Mathematics 1, Applied; Computational Skills 1	Mathematical applications, whole numbers, fractions, decimals, informal geometry, statistics	0	0	2
27.04	**PURE MATHEMATICS**	**Group of instructional programs that describes number, form, arrangement and associated relationships, using rigorously defined literal numerical and operational symbols.**			
27.0401	Pre-algebra; Algebra Skills; Algebra, Principles; Algebra, Introduction; Algebra, Basic; Algebra, Practical	Exploratory algebra, practical applications, graphing, exponents, negative integers, simple equations	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
27.0402	Algebra 1, Part 1	Algebra 1 over 2 years, reduced pace, first half of algebra 1	1	0	2
27.0403	Algebra 1, Part 2	Algebra 1 over 2 years, reduced pace, second half of algebra 1	2	0	2
27.0404	Algebra 1; Algebra, Elementary	Graphs, algebraic equations, radicals, linear equations, algebraic proofs, mathematical symbols	1	0	2
27.0405	Algebra 2; Algebra, Intermediate	Polynomials, irrational numbers, verbal problems, logarithms, binomial theorem, trigonometry	2	0	2
27.0421	Mathematics 1, Unified	Unified approach, logic, algebra, geometry, trigonometry, probability	1	0	2
27.0427	Unified Mathematics 1, Part 1	Unified mathematics taught over 2 years, first year full credit	1	0	2
27.0428	Unified Mathematics 1, Part 2	Unified mathematics taught over 2 years, second year full credit	2	0	2
27.06	**BASIC SKILLS MATHEMATICS**				
27.0601	Basic Mathematics 1; Mathematics Fundamentals; Developmental Mathematics; Arithmetic Review; Mathematics, Remedial; Mathematics, Essentials; Mathematics Laboratory; Competency Mathematics; Mathematics, Basic	Terminal course; computational skills; remedial work; simplified approach, decimals; percentages; arithmetic review; real-life applications; fractions, decimals, and percentages; competency test preparation	0	0	3
30	**MULTI- AND INTERDISCIPLINARY STUDIES**	**Summary of groups of instructional programs, the components of which, derive from two or more separate conventional academic instructional programs.**			
30.01	**BIOLOGICAL AND PHYSICAL SCIENCES**	**Group of instructional programs that describes either a general synthesis of one or more of the biological and physical sciences (for example, applied science or general science), or a specialization that draws from the biological and physical sciences (for example, environmental science and studies).**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
30.0101	Science, Unified 7; Science, Basic; Science, General; Science Ideas; Science Workshop; Science, Applied; Physical and Life Science - Middle School Level	Survey course, life sciences, chemistry, physics, multidisciplinary approach, simplified approach	0	0	2
30.0102	Science, Unified 7 - Honors; Science, Basic; Science, General; Science Ideas; Science Workshop; Science, Applied; Physical and Life Science, Honors - Middle School Level	Survey course, life sciences, chemistry, physics, multidisciplinary approach, simplified approach	0	0	1
30.0103	Science, Unified 8; Science, Basic; Science, General; Science Ideas; Science Workshop; Science, Applied; Physical and Life Science Middle School Level	Survey course, life sciences, chemistry, physics, multidisciplinary approach, simplified approach	0	0	2
30.0104	Science, Unified 8; - Honors; Science, Basic; Science, General; Science Ideas; Science Workshop; Science, Applied; Physical and Life Science, Honors - Middle Level	Survey course, life sciences, chemistry, physics, multidisciplinary approach, simplified approach	0	0	1
30.0111	Science, Unified; Science, Basic; Science, General; Science Ideas; Science Workshop; Science, Applied; Physical and Life Science	Survey course, life sciences, chemistry, physics, multidisciplinary approach, simplified approach	0	0	2
30.0112	College Pre-Science Skills	Problem solving, laboratory techniques, scientific reading and writing, college preparatory skills and concepts	0	0	2
30.0130	Outdoor Education - Middle School Level	Resident camp, environmental study, science field experiences, interdisciplinary approach	0	0	2
30.0131	Outdoor Education	Resident camp, environmental study, science field experiences, interdisciplinary approach	0	0	2
30.04	**HUMANITIES AND SOCIAL SCIENCES**	**Group of instructional programs that describes either a general synthesis of one or more of the humanities and social sciences (e.g., humanities), or a specialization that draws from the humanities and social sciences (for example, behavioral science, classical civilization or human development).**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
30.0401	Humanities, People and Their Culture, CORE - Middle School Level	Problem solving, laboratory techniques, scientific reading and writing; college preparatory skills and concepts	0	0	2
30.0411	Humanities, People and Their Culture	Integration of history and literature; combination of literature, music and art of a selected period; interdisciplinary study of social sciences, anthropology, geography, history, psychology	0	0	2
30.06	**SYSTEMS SCIENCE**	**Group of instructional programs that describes a multidisciplinary approach to the study of innate complexity that by synthesizing systemic findings from the natural, social, technological, behavioral and life sciences and other specialized fields brings holistic perspectives to the solution of problems within a general context.**			
30.0621	Environmental Science, Environmental Issues, Human Communities, People Technology and the Environment	Water pollution, conservation, forestry, air pollution	0	0	2
30.07	**WOMEN'S STUDIES**	**Group of instructional programs that describes the history, society, politics, culture and economics of women.**			
30.0711	Women's Studies; Women in American Society	Role of American woman; colonial period to the present; women in art, literature, business, politics, education, science	0	0	2
31	**PARKS AND RECREATION**	**Summary of groups of instructional programs that describes the principles and procedures of providing parks and recreational facilities and services for the benefit of the general public.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
31.01	**PARKS AND RECREATION, GENERAL**	**Group of instructional programs that generally describes the principles and procedures of providing parks and recreational facilities and services for the benefit of the general public.**			
31.0111	Recreation Aide	Recreation program assistance	0	0	2
32	**BASIC SKILLS**	**Summary of groups of instructional programs that describes the fundamental career and employment skills a person is normally thought to need in order to function productively in society.**			
32.01	**BASIC SKILLS, CAREERS AND EMPLOYMENT (FORMERLY BASIC SKILLS OTHER)**	**Group of instructional programs that describes the fundamental career and employment skills a person is normally thought to need in order to function in society.**			
32.0102	Career Preparation, So You Want A Job, Business Opportunities, Job Entry Training, College and Career Planning, Guidance	Job application, interviewing, promotional opportunities, work ethic, test taking, educational requirements	0	0	2
32.0103	Career Exploration; Vocations, Introduction; Career Development; Work Observational Experience; Career Education; Occupational Exploratory Program	Business community exploration, career observation unpaid experiences, site visits, career planning	0	0	2
32.02	**BASIC SKILLS, GENERAL**				
32.0200	Basic Skills, General, Other		0	0	2
32.0201	Resource Room (Non Special Ed)		0	0	2
32.0202	Resource Room (Non Special Ed) - Middle School Level		0	0	2
32.0210	Study Dynamics - Middle School Level	Study skill improvement; note-taking; research, paper preparation	0	0	2
32.0211	Study Dynamics	Study skill improvement; note-taking; research paper preparation	0	0	2
32.0230	Individualized Academic Program - Middle School Level	Dropout prevention, college preparation, tutorial assistance (e.g., project AVID)	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
32.0231	Individualized Academic Program	Dropout prevention, college preparation, tutorial assistance (e.g., project AVID)	0	0	2
33	**CITIZENSHIP AND CIVIC ACTIVITIES**	**Summary of groups of instructional programs that describes how individuals can facilitate governmental functions and contribute to the well-being of their community through civic action.**			
33.01	**CITIZENSHIP AND CIVIC ACTIVITIES**	**Group of instructional programs that describes how individuals can facilitate governmental functions and contribute to the well-being of their community through civic action.**			
33.0111	Student Assistant, Teacher Assistant, Laboratory Assistant, Teacher Cadet, Office Aide, Instructional Assistant, Clerical Aide, School Service	School service, background enrichment, teacher support, bulletin board maintenance	0	0	2
33.0121	Pep Squad, Cheerleading	Rallies, competitions, athletic event performance	0	0	2
33.0131	Student Government; Assembly	School communications, school activities, class representation	0	0	2
33.0141	Tutoring, Peer Tutoring	Practical tutoring experience, assisting classmates, class environment development, materials production	0	0	2
33.0151	Community Service, Community Involvement	Volunteer program, community agencies, experiential learning	0	0	2
34	**HEALTH-RELATED ACTIVITIES**	**Summary of groups of instructional programs that describes the promotion of the health of individuals.**			
34.01	**HEALTH-RELATED ACTIVITIES**	**Summary of groups of instructional programs that describes the promotion of the health of individuals.**			
34.0109	Physical Education 7 - Middle School Level		0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
34.0111	Physical and Health Education 7, Physical Education 7 - Middle School Level	Health attitudes, safety, sportsmanship, team play	0	0	2
34.0112	Physical and Health Education 8, Physical Education 8 - Middle School Level	Health attitudes, safety, sportsmanship, team play	0	0	2
34.0113	Physical and Health Education 9, Physical Education 9, Health Safety and Physical Education 9	Dual sports, team sports, skill mastery, game rules	0	0	2
34.0121	Adaptive Physical Education (Multihandicapped)/(Nonregular program)	Nonregular program, muscle imbalance, posture problems, breathing problems, motor disabilities	0	0	2
34.0131	Health 7, Health Science 7 - Middle School Level	Body care, disease prevention, body functions, narcotics, safety practices	0	0	2
34.0132	Health 8, Health Science 8 - Middle School Level	Body care, disease prevention, body functions, narcotics, safety practices	0	0	2
34.0133	Health 9, Health Science 9	Body care, disease prevention, body functions, narcotics, safety practices	0	0	2
34.0141	Drugs Alcohol and Tobacco	Drug education, narcotics, alcoholism, tobacco use	0	0	2
34.0171	Life Saving	Swimming rescues, equipment rescues, respiratory emergencies	0	0	2
34.0181	Safety	Safety practices, daily living situation	0	0	2
34.0191	Sex Education, Human Sexuality and Reproduction	Human physiology, reproduction, family planning	0	0	2
35	**INTERPERSONAL SKILLS**	**Summary of groups of instructional programs that describes how to effectively live and interact with others, social organization, being a congenial friend and companion, establishing courses of action for others and influencing others to follow.**			
35.01	**INTERPERSONAL SKILLS**				
35.0100	Interpersonal Skills, Other		0	0	2
35.0111	Interpersonal Relationships	Personal roles, individuals in society	0	0	2
35.0112	Human Relations, Interpersonal Relationships; Peer Relationships - Middle School Level	Understanding relationships and peer group influences, dealing with peer pressure, adolescent relationships	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
35.0121	Building Human Relationship	Values clarification, communication skills, meeting individual and shared goals and needs	0	0	2
35.0131	Peer Counseling	Students serve as leaders with individuals or in peer counseling groups to work on problem solving, mutual support, values clarification, counseling, networking	0	0	2
35.0140	Dropout Prevention - Middle School Level	Communities and cities in schools, other intervention programs	0	0	2
35.0141	Dropout Prevention	Communities and cities in schools	0	0	2
36	**LEISURE AND RECREATIONAL ACTIVITIES**	**Summary of groups of instructional programs that describes the development of an appreciation for and competency in recreational and leisure-related activities.**			
36.01	**LEISURE AND RECREATIONAL ACTIVITIES**	**Group of instructional programs that describes the development of an appreciation for and competency in recreational and leisure-related activities.**			
36.0192	Experiential Outdoor Education	Outdoor leadership training, using the urban community or wilderness as a classroom for various subject area instruction that includes programs like Outdoor School, Outward Bound	0	0	2
36.0193	Experiential Outdoor Education - Middle School Level	Outdoor leadership training, using the urban community or wilderness as a classroom for various subject area instruction that includes programs like Outdoor School, Outward Bound	0	0	2
37	**PERSONAL AWARENESS**	**Summary of groups of instructional programs that describes a person's self-perception, values, attitudes, beliefs and emotional responses.**			
37.01	**PERSONAL AWARENESS**	**Group of instructional programs that describes a person's self-perception, values, attitudes, beliefs and emotional responses.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
37.0111	Personal Development Techniques, Personal Grooming and Fashion, Personal Management, Personal Culture, Youth and Decisions, Teens Today, Human Studies, Self-Development	Personal awareness, beauty techniques, self-confidence, goal setting, time management	0	0	2
37.0121	Coping with Personal Problems, Personal Adjustment	Adjusting to problems, divorce, stress, test anxiety, sexual relations	0	0	2
37.0131	Self-Perception, Self-Image	Building a positive self image, barriers	0	0	2
38	**PHILOSOPHY AND RELIGION**	**Summary of groups of instructional programs that describes the critical examination of the categories for describing reality, the nature and contexts of human experience, the methodology of rational inquiry and criteria of practice philosophy; and the investigation of organized forms, beliefs and practices related to eternal principles or transcendent spiritual entities (religion).**			
38.02	**RELIGION**	**Group of instructional programs that describes the origin, histories, organized forms, beliefs, worship and practices of specific religions.**			
38.0203	Scripture; Testaments, Old and New; Christian and Hebrew Scriptures; Bible Studies	Life of Christ; Old Testament and New Testament, analysis and interpretation	0	0	2
40	**PHYSICAL SCIENCES**	**Summary of instructional programs that describes inanimate objects, processes of matter, energy and associated phenomena.**			
40.01	**PHYSICAL SCIENCES, GENERAL**	**Group of instructional programs that generally describes the major topics, concepts, processes and interrelationships of nonliving matter and associated phenomena.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
40.0111	Science 8, Physical Science 8 - Middle School Level	Basic physical science, chemistry, physics, laboratory experimentation	0	0	2
40.0112	Science 8, Physical Science 8 - Middle School Level	Basic physical science, chemistry, physics, laboratory experimentation	0	0	2
40.0121	Physical Science, Science 9, Chemistry and Physics	Introductory course, basic scientific principles, chemistry, physics, structure of matter, scientific observation	0	0	2
40.06	**GEOLOGICAL SCIENCES**	**Group of instructional programs that describes the history of the earth and other celestial bodies especially as recorded in rocks.**			
40.0611	Earth Science; Earth Science 9; Earth Science, General	Survey course, geology, astronomy, meteorology, fossils	0	0	2
45	**SOCIAL SCIENCES**	**Summary of groups of instructional programs that describes the substantive portions of behavior, past and present activities, interactions, and, organizations of people associated together for religious, benevolent, cultural, scientific, political, patriotic or other purposes.**			
45.01	**SOCIAL SCIENCES, GENERAL**	**Group of instructional programs that generally describes the major principles and perspectives of the social sciences.**			
45.0111	Social Science, Introduction; Social Studies, Introduction; Social Studies Skills	Social science branches, research methods, social studies preparation	0	0	2
45.07	**GEOGRAPHY**	**Group of instructional programs that describes the earth and its life; the description of land, sea and air; and the distribution of plant and animal life, including human beings and industries.**			
45.0701	Geography 8 - Middle School Level	United States and world geography	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
45.0704	World Geography, Cultural and Physical Geography	Major world geographic areas; interrelationships between people and habitat; political, social, cultural, and economic geography	0	0	2
45.0709	Human and Cultural Geography, Man and His Environment	Cultural groups and their geographical locations	0	0	2
45.08	**HISTORY**	**Group of instructional programs that describes the past, including the recording, gathering, criticizing, synthesizing and interpreting evidence about past events.**			
45.0801	History and Geography 7 - Middle School Level	Survey of world history and world geography, map reading, state history and cultural development	0	0	2
45.0802	Our Cultural Heritage 7 - Middle School Level	Study of United States history, exploration, colonization, early United States government	0	0	2
45.0803	Social Studies 7, Honors - Middle School Level	Chronological United States history, presidential administrations, political movements, independent study, research projects	0	0	2
45.0804	United States History 8 - Middle School Level	Nineteenth and 20th century history, current problems	0	0	2
45.0805	Social Studies 8 - Middle School Level	Chronological United States history, presidential administrations, political movements, constitution foreign policy trends	0	0	2
45.0806	Social Studies 8, Honors - Middle School Level	Chronological United States history, presidential administrations, political movements, constitution foreign policy trends	0	0	2
45.0807	United States History, State and Local; State History and Government; State History	History, culture, contemporary issues, government institutions	0	0	2
45.10	**POLITICAL SCIENCE AND GOVERNMENT**	**Group of instructional programs that describes the description and analysis of political institutions and processes, including the origin, development, geographical units, forms, sources of authority, powers, purposes, functions and operations of government.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
45.1001	Civics, Community Civics	Citizenship responsibilities and government, introduction; federal, state and local government; organization and function	0	0	2
45.1002	State and Local Government	Functions of government, state and local level	0	0	2
45.1003	Government, Basic; Government and Contemporary American Problems	Study of United States voting procedures; court operations; local, state and national lawmaking	0	0	2
50	**VISUAL AND PERFORMING ARTS**	**Group of instructional programs that generally describes the historic development, aesthetic qualities and creative processes of two or more of the visual and performing arts.**			
50.01	**VISUAL AND PERFORMING ARTS, GENERAL**	**Group of instructional programs that generally describes the historic development, aesthetic qualities and creative processes of two or more of the visual and performing arts.**			
50.0110	Aesthetics, Art, Music, Drama, Dance Survey - Middle Level	Interrelated arts	0	0	2
50.0111	Aesthetics, Art, Music, Drama, Dance Survey	Enrichment course, interrelated arts	0	0	2
50.02	**CRAFTS**	**Group of instructional programs that describes how to increase one's skills to fashion objects in a specialized area of handwork.**			
50.0211	Crafts 7 - Middle School Level	Fabrics, fiber, paper leather; decorations; creative expression	0	0	2
50.0212	Crafts 8 - Middle School Level	Fabrics, fiber, paper, leather; decorations; creative expression	0	0	2
50.0213	Crafts 9; Creative Crafts 9	Fiber, fabric, leather, metal, wood, plastic; weaving; macramé; woodcarving; jewelry; enameling; stitchery	1	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
50.0261	Ceramics 7	Slab, coil, modeling, sculpting; beginning wheel throwing techniques; glazing, firing	0	0	2
50.0262	Ceramics 8	Clay objects; ceramic ware; forming; firing; glazing	0	0	2
50.03	**DANCE**	**Group of instructional programs that describes the performance and choreography of various kinds of dances, including but not limited to ballet, modern, jazz, ethnic and folk dance.**			
50.0311	Modern Dance for Beginners 9, Rhythm and Dance 9	Locomotor warm-ups, class improvisations, history of dance, theories of movement, methods of choreography	1	0	2
50.04	**DESIGN**	**Group of instructional programs that describes the theories, techniques and creative processes for more effectively performing the function of communicating feelings, ideas and information through use of materials and media to create two-or three-dimensional visual affects.**			
50.0411	Graphic Design	Art vocations, basic lettering styles	0	0	2
50.05	**DRAMATIC ARTS**	**Group of instructional programs that describes the development, theory and processes of creating live performances through human expressive modalities.**			
50.0511	Stagecraft 9; Acting Fundamentals 9; Theater Arts 1	Set design, construction, improvisation, lighting	0	0	2
50.07	**FINE ARTS**	**Group of instructional programs that describes the organization of materials and media for two-or three-dimensional visual affects that communicate ideas and express emotion and are considered primarily in relation to aesthetic criteria of judgments of beauty or meaningfulness.**			

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
50.0701	Fine Arts 7, Art 7 - Middle School Level	Development of sculpture, architecture, printing; color; shapes; space; texture	0	0	2
50.0702	Fine Arts 8, Art 8 - Middle School Level	Principles of design and elements of art	0	0	2
50.0704	Art 1, Art 9	Principles of design and elements of art	1	0	2
50.09	**MUSIC**	**Group of instructional programs that describes the art and science of combining sounds of various timbre in harmonic, rhythmic or melodic forms which are artistically expressive.**			
50.0901	Music 7 Music Introduction - Middle School Level	Rhythm, melody, harmony introduction, ear training	0	0	2
50.0902	Music 8 - Middle School Level	Rhythm, melody, harmony introduction, ear training	0	0	2
50.0903	Band 7 - Middle School Level	Training skills, preparatory work, instrumental skill development	0	0	2
50.0904	Band 7 - Advanced Middle School Level	Marching, concert band	0	0	2
50.0905	Band 8 - Middle School Level	Training for band	0	0	2
50.0906	Band 8 Advanced - Middle School Level	Phrasing, individual technique, sound production	0	0	2
50.0907	Band 9 - Middle School Level	Training for beginning band	0	0	2
50.0908	Band 9 Advanced - Middle School Level	Sight reading ability, instrumental proficiency, performance by audition	0	0	2
50.0912	Orchestra 7 - Middle School Level	Music reading and performance, skill development	0	0	2
50.0913	Orchestra 7 Advanced - Middle School Level	Music reading and performance, skill development	0	0	2
50.0914	Orchestra 8 - Middle School Level	Music playing and performance	0	0	2
50.0915	Orchestra 8 Advanced - Middle School Level	Music playing and performance	0	0	2
50.0916	Orchestra 9	Music playing and performance	0	0	2
50.0917	Orchestra 9 Advanced	Section playing, audition, performance	0	0	2
50.0935	Chorus 7 - Middle School Level	Practice for special productions, basic music reading, tone production, intonation and rhythm	0	0	2
50.0936	Chorus 7 Advanced - Middle School Level	All-state, all-county auditions, pitch matching, intonation, tone quality, rhythm, sight-reading	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
50.0937	Chorus 8 - Middle School Level	Practice for special productions, pitch matching, intonation, tone quality, rhythm, sight-reading	0	0	2
50.0938	Chorus 8 Advanced - Middle School Level	All-state, all-county auditions, advanced pitch matching, intonation, tone quality, rhythm, sight-reading	0	0	2
50.0939	Chorus 9	Participation in special chorus, music reading, tone production, intonation and rhythm	0	0	2
50.0940	Chorus 9	All-state, all-county audition, balance, sound, voice production	0	0	2
50.0953	Music History 7 - Middle School Level	Music history, Renaissance to the present	0	0	2
50.0954	Music History 8; Music through the Ages - Middle School Level	Performance, theory, musical history, jazz, popular music, elements of musical structure, 20th century music	0	0	2
50.0955	Music History 9; Contemporary Music 9; Pop Music History 9 - Middle School Level	History of American music, 20th century music	0	0	2
54	**ACADEMICALLY FOCUSED SELF-CONTAINED SPECIAL EDUCATION PROGRAMS**				
54.1	**FUNCTIONAL MATHEMATICS**				
54.1002	General Mathematics Skills - Middle School Level	Applications for independent functioning, precomputation skills, time, money, fundamental mathematical processes	0	0	2
54.1102	Functional Consumer Mathematics - Middle School Level	Budgeting, shopping, financial planning, taxes, loans	0	0	2
54.1202	Functional Vocational Mathematics - Middle School Level	Calculation, measurement, job skills, practical shop uses, skill development	0	0	2
54.2	**FUNCTIONAL ENGLISH**				
54.2012	Functional Language Arts 1 - Middle School Level	Provides a unified approach to instruction in speaking, reading, and writing	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
54.2102	Functional Reading - Middle School Level	Word recognition, reading vocabulary, reading signs, spelling, word attack skills	0	0	2
54.2202	Functional Oral Communication - Middle School Level	Speaking intelligibly, listening and understanding directions	0	0	2
54.2302	Functional Writing - Middle School Level	Basic sentence structure, spelling, personal and business letters, completing application forms, penmanship	0	0	2
54.2402	Functional Academics - Middle School Level	Individualized academic curriculum, study skills, specialized academic support (not specified elsewhere)	0	0	2
54.3	**FUNCTIONAL LIFE SKILLS**				
54.3002	Activities of Daily and Family Living - Middle School Level	Functioning in the community, local transportation systems, budgeting, home and personal maintenance, family responsibilities	0	0	2
54.3102	Social/Behavioral Skills - Middle School Level	Follow accepted rules and standards, friendship problem solving, self-control, personal interactions	0	0	2
54.3202	Functional Leisure and Recreational Skills - Middle School Level	Management of free time, team behavior, recreation skills, rules, preparation for activities, selection of appropriate attire, maintenance of equipment	0	0	2
54.3301	Functional Health - Middle School Level	Principles of cleanliness and hygiene, sex education, proper diet, grooming, emergency procedures, medical care	0	0	2
54.3402	Functional Transition Skills - Middle School Level	Planning for future independent living or employment, skills for adult living, should include a work readiness component	0	0	2
54.4	**FUNCTIONAL SCIENCE AND SOCIAL STUDIES**				
54.4002	Functional Science - Middle School Level	Science concepts applied to daily living; simplified science, using household chemicals; safety; the human body; caring for animals	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
54.4502	Functional Social Skills - Middle School Level	Simplified principles of social science, structure of local government and election process, community resources and agencies, local geography, finding addresses and using public transportation	0	0	2
54.9402	Handicapped Developmental Support Services - Middle School Level	Gross and fine motor skills, visual perception development, eye-hand coordination	0	0	2
55	**CAREER PREPARATION AND EXPLORATION FOR SELF-CONTAINED SPECIAL EDUCATION PROGRAMS**				
55.0	**CAREER PREPARATION AND EXPLORATION**				
55.0002	General Prevocational Preparation - Middle School Level	Classroom-based employability skills, job behaviors, safety, self-reliance	0	0	2
55.0102	Career Exploration - Middle School Level	Generalized job interests and aptitudes, manual dexterity and motor integration	0	0	2
55.0402	Combined Vocational and Academic Preparation - Middle School Level	Includes career exploration, prevocational skills, academic curriculum, social and survival skills	0	0	2
56	**SUBJECT AREA PROGRAMS AND SERVICES IN RESOURCES AND MAINSTREAM SPECIAL EDUCATION PROGRAM**				
56	**SUBJECT AREA SERVICES**				
56.2300	Special Education Language Arts	Not elsewhere classified learning problems English, basic resource English, resource language arts, English and language skills, vocabulary development	0	0	2
56.2301	Resource Language Arts and English	Resource English, resource language arts, learning problems English, basic English and language skills, vocabulary development	0	0	3

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
56.2311	Resource Reading	Resource reading, word attack skills, vocabulary development, comprehension and interpretation	0	0	3
56.2320	Special Education Writing - Middle School Level	Not elsewhere classified	0	0	2
56.2321	Resource Writing	Resource writing, sentence and paragraph development, forms and applications, letter writing	0	0	2
56.2341	Resource Language Arts and English 7 - Middle School Level	Resource English; resource language arts; learning problems English; basic and language skills; spelling handwriting, vocabulary development; developmental English ESE AAP	0	0	2
56.2342	Resource Language Arts and English 8 - Middle School Level	Resource English, resource language arts; learning problems English; basic language skills; spelling, handwriting, vocabulary development; developmental English ESE AAP	0	0	2
56.2343	Resource Reading - Middle School Level	Resource reading, word attack skills, vocabulary development, comprehension and interpretation	0	0	2
56.2700	Special Education Mathematics	Not elsewhere classified	0	0	2
56.2701	Resource General Mathematics	Resource mathematics, learning problems mathematics, calculating devices, money management, basic mathematics skills	0	0	2
56.2702	Resource General Mathematics 7 - Middle School Level	Resource mathematics, learning problems mathematics, calculating devices, money management, basic mathematics skills	0	0	2
56.2703	Resource General Mathematics 8 - Middle School Level	Resource mathematics, learning problems mathematics, calculating devices, money management, basic mathematics skills	0	0	2
56.32	**RESOURCE VOCATIONAL COURSES**				
56.3201	Resource Career Exploration and Pre-Vocational Skills	Resource career preparation, employability skills, job readiness, job interests, career options	0	0	2
56.3202	Resource Career Exploration and Prevocational Skills - Middle School Level	Resource career preparation, employability skills, job readiness, job interests, career options	0	0	2

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Table G-1. Middle school CSSC developed for National Evaluation of GEAR UP (continued)

CSSCID	Course	Description	SE[a]	LG[b]	LV[c]
56.4001	Resource General Science	Combined basic science study, life science, human body, physical science, basic science concepts, applied science	0	0	2
56.4002	Resource General Science - Middle School Level	Combined basic science study, life science, human body, physical science, basic science concepts, applied science	0	0	2
56.4501	Resource Social Studies	Citizenship; resource social studies; learning problems social studies; consumer skills, history and geography	0	0	2
56.4502	Resource Social Studies - Middle School Level	Citizenship; resource social studies; learning problems social studies; consumer skills, history and geography	0	0	2
56.9	**GENERAL RESOURCE SERVICES**				
56.9001	General Tutorial Services	Individualized instructional assistance to support regular courses, as needed study or survival skills support	0	0	2
56.9002	General Tutorial Services - Middle School Level	Individualized instructional assistance to support regular courses, as-needed study or survival skills support	0	0	2
56.9101	Resource Study Skills	Study skills, resource study skills, learning problems	0	0	2
56.9102	Resource Study Skills - Middle School Level	Study skills, resource study skills, learning problems	0	0	2
56.9201	School and Social Survival Skills	Strategies for negotiating school, school behavior	0	0	2
56.9202	School and Social Survival Skills - Middle School Level	Strategies for negotiating school, school behavior	0	0	2
56.9209	School and Social Survival Skills, not for credit		0	0	2
56.9301	Resource Survival Skills	General survival skills, independent living, social skills, daily living skills	0	0	2
56.9302	Resource Survival Skills - Middle School Level	General survival skills, independent living, social skills, daily living skills	0	0	2
56.9401	Handicap Specific Support Services	Speech therapy, mobility training, auditory or visual training	0	0	2
56.9402	Handicap Specific Support Services -Middle School Level	Speech therapy, mobility training, auditory or visual training	0	0	2
99.9911	**UNKNOWN, CODE LATER**		**0**	**0**	**2**

[a] SE flag identifies whether a course is non-special education, self-contained special education or resource-level special education.

[b] LG is a language flag that identifies whether course is taught in English or a language other than English.

[c] LV is a level flag that identifies the academic level of the course (regular, honors, remedial, advanced placement or international baccalaureate).

Table G-2. Course codes for each academic pipeline

Academic pipelines	Course codes*
Mathematics progression	
No mathematics	
Remedial only	27.0601, 56.2701, 56.2702, 56.2703, 54.1002, 54.1102
Nonacademic:	
Below grade	27.0101, 27.0102
On grade	27.0103
Honors and above grade	27.0104, 27.0106
Academic preliminary	27.0401
Academic	27.0402, 27.0404, 27.0421, 27.0428
Science progression	
No science	
Remedial science only	(None)
Life sciences and physical science survey	
Below grade	30.0101, 30.0102, 26.0111
On grade	30.0103
Honors and above grade	30.0104
Chemistry and physics	
On grade	40.0111
Honors and above grade	40.0112
English progression	
No English	
Remedial English only	(None)
Below grade level	23.0101, 23.0102, 23.0103, 23.1201, 23.1211
On grade	23.0104, 23.0402, 23.0407,23.1202, 23.1311
Honors and above grade	23.0105, 23.0107
Foreign language progression	
No foreign language	
Below grade level	16.0931
On grade level	16.0902, 16.0932
Above grade level	16.0933, 16.0934

* Codes refer to the CSSC as modified by the national evaluation for use in middle schools.

Adjustments were made for academic classes that were identified as honors, advanced placement (AP) or international baccalaureate classes. These classes were treated as honors and above-grade classes as shown in table G-3. For example, a course titled "Eighth Grade Mathematics" on a student's transcript would be coded 27.0103. Additional information from the school might indicate that this particular class was being taught as an honors class. This information was captured in a separate field and was used to elevate the class to the honors and above grade level. In this example, the class would be treated the same as a class titled "Honors Eighth Grade Mathematics" or "Mathematics 8, Accelerated" (i.e., modified

CSSC code 27.0104). Classes that were identified as ninth grade or higher level classes were also treated as honors and above-grade classes.

Table G-3. Adjustments to class codes with honors identifiers

Academic pipeline	Class code*	Honors and above-grade code*
Mathematics	27.0103	27.0104
Science	30.0103, 40.0111	30.0104, 40.0112
English	23.0104, 23.0402, 23.0407, 23.1202, 23.1311	23.0105, 23.0107
Foreign language	16.0902, 16.0932	16.0933, 16.0934

* Codes refer to the CSSC as modified by the national evaluation for use in middle schools.

Similar to adjustments for classes identified as honors, academic classes taken by eighth-graders that had a grade level code of seven were treated as below grade level. On-grade and below-grade classes that were identified as remedial or resource were treated as remedial classes as seen in table G-4. Additional adjustments were not made to classes identified as special education.

Table G-4. Adjustments to class codes with remedial or resource identifiers

Academic pipeline	On-grade class code	Below grade code
Mathematics	27.0103	27.0101, 27.0102
Science	30.0103, 40.0111	30.0101, 30.0102, 26.0111
English	23.0104, 23.0402, 23.0407, 23.1202, 23.1311	23.0101, 23.0102, 23.0103, 23.1201, 23.1211
Foreign language	16.0902, 16.0932	16.0931

* Codes refer to the CSSC as modified by the national evaluation for use in middle schools.

G.2 Academic Rigor

Academic rigor or difficulty of a student's course load was determined by identifying the number of classes the student completed that were considered to be above grade level. For example, if the student took honors English, algebra, eighth-grade science and Spanish in eighth grade, the student's academic rigor score would be two because honors English and algebra would be counted as above grade level.

G.3 Grade Point Average (GPA)

Because many middle schools in the national evaluation did not report GPAs for their students, an academic GPA was calculated for all students. The academic GPA was based on student grades for classes in the four core subject areas: English, mathematics, science and foreign language. If a school reported grades by semester for year-long classes, an average grade for the class for the year was first calculated. An overall GPA was then calculated.

Appendix H

Analysis of Standardized Test Scores

While standardized test scores were collected for nearly all students in the National Evaluation of Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) for whom parental consent was obtained, the tests administered to students varied across schools according to district and state policies. The 32 schools in the national evaluation that provided standardized test scores were spread across seven states. Collectively these schools administered 13 different standardized tests to eighth-graders during the 2001–02 school year.

Scores from different standardized tests are not compatible, so analyzing them together as a separate measure was not feasible. It is possible, however, to analyze the test scores of students who took the same test, which is why this limited analysis is only presented as an appendix. Two of the 13 standardized tests were administered to students at several schools in the evaluation. One of the tests was a nationally normed test (Test A). Test A was administered to students enrolled in six schools located in two states. These six schools represent three matched sets of GEAR UP and non-GEAR UP schools.

Test A included separate reading and mathematics components. The reading component of the test was administered in the same schools as the mathematics component with the exception of one school, which did not administer the reading test to eighth-graders. Among the students in these schools in the evaluation, about 350 students received Test A mathematics scores and about 300 received Test A reading scores.

The other test used in this analysis (Test B), was a state-normed test. Five schools administered both the reading and mathematics components of Test B to eighth-graders during the 2001–02 school year. Four of the five schools represented two pairs of matched schools. The fifth school is a GEAR UP school. More than 400 students received reading and mathematics test scores across the five schools.

For both tests, eighth-grade scores (from tests administered during the 2001–02 school year) were analyzed. Ideally, baseline scores would have been compared with eighth-grade scores, but no adequate baseline scores were accessible. Tests taken during the seventh grade occurred too far into the school year to provide an accurate baseline, and sixth-grade scores were unavailable. Instead of comparing eighth-grade scores to previous tests, models were created from uncontaminated seventh-grade questionnaire items. (For a more detailed explanation of uncontaminated variables, see Appendix E on Removal of Baseline Differences.) These models controlled for differences between GEAR UP and comparison students, beyond those that were controlled through the selection of the non-GEAR UP comparison schools. Through these models, a main effect for treatment status (GEAR UP versus non-GEAR UP school) can be interpreted as a GEAR UP effect on test scores, as long as the model assumptions hold.

But, there were some indications of model assumption violations, which led to the use of nonparametric tests for GEAR UP effects on test scores. In these nonparametric tests, the GEAR UP and non-GEAR UP students were grouped by their predicted scores, and their test scores were compared within groups, to estimate any GEAR UP effect on test scores.

H.1 Analysis of Test A

To analyze the effect of GEAR UP on Test A scores, separate models for predicting Test A mathematics and reading scores were created. By using such models, comparisons between predicted and actual test scores could be made for both the treatment (GEAR UP) and control (non-GEAR UP) students. These comparisons indicate whether GEAR UP students performed significantly differently on Test A than their non-GEAR UP counterparts, after controlling for the variables used in the predictions.

Normalizing Test A Scores

For the models to work, the students' test scores would need to be fairly normally distributed. Because the raw scores for Test A were not normally distributed, several steps were taken to minimize the impact of their nonnormality. The first step was to modify the test scores using a probit transformation. The probit transform put the test scores on a scale ranging from $-\infty$ to ∞. Figures H-1 and H-2 show the results of the probit transform, which helped somewhat, but still did not produce a normal distribution of the scores for Test A reading or mathematics. Although the probit transformed scores were not centered at 0, this was understandable because the population in the evaluation was composed of predominately lower performing students.

Figure H-1. Histogram of Test A probit reading scores

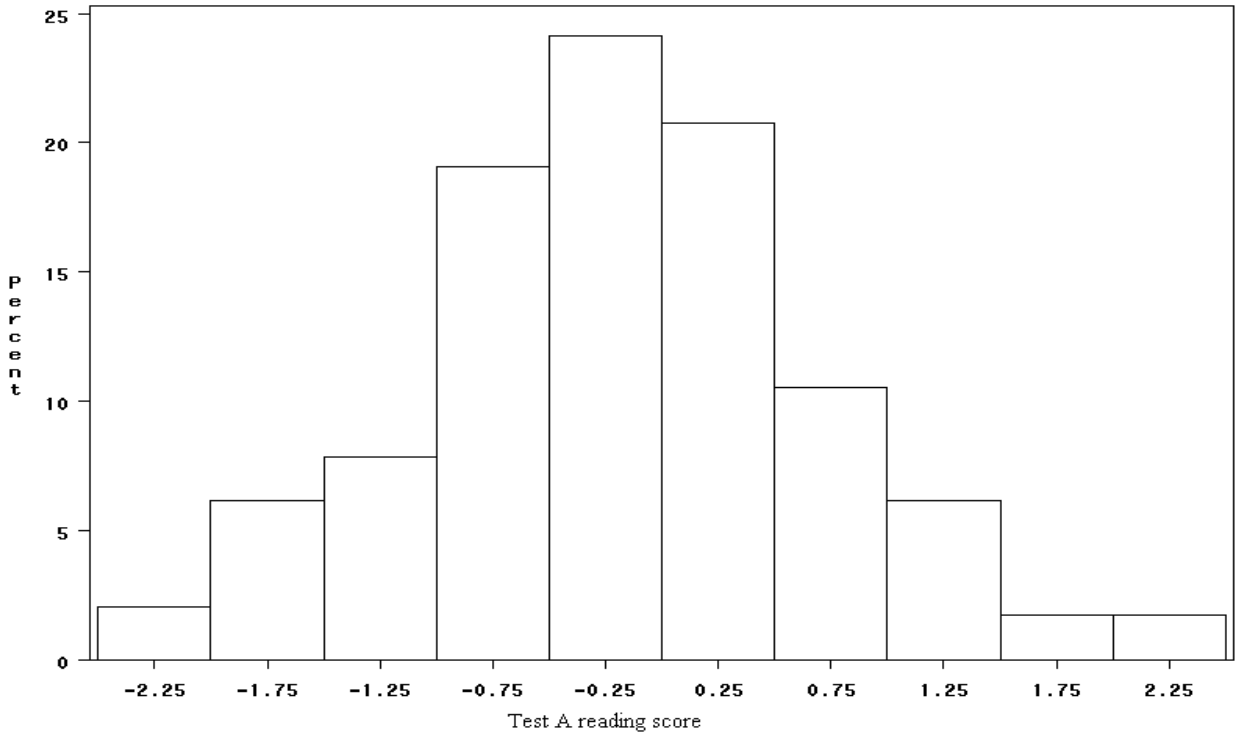
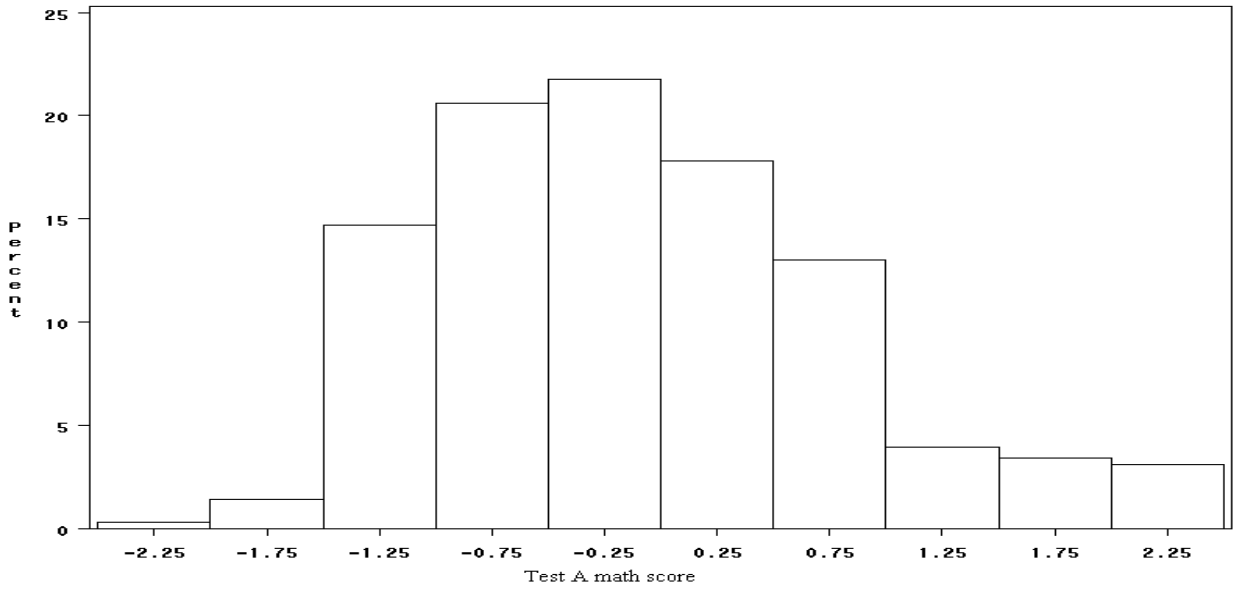


Figure H-2. Histogram of Test A probit mathematics scores



The next step in the attempt to normalize the test scores was to perform a Box-Cox transformation on the probit transformed scores. With this second transformation, the residual scores met the standard for normality and then could be analyzed with the models to be explained below. Figures H-3 and H-4 are histograms of these transformed scores.

Figure H-3. Histogram of Box-Cox transformed Test A probit reading scores with lambda=1.17931

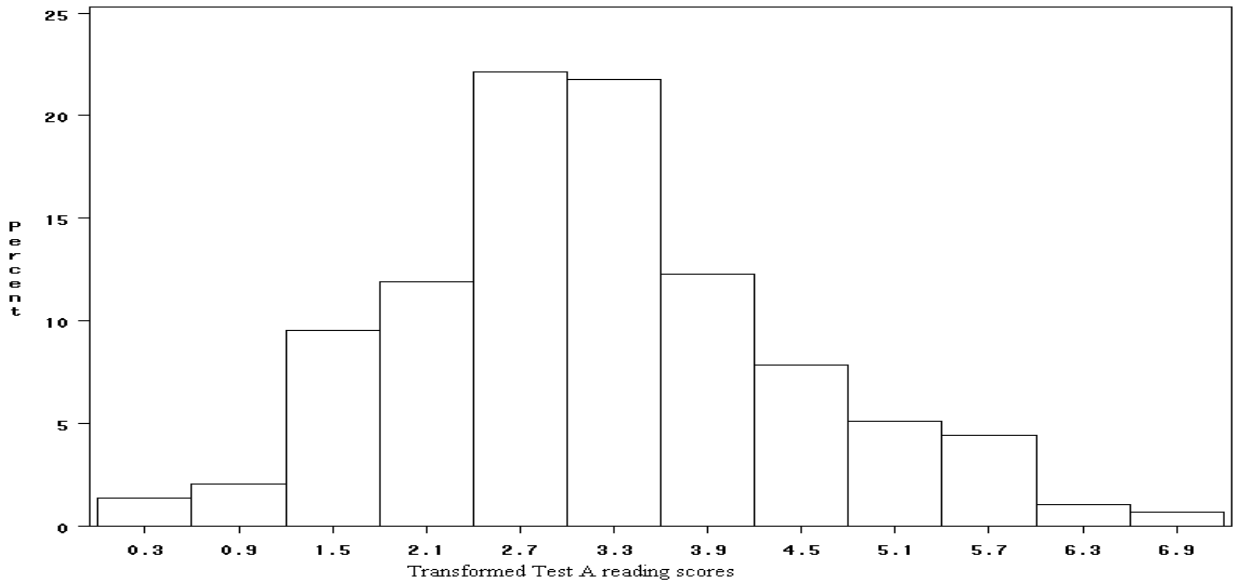
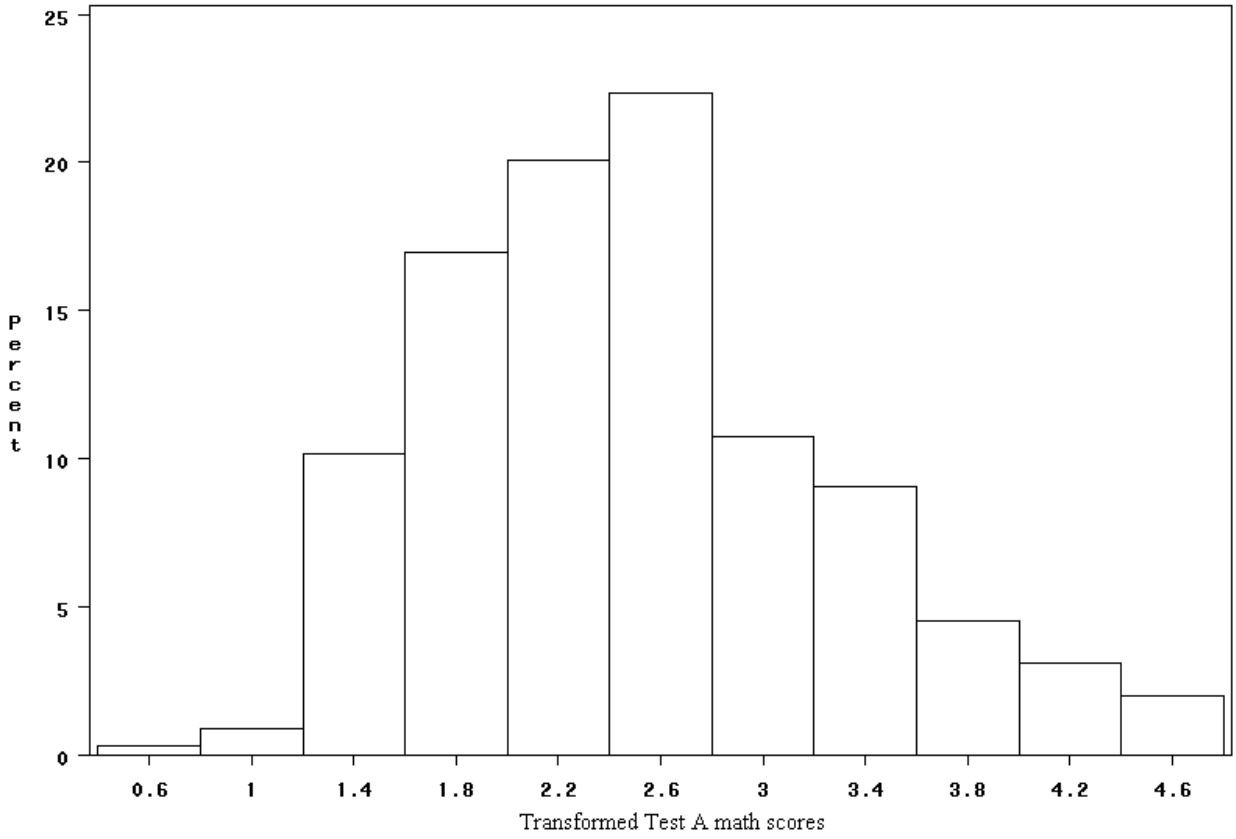


Figure H-4. Histogram of Box-Cox transformed Test A probit mathematics scores with lambda=0.924138



Creating the Test A Models

Because the scores were reasonably close to normal, models to predict Test A reading and mathematics scores were created. The models attempted to isolate the student and parent variables that best predict Test A reading and mathematics scores. Not all students' scores were used in the formation of the models, however. If a student had a standardized residual with an absolute value of more than three, it was considered an outlier and omitted. The models were, therefore, formed using 294 Test A reading scores and 354 Test A mathematics scores. In addition, only uncontaminated seventh-grade variables were used in the models to preserve any early GEAR UP effects that could have occurred in the fall of seventh grade.

Next, a series of step-wise searches for main effects and interactions was performed. In this process, the models were first fit with main effects. Then, the models for interaction terms involving main effects of over 0.05 percent significance were created. Tables H-1 and H-2 show the variables that entered the separate models for reading and mathematics, respectively.

Table H-1. Seventh-grade variables used to predict Test A reading scores

Obs	Effect	Estimate	Standard error	tValue	Probt
1	Intercept	2.498	0.340	7.35	<.0001
2	Black_7	-0.390	0.151	-2.59	0.01
3	TalkHouseCollEntClasses_7	-0.306	0.086	-3.57	4E-04
4	AdultHangFreq_7	-0.560	0.139	-4.03	<.0001
5	CollegeBoundRev_7	2.328	0.398	5.84	<.0001
6	ComputerFreq_7	0.344	0.123	2.79	0.006
7	DontNeedHelp_7	-0.294	0.120	-2.46	0.015
8	ESLBIL7	-0.366	0.112	-3.27	0.001
9	Grades_7	0.705	0.224	3.14	0.002
10	HowHard_7	-0.603	0.223	-2.7	0.007
11	ImpGoCollege_7	-1.270	0.266	-4.77	<.0001
12	Mobility_7	0.354	0.131	2.71	0.007
13	ParGrades_7	0.447	0.248	1.8	0.073
14	ParTalkPolitics_7	-1.300	0.267	-4.87	<.0001
15	White_7	-0.393	0.380	-1.03	0.302
16	computerathome_7	0.354	0.089	3.96	<.0001
17	pimphardwork_7	0.397	0.180	2.2	0.028
18	TalkHouseCollEntClasses_7*HowHard_7	-0.854	0.325	-2.63	0.009
19	DontNeedHelp_7*HowHard_7	-0.782	0.247	-3.17	0.002
20	ESLBIL7*ParGrades_7	1.376	0.336	4.1	<.0001
21	Mobility_7*White_7	1.438	0.500	2.87	0.004
22	Tschool	-0.006	0.097	-0.06	0.953

* All numeric variables rescaled linearly from 0 to 1.

The fitted models were used to generate predicted Test A reading and mathematics scores for each student. Figures H-5 and H-6 demonstrate how actual scores compared with predicted Test A reading and mathematics scores, separately. Each point in these figures represents a group of test scores; there are 50 groups. The figures show that the model predicts actual test scores fairly well.

Note that the line in Figures H-5 and H-6 is a 45º line, not a model fit line. The points tend to lie below the 45º line because of technical issues concerning the universe transformation of predicted scores of the Box-Cox transform. The important feature is that points do lie fairly close to a straight line.

Analyzing the Residuals of the Test A Reading and Mathematics Models

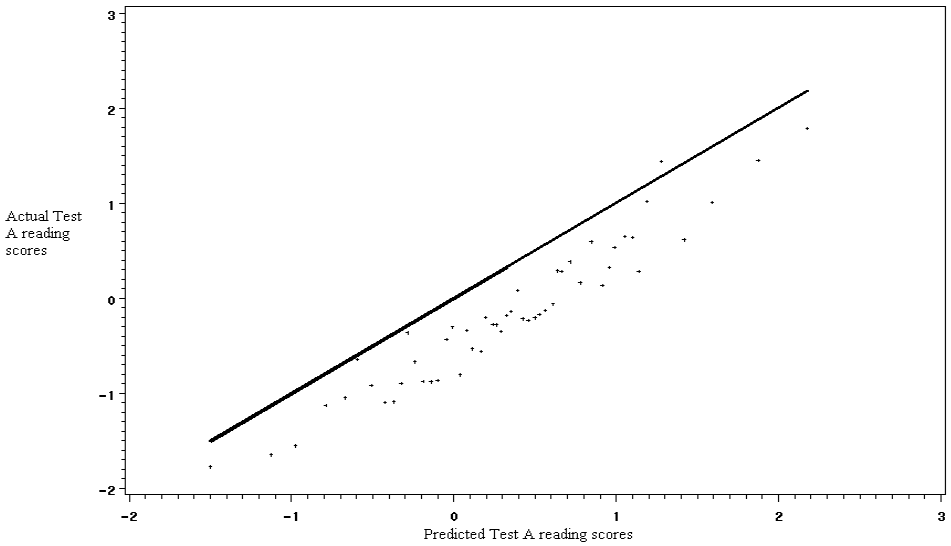
Interpreting the results of the models required the use of a t-statistic. For the p value of a t-statistic to be correct, the residuals of the model must be normally distributed. Therefore, before any results from the model can be interpreted, it must be determined whether the residuals are normally distributed.

Table H-2. Seventh-grade variables used to predict Test A mathematics scores

Obs	Effect	Estimate	StdErr	tValue	Probt
1	Intercept	3.003	0.300	10.01	<.0001
2	Firstlanguage_7	-0.148	0.057	-2.61	0.0094
3	ParentHelp_7	-0.173	0.081	-2.13	0.0337
4	TalkCounHSGradClasses_7	0.217	0.162	1.34	0.18
5	Black_7	-0.316	0.091	-3.47	0.0006
6	CollegeBoundRev_7	0.278	0.392	0.71	0.4779
7	CollegeClose_7	-0.432	0.102	-4.25	<.0001
8	ESLBIL7	-0.208	0.062	-3.34	0.0009
9	FatherGoCollege_7	0.138	0.060	2.3	0.0219
10	GENDER	-0.159	0.158	-1	0.3175
11	Grades_7	-0.413	0.286	-1.45	0.1491
12	Hispanic_7	-0.081	0.069	-1.17	0.2432
13	IEP7	-0.214	0.085	-2.52	0.0121
14	ImpGoCollege_7	-0.449	0.155	-2.9	0.0039
15	ImpWork_7	-0.527	0.174	-3.02	0.0027
16	MathClub_7	0.510	0.086	5.94	<.0001
17	MathHomework_7	0.450	0.145	3.11	0.002
18	OtherHelp_7	-0.125	0.058	-2.16	0.0317
19	ParGrades_7	0.418	0.183	2.28	0.0231
20	ScienceHomework_7	-0.282	0.181	-1.56	0.1198
21	Black_7*GENDER	1.848	0.495	3.73	0.0002
22	FatherGoCollege_7*OtherHelp_7	0.494	0.222	2.22	0.0269
23	GENDER*ScienceHomework_7	-0.575	0.236	-2.44	0.0153
24	Grades_7*ImpWork_7	-0.526	0.108	-4.85	<.0001
25	tschool	-0.126	0.055	-2.27	0.0236

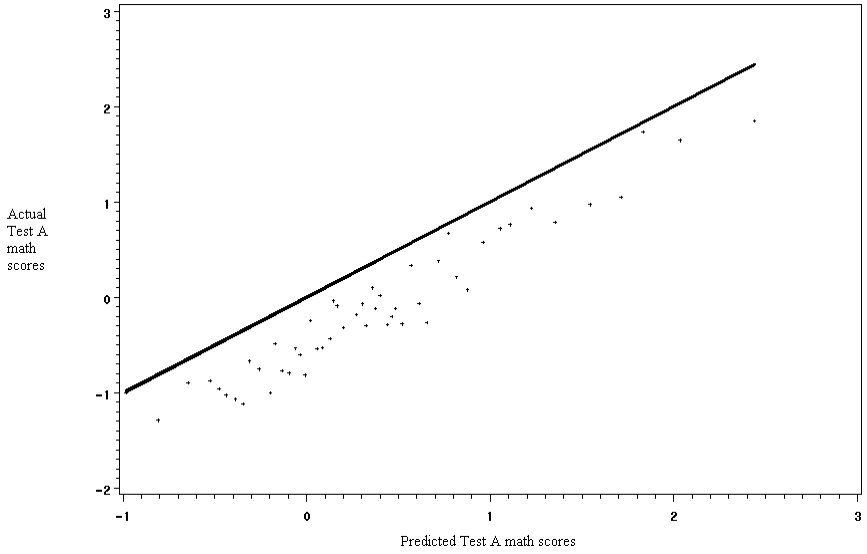
* All numeric variables rescaled linearly from 0 to 1.

Figure H-5. Grouped actual versus predicted Test A reading scores



NOTE: Line is a 45° line, not a model fit line.

Figure H-6. Grouped actual versus predicted Test A mathematics scores



NOTE: Line is a 45° line, not a model fit line.

Six different tests for normality were performed on each set of residuals. A set of residuals must have passed all of these tests to have been considered normal. The tests used in this exercise included a scatterplot of standardized residuals; a normal curve superimposed on a histogram of the residuals; a QQ plot for normality; and the Kolmogorov-Smirnov, Cramer-von Mises and Anderson-Darling tests.

The residuals from the Test A reading model did not pass the Kolmogorov-Smirnov test and barely passed the Cramer-von Mises and Anderson-Darling tests. Table H-3 outlines the statistic and p value for each of these tests. For the residuals to have passed any of these tests, the p value must have been greater than 0.05.

Table H-3. Goodness of fit tests for normal distribution of residuals from the Test A reading model

Test	Statistic		p Value	
Kolmogorov-Smirnov	D	0.056	Pr > D	0.023
Cramer-von Mises	W-Sq	0.116	Pr > W-Sq	0.073
Anderson-Darling	A-Sq	0.741	Pr > A-Sq	0.054

Because the residuals from the Test A reading model were not normally distributed, parametric tests like the model outlined in table H-1 could not be used to determine whether GEAR UP students had Test A reading scores that were significantly different from those of students in non-GEAR UP schools. A nonparametric test, to be described later, would provide some additional information on this question.

The residuals for the Test A mathematics model, on the other hand, did pass all of the tests for normality. Thus, the parameters outlined in table H-2 can be reliably interpreted. The most important parameter in this discussion was number 25, tschool (treatment school status). This variable indicated whether the student attended a GEAR UP school. Because the estimate for this variable was negative, it appears that

GEAR UP caused a worsening of student performance on the mathematics section of Test A. To further explain this finding, a nonparametric analysis was performed and is discussed below.

Performing Nonparametric Analyses of Test A Reading and Mathematics Scores

A nonparametric analysis was performed to provide more information about the inconclusive findings for the reading component of Test A and the finding of negative GEAR UP impact on the mathematics component of Test A. For these analyses, the students were clustered into 10 groups for each test subject based on their predicted Test A scores for that subject. Within each of the 10 groups, the students were divided into two groups, based on whether they had attended a GEAR UP school.

For each of the resulting 10 groups, figures H-7 and H-8 show the relationship between predicted and actual Test A reading and mathematics scores, respectively. In figure H-7, each treatment group (GEAR UP) was almost horizontally lined up with its corresponding control group indicating that the predicted scores for both groups were similar. The lines were nonparallel and actually crossed one another, indicating that there is not a consistent difference in the scores between GEAR UP and non-GEAR UP students. The validity of this finding is not affected by the lack of normality of the residuals described above.

Figure H-7. Actual Test A reading scores by predicted Test A reading scores, by treatment school status

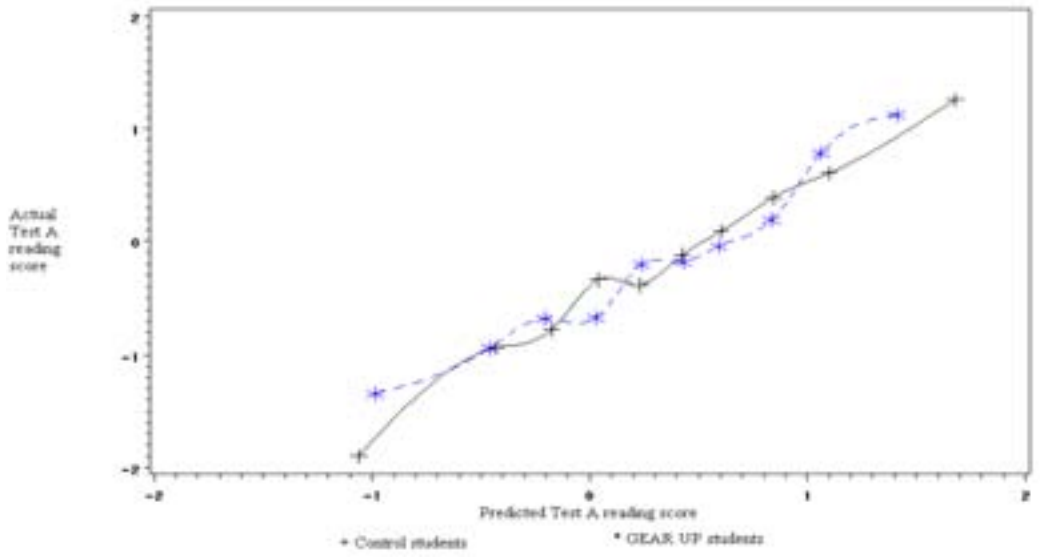
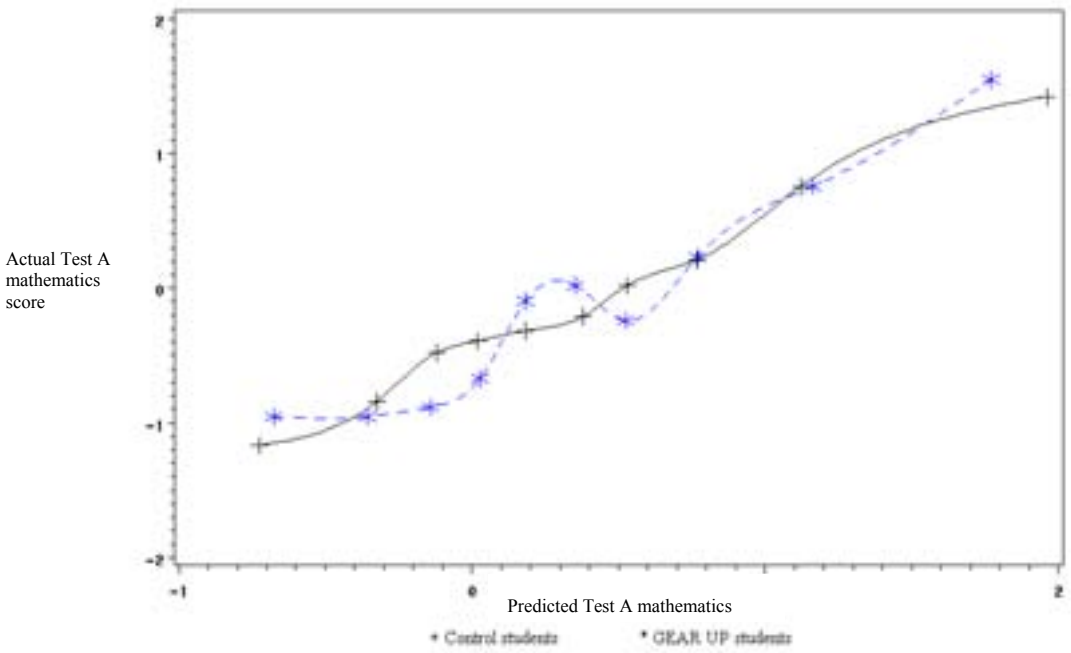


Figure H-8. Actual Test A mathematics scores by predicted Test A mathematics scores, by treatment school status



The results for Test A mathematics scores were somewhat different. The parametric model shown in table H-2 indicates that there was an overall negative effect of GEAR UP on Test A mathematics scores. Figure H-8 provides further information on this finding. For one-half of the figure, the matched nodes were horizontally and vertically close to one another indicating that Test A mathematics scores for GEAR UP and non-GEAR UP students were similar. However, the third through the seventh pairs are further apart than the other pairs. (Students were grouped by increasing predicted Test A mathematics scores, so of these five groups, Group three had the lowest predicted Test A mathematics score, and the seventh group had the highest.) In the third, fourth, and seventh groups, it appears that students in the non-GEAR UP group performed better on the mathematics component of Test A. For Groups five and six, GEAR UP students had higher Test A mathematics scores. The differences in test scores somewhat cancel each other out in an overall measure. But, because non-GEAR UP students outscored GEAR UP students in three groups, while the opposite was true in only two groups, a small overall negative GEAR UP effect, outlined in the previous step of the analysis, was detected.

H.2 Analysis of Test B

The analysis of Test B took the same path as that taken for Test A, so the explanation of the Test B process will not be as detailed as the discussion for Test A.

Normalizing Test B Scores

As with Test A, the Test B scores had to be normally distributed for the p values on GEAR UP effects to be valid. First, the scores were modified using a probit transform, putting the test scores on a scale ranging from -∞ to ∞. Next, a Box-Cox transformation was performed on the probit transform scores. After this procedure, the scores were sufficiently normalized to proceed with the creation of the models.

Creating the Test B Models

The procedure for creating the Test B models was the same as that for Test A. As with Test A, the score of any student that had a standardized residual with an absolute value over three was considered an outlier and omitted. In addition, only uncontaminated seventh-grade variables were used in the models. The models were formed on 407 Test B reading scores and 395 Test B mathematics scores.

A series of step-wise searches for main effects and interactions was then performed, first fitting the model with main effects. Then, the models for interaction terms involving main effects of over 0.05 percent significance were created. Tables H-4 and H-5 show the variables that entered the separate models for reading and mathematics, respectively.

Table H-4. Seventh-grade variables used to predict Test B reading scores

Obs	Effect	Estimate	Standard error	tValue	Probt
1	Intercept	1.935	0.309	6.27	<.0001
2	ChessClub_7	-0.470	0.176	-2.67	0.0079
3	ComputerFreq_7	0.355	0.135	2.63	0.0089
4	Black_7	-0.908	0.273	-3.33	0.001
5	ClubHours_7	0.969	0.199	4.87	<.0001
6	ESLBIL7	-0.664	0.155	-4.29	<.0001
7	EdFor30_7	0.883	0.213	4.14	<.0001
8	HeardVocEd_7	-0.262	0.109	-2.39	0.0171
9	Hobbies_7	0.326	0.114	2.86	0.0044
10	Kim38R_7	0.427	0.152	2.8	0.0054
11	OtherSchoolHelp_7	-0.421	0.107	-3.95	<.0001
12	ParGrades_7	-0.704	0.453	-1.55	0.1209
13	ParentEd_7	0.906	0.200	4.53	<.0001
14	UncleHelp_7	-0.280	0.109	-2.58	0.0103
15	VolunteerFreq_7	-0.575	0.236	-2.44	0.0152
16	hmwkundr_7	0.728	0.227	3.21	0.0014
17	ClubHours_7*GrParentGoCollege_7	-0.548	0.208	-2.64	0.0086
18	Grades_7*ParGrades_7	2.256	0.414	5.45	<.0001
19	tschool	-0.035	0.110	-0.32	0.7508

* All numeric variables rescaled linearly from 0 to 1.

Table H-5. Seventh-grade variables used to predict Test B mathematics scores

Obs	Effect	Estimate	Standard error	tValue	Probt
1	Intercept	1.025	0.163	6.29	<.0001
2	ClubHours_7	0.181	0.081	2.24	0.0256
3	CollegeMoreMoney_7	0.352	0.083	4.23	<.0001
4	NegTVHours_7	0.193	0.077	2.49	0.0134
5	AbsentDays_7	0.241	0.081	2.97	0.0031
6	AnySibling_7	0.178	0.047	3.78	0.0002
7	ESLBIL7	0.426	0.247	1.73	0.0851
8	Firstlanguage_7	-0.262	0.047	-5.62	<.0001
9	FriendOpImport_7	-0.321	0.103	-3.12	0.0019
10	Grades_7	0.718	0.132	5.42	<.0001
11	NumAdult_7	-0.192	0.059	-3.26	0.0012
12	ParTalkPolitics_7	0.139	0.060	2.31	0.0214
13	ParentEd_7	0.350	0.086	4.05	<.0001
14	UncleHelp_7	-0.142	0.044	-3.19	0.0015
15	performance_7	0.667	0.122	5.48	<.0001
16	ESLBIL7*Grades_7	-1.002	0.338	-2.96	0.0033
17	EnglishHomework_7*computerathome_7	0.400	0.158	2.53	0.0118
18	LikelyGoCollege_7*OtherSchoolHelp_7	-0.357	0.064	-5.6	<.0001
19	OtherSchoolHelp_7*computerathome_7	0.256	0.069	3.7	0.0003
20	tschool	-0.040	0.045	-0.87	0.3824

* All numeric variables rescaled linearly from 0 to 1.

Analyzing the Residuals of the Test B Reading and Mathematics Models

As with Test A, the residuals from the Test B models had to meet tests for normality. The residuals from both the Test B reading and Test B mathematics models failed at least one of the tests for normality. Scatterplots of standardized residuals for the Test B reading and Test B mathematics models were created to ensure that the models adequately predicted actual Test B scores. These scatterplots were similar to those for Test A, which were displayed in figures H-5 and H-6. In the scatterplots for Test B, figures H-9 and H-10, obvious diagonal bands appeared, indicating that the residuals were not normally distributed.

Figure H-9. Standardized residual analysis of Test B reading scores

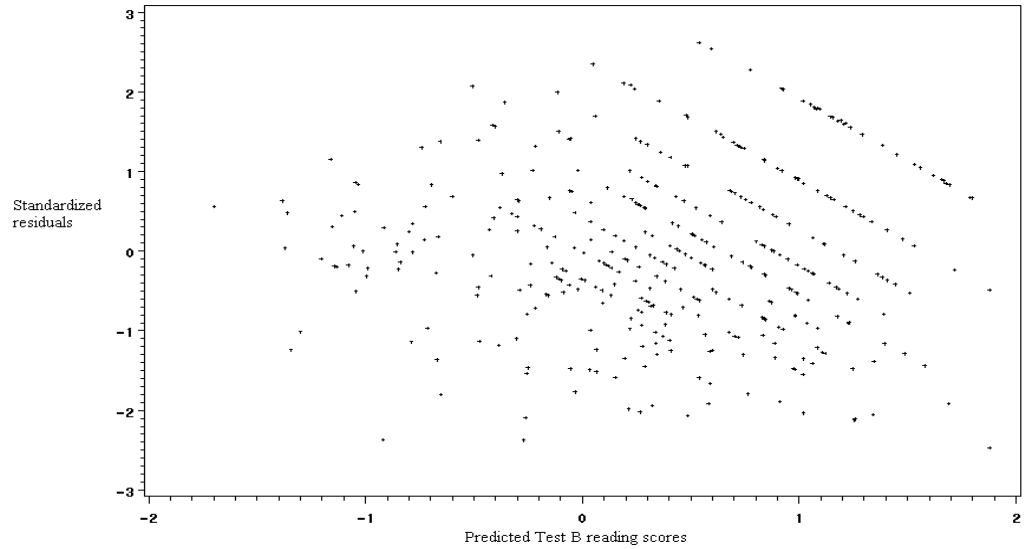
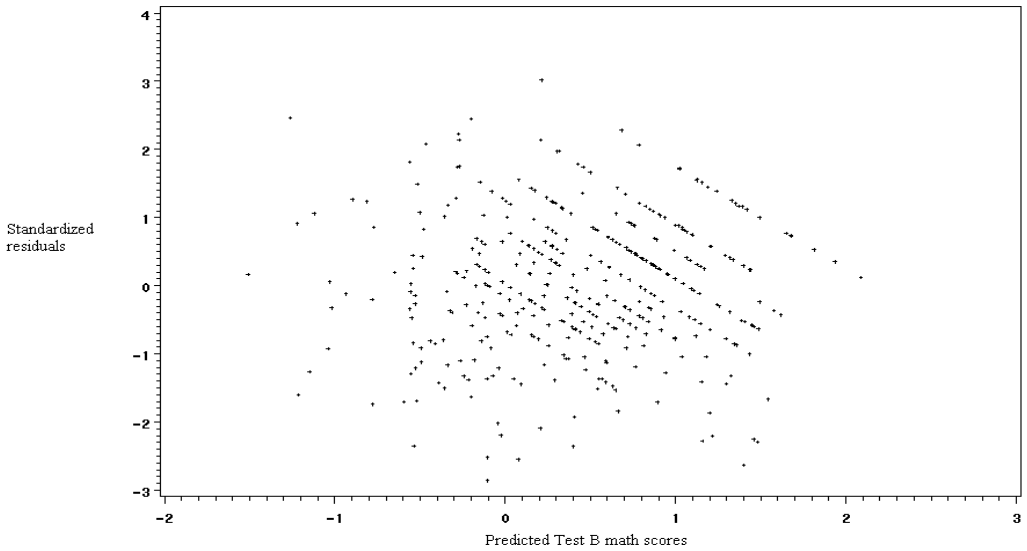


Figure H-10. Standardized residual analysis of Test B mathematics scores



Because the residuals for Test B reading and mathematics were not normally distributed, the results of the Test B reading and Test B mathematics models cannot be accurately interpreted using parametric tests such as the models outlined in tables H-4 and H-5.

Performing Nonparametric Analyses of Test B Reading and Mathematics Scores

As with the Test A reading model, the Test B model was unable to provide evidence of an effect of GEAR UP on Test B reading or mathematics scores. Thus, the nonparametric analysis was again used to provide additional information. The same procedure was followed as for the nonparametric analysis of Test A. Figures H-11 and H-12 show the relationship between Test B reading and Test B mathematics scores, respectively, for each of the 10 groups created.

Figure H-11. Actual Test B reading scores by predicted Test A reading score, by treatment school status

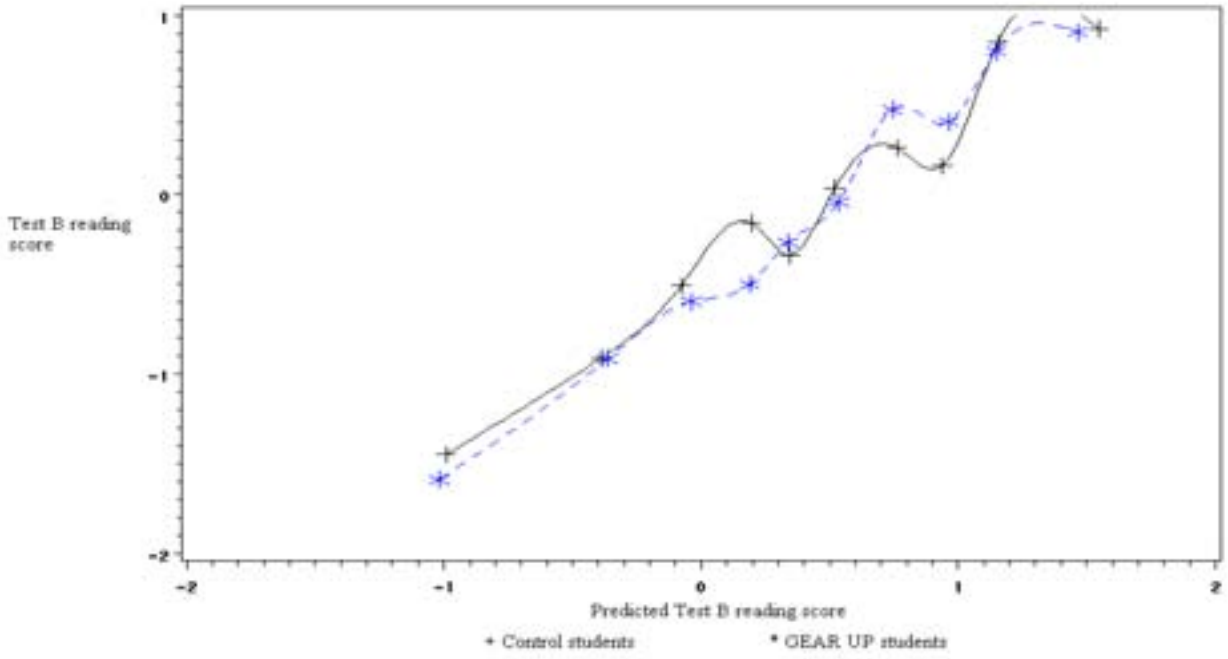
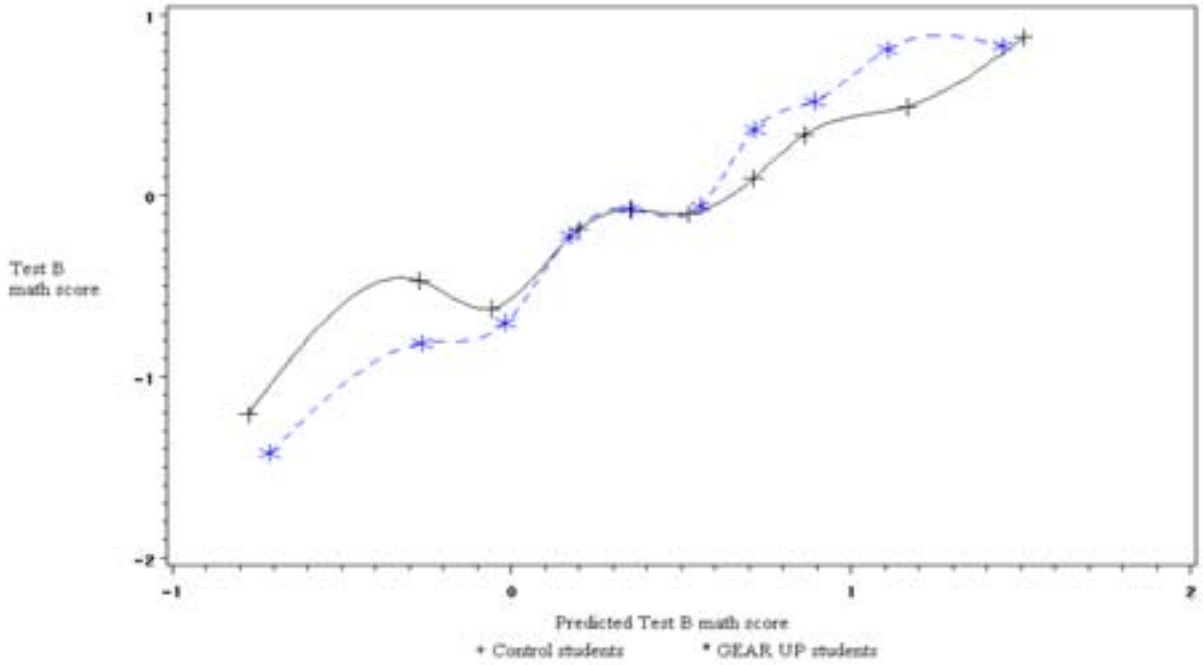


Figure H-12. Actual Test B reading scores by predicted Test A mathematics score, by treatment school status



In both cases, each treatment (GEAR UP) group was approximately horizontally lined up with its comparison (non-GEAR UP) group, indicating that the predicted scores for both groups were similar. The lines were nonparallel and crossed one another. This indicated that there was not a consistent difference in the scores between GEAR UP and non-GEAR UP students.

H.3 Conclusions

Based on a limited number of schools that had comparable standardized test data, the students in comparison (non-GEAR UP) schools performed slightly better than students in GEAR UP schools on the mathematics section of Test A, a nationally normed test. Further analysis suggests that this phenomenon was driven largely by one subgroup of students. There was no significant difference in scores between GEAR UP and non-GEAR UP students for the reading portion of the nationally normed test.

On the state-normed test (Test B), there was no significant difference in standardized test scores between GEAR UP and non-GEAR UP students for either the reading or mathematics components of the test.

Appendix I

Methodology for Analyzing Program Activity Records

Arrangements were made with GEAR UP staff to collect information on the participation of each student, as well as his or her parents, in services offered by the program. These arrangements were made with the primary goal of being able to determine which services and combinations of services were more effective than others. This original goal proved impossible to achieve because only six of the 18 GEAR UP projects submitted complete information on the activities they provided to students and parents. The data were sufficient, however, to examine differences in effects based on individual students' levels of participation in program activities.

No effects of the program as a whole on the College Orientation Index were detected. It was noted, however, that while some services reached all students in a project (such as curriculum reform or teacher training), actual participation in many types of GEAR UP services varied greatly among students. This raised the question of whether students who actively participated in proffered services might have experienced a positive effect on their College Orientation Indexes even though such effects were not detected on the wider student body. Answering this question became the secondary use of the program activity records data (or participation data).

The first step in this analysis was to determine a single scale for measuring participation. Since there were 19 service categories in the edited participation data, this was not a trivial issue. The second step was to identify an appropriate comparison group for the students with high participation. Consideration was given to comparing them with the other students in the GEAR UP schools—those that had low levels of participation. Concerns about potential selection biases with this approach, however, led to the decision to draw a control sample from the non-GEAR UP schools. After the control sample had been drawn, the third and final step was to calculate the effects and appropriate estimates of sampling error. This appendix provides more detail on each of the steps.

I.1 Participation Scale

Given the small number of schools with adequate participation data and a desire to simplify analysis and clarify presentation, it was decided to develop and use a single participation scale. We considered a variety of alternatives[62] but in the end decided to simply add together participation hours across all reported activities into a variable called TotalDose. This was done with the full knowledge that hours on a college field trip might be much more efficacious than a comparable number of hours spent in tutoring, but no viable alternate choice was identified. Table I-1 shows the number of participation hours by service category as well as how these correlate with TotalDose. TotalDose is dominated by

[62] In particular, we tried to use the data on all students from GEAR UP schools to develop a model of which services might be more effective than others, but the results from this effort were not compelling, perhaps due to strong selection biases within the GEAR UP schools, such as would be expected if participation was a function of perceived individual need for the service. We also tried a factor analysis, but this resulted in negative weights for some activities.

AcademicDose and OtherDose but also has high correlation with CareerOtherDose, CollegeDose, and OtherPDose.

Table I-1. Participation hours by service category and correlation with TotalDose and with first two factors

Service category	Mean hours	Standard error hours	Correlation with TotalDose
Students			
AcademicCareerDose	0.3	1.1	0.00
AcademicCollegeDose	0.9	2.7	0.06
AcademicDose	17.2	35.4	0.76
AcademicLifeSkillsDose	0.1	0.8	0.04
AcademicOtherDose	1.0	6.9	0.07
CareerCollegeDose	0.2	1.2	0.09
CareerDose	5.6	6.1	0.44
CareerOtherDose	0.6	0.9	0.67
CollegeDose	7.3	9.5	0.71
CollegeOtherDose	0.4	1.4	-0.02
LifeSkillsDose	0.5	1.1	0.08
MentoringDose	0.3	2.0	0.08
MultiDose	4.2	10.2	0.08
OtherDose	24.8	35.5	0.83
Parents			
CollegeLifeSkillsPDose	0.2	0.6	0.02
CollegeOtherPDose	0.1	0.3	0.03
CollegePDose	1.7	2.9	0.08
LifeSkillsPDose	0.5	1.5	0.36
OtherPDose	2.3	4.9	0.68

Table I-2 shows how this variable was distributed across the six GEAR UP schools with usable participation data. Clearly, School no. 6 either provided many more service hours to their students or did a better job of tracking participation. The unevenness of the participation hours across the schools is an important additional caveat.

Table I-2. Distribution of total participation hours across six responding schools

School	Participation hours over 2 years				
	Minimum	Median	Mean	Maximum	Standard deviation
1	10.3	58.1	66.6	180.3	27.4
2	1.0	17.3	33.4	180.8	41.4
3	0.0	8.0	6.5	8.2	2.4
4	0.0	12.0	31.9	187.3	43.3
5	14.3	66.5	64.7	147.0	25.3
6	0.0	164.0	166.0	466.0	76.0

I.2 Drawing a Control Sample for the non-GEAR UP Schools

The control sample was drawn in a multistep process and involved three types of schools—GEAR UP schools with good participation data, GEAR UP schools with insufficient participation data, and non-GEAR UP schools. The first step was to build a model for total participation hours within the six GEAR UP schools with two years of good participation data. This model was then applied to students from non-GEAR UP schools as well as students from nonresponding GEAR UP schools (those with fewer than two years of good data) to obtain predicted hours. Students were then stratified on the basis of predicted participation hours. Within these strata, students from the non-GEAR UP and nonresponding GEAR UP schools were randomly matched with students from responding GEAR UP schools. Actual participation hours were then copied over onto the student with unknown participation hours from the student with known participation hours. This imputation was repeated five times for each student with unknown participation.

Students in the non-GEAR UP and nonresponding GEAR UP schools, were ranked into quintiles on the basis of these imputed participation hours. Non-GEAR UP students in the top quintile of imputed participation hours were taken as the control sample. More detail on each of these steps follows.

Model for Total Participation Hours

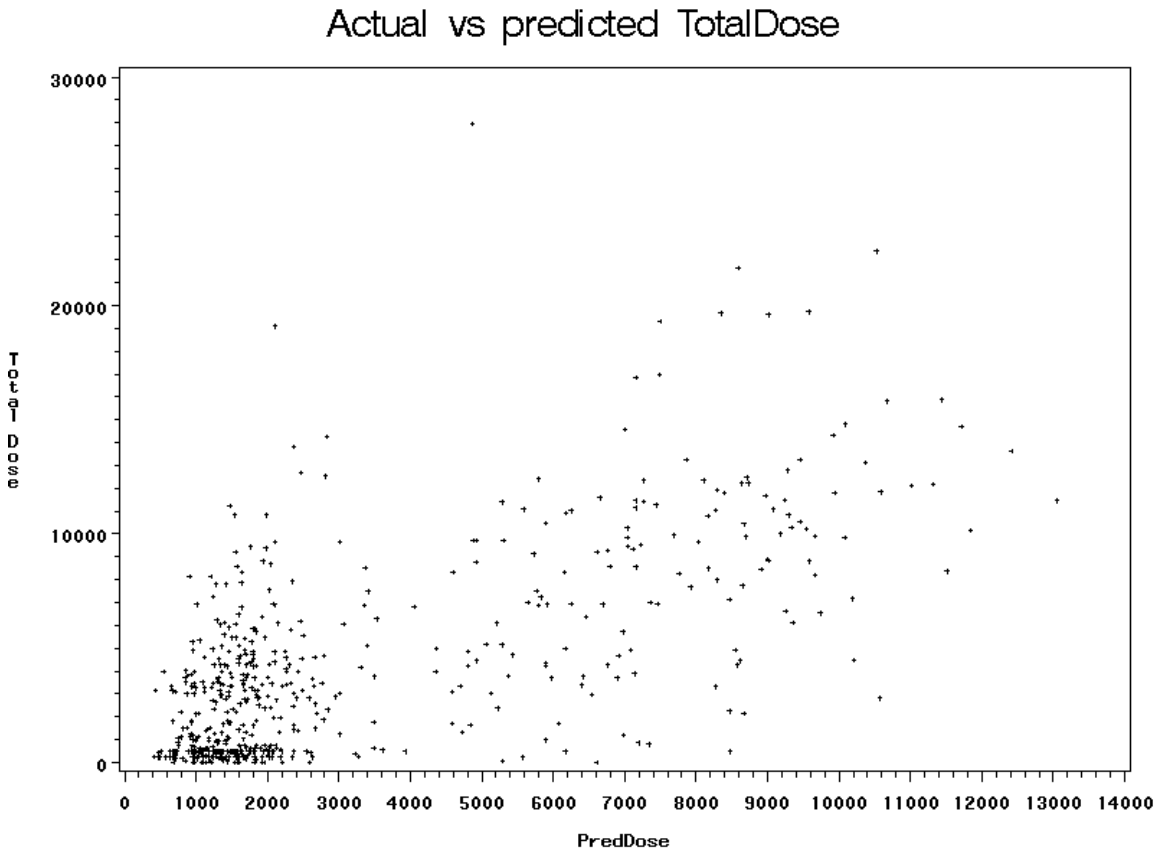
A linear model for the optimal Box-Cox transform of TotalDose was fit using a stepwise search (Box).[63] A search of first-order interactions among the most significant terms was also made, but none were found. Table I-3 shows the final model, and figure I-1 shows a scatterplot of predicted versus actual TotalDose. The R^2 was 0.39. As in modeling nonresponse or GEAR UP assignment propensity, the point of the modeling was not to obtain a fuller understanding of the participation decision process. Rather, the point was to simply have a solid basis for imputing counterfactual participation hours in the non-GEAR UP schools. Also, given the uneven levels of participation across schools, projection of these results to all GEAR UP schools might be problematic.

[63] TotalDose was slightly right shifted away from 0 and then exponentiated by 0.28621 to obtain the Box-Cox transform; G.E.P. Box, and D.R. Cox. An Analysis of Transformations. *Journal of the Royal Statistical Society* B, 26, 211-252: 1964.

Table I-3. Model for total participation hours (TotalDose)

Seventh-grade predictor	Estimate	Standard error	t-statistics value	P value
Intercept	7.4	0.7	10.34	<.001
Firstlanguage_7	-1.0	0.4	-2.69	0.007
TeacherHelp_7	1.1	0.3	3.43	0.001
raceeth_7 1	-1.4	0.5	-2.85	0.005
raceeth_7 2	-0.9	0.5	-1.92	0.056
raceeth_7 3	2.9	0.5	5.52	<.001
raceeth_7 4	-1.9	1.2	-1.51	0.132
raceeth_7 5	0.0	.	.	.
ClubLeader_7	1.0	0.4	2.43	0.015
Confer_events_7	1.4	0.6	2.36	0.019
ParTalkEvents_7	0.7	0.4	2.05	0.041
pexpect_7	1.1	0.6	1.85	0.065
ClubLeader_7*TakingClasses_7	-1.2	0.4	-2.86	0.004

Figure I-1. Scatter plot of predicted and observed TotalDose in six schools with adequate participation data*



*Units are in participation minutes rather than hours in this plot.

Considering the scatter plot, it is clear that the model is far from perfect. There is strong evidence of heteroscedasticity, missed higher order effects and non-normality. The model was therefore not used to directly impute total participation hours in the comparison schools. Instead, the model was used to stratify all students. For this use, the model is adequate. Note for example, that among students with predicted doses of at least 3,000 minutes, very few have doses under 1,000 minutes. Table I-4 provides more information about the effectiveness of the stratification. Discrimination is best at the high end of participation, but there is a strong general pattern of increased participation across the strata.

Table I-4. Statistics about the imputation strata in the six GEAR UP schools with adequate participation data

		Hours of participation over two years	
Imputation stratum	Number of students	Average	Standard error
1	68	27	28
2	62	26	32
3	69	39	39
4	70	41	45
5	62	45	44
6	64	60	59
7	55	89	78
8	53	125	74
9	68	174	74

Multiple Hot-Deck Imputations

After the sample in all three types of schools had been stratified, actual participation hours were imputed for all the students in the GEAR UP schools with inadequate data, and counterfactual participation hours were imputed for all the students in the non-GEAR UP schools. This was done using a hot-deck imputation procedure in which each student from each nonresponding GEAR UP school and each student from each non-GEAR UP school was randomly matched with a student from the same stratum from a responding GEAR UP school. This was done five times independently of each other so as to be able to estimate variances better as is described in the next section.

On each of the five replicates, the imputed responses within each school category were used to divide each sample into quintiles. The highest quintile in each category was then used as the treatment or comparison group.

I.3 Estimation of Effects

Consideration was given to just comparing outcomes across the groups, but it was decided for this analysis that it would better to create an adjusted change score that controls for a student's starting point. This was done by first fitting a model for change in the College Orientation Index in terms of baseline variables and then subtracting predicted change from actual change. This model is shown in table I-5. The parameters apply to a Box-Cox transformation of Unexplained Growth that was used to improve

normality.[64] The R^2 was 0.05. The model was formed in terms of baseline variables other than the baseline values of the outcome indices such as College Orientation Index. The second set of variables was omitted from the model in an attempt to avoid adjusting change for regression to the mean. However, an alternate model with those variables included did find significant regression to the mean. Variables associated with high baseline scores on the College Orientation Index may end up with negative coefficients in the growth-readiness model (because the regression to the mean is in a sense flowing through them), thereby complicating any analysis of the model. As an example of this, it seems unlikely that valuing mothers' opinions about education actually causes a decrease in the College Orientation Index. Indeed, there is a high positive correlation between valuing mothers' opinions and baseline scores on the College Orientation Index. Thus the model is included for documentation rather than as an aid to predicting which students are likely to experience improvements on the College Orientation Index. The importance of the model is in terms of the better controlled measure of change it provides.

Table I-5. Model for change in College Orientation Index in terms of baseline variables other than baseline versions of primary outcome indexes*

Effect	Estimate	Standard error	t-statistics value	Probability
Intercept	83.4	2.9	29.0	<.001
ConferBehave_7	1.9	0.9	2.1	0.036
EventBacktoSchool_7	-1.6	0.6	-2.5	0.012
HeardCommColl_7	1.4	0.7	2.0	0.046
HeardVocEd_7	-1.8	0.7	-2.6	0.009
Mobility_7	-2.1	0.9	-2.4	0.015
MotherOpImport_7	-12.1	2.8	-4.3	<.001
PostSecPlan_7 1	3.1	1.4	2.2	0.027
PostSecPlan_7 2	6.9	1.6	4.3	<.001
PostSecPlan_7 3	3.2	0.7	4.7	<.001
PostSecPlan_7 4	0.0	.	.	.
EventFieldTrip_7	-3.1	1.0	-3.2	0.002
EventPTA_7	2.3	0.7	3.4	0.001
TeamSport_7	-14.6	4.3	-3.4	0.001

* As noted in the text, interpretation of these model parameters is hazardous because regression to the mean was strongly present. Thus, variables that are predictive of a high seventh-grade score on the College Orientation Index may be negatively related to change in the College Orientation Index.

After the model had been fit, predicted scores were subtracted from actual change scores to yield the Unexplained Growth index. Given the low R^2 for the Growth model, the impact of this adjustment was modest. The correlation between the raw change in the College Orientation Index and the Unexplained Growth index was 0.98. Scores on this adjusted change measure were then averaged within the highest reported or imputed quintile of participation hours by school category to produce the estimates shown in Table I-6 and discussed in Chapter 3 under the heading "Effects of Participation in GEAR UP Services on College Orientation."

[64] The Box-Cox transform was calculated by shifting the change scores so they were all positive and the exponentiating by 1.17931. After the model had been fit, the reverse transformation was applied to predicted values to obtain predicted change in the College Orientation Index.

Table I-6. Effects of intense participation in GEAR UP services on unexplained growth in the College Orientation Index

Group	Top quintile of students in terms of actual or imputed participation hours	Average score on unexplained growth in College Orientation Index	95% Confidence interval
1	GEAR UP schools with complete participation data	0.24	(-1.19,1.68)
2	GEAR UP schools with incomplete participation data	0.18	(-0.95,1.32)
3	Non-GEAR UP schools	-1.67 *	(-2.62,-0.71)
1–3	Participation Effect	1.91 *	(0.18,3.64)

NOTES: The number -0.0 indicates that the true value of this number is less than zero, but more than -0.1. Detail may not sum to totals because of rounding.

No weights were used and there was no correction for clustering, unlike the techniques used for all other analyses in chapter 3. The confidence intervals shown in table I-6 were estimated using Rubin's formula for post-imputation variance estimation, assuming that the students in each school group were a simple random sample with replacement.[65] Some additional detail on the variance calculation is given below.

Let y_{irj} be the score on Unexplained Growth for the *j*-th student within the *i*-th school group on the *r*-th repeated imputation and let $n_{ir.}$ be the number of students in that school group on that imputation. Then the estimated standard error on the average response was

$$\hat{s}_i = \sqrt{\frac{1}{5}\sum_{r=1}^{5}\frac{1}{n_{ir.}-1}\sum_{j=1}^{n_{ir}}\left(y_{irj}-\bar{y}_{ir.}\right)^2 + \frac{6}{5}\frac{1}{4}\sum_{r=1}^{5}\left(\bar{y}_{ir.}-\bar{y}_{i..}\right)^2},$$

where

$\bar{y}_{ir.} = \frac{1}{n_{ir}}\sum_{j=1}^{n_{ir}} y_{irj}$ is the average Unexplained Growth score for the *i*-th school group on the *r*-th imputation and

$\bar{y}_{i..} = \frac{1}{5}\sum_{r=1}^{5}\bar{y}_{ir.}$ is the overall average Unexplained Growth score for the *i*-th school group across all five imputations.

[65] D.B. Rubin. Multiple Imputation after 18+ Years. *Journal of the American Statistical Association*, 91, 473-489: 1996.

Appendix J

Glossary

This appendix contains the definitions of the variables used in the analyses reported in *The Early Outcomes of the GEAR UP Program—Final Report* (see Table J-1, which starts on page J-4). Explanation of each of the columns used in that table is provided here.

- **Variable Name.** Identifies the names of the variables used throughout the analysis and the report.
- **Variable Type.** Identifies each variable's type. An explanation of each type appears on page J-2.
- **Definition.** Gives the meaning of each variable.
- **Source: Instrument.** Identifies the data collection instrument from which the variable originates.
- **Source: Item(s).** Provides the information on each variable's source. For example, SQ34b_8 refers to question number 34b of the student survey.
  - SQ = student survey,
  - PQ = parent interview,
  - _7 = seventh grade,
  - _8 = eighth grade, and
  - SIM = student administrative records.

  If a variable is a computed variable, the names of the variables used to create that variable are provided.
- **Part of an Index.** If the variable is part of an index, the index is identified in this column.

Explanation of the codes used in the Variable Type column are provided below.

- **Anti-PSE Ordinal.** Responses to these questions form an ordinal scale with lower values corresponding to behavior more consistent with college-oriented knowledge, attitudes and behaviors.

- **Binary.** Only two possible answer categories ("yes" and "no") were printed on the questionnaire. The response that is more consistent with college-oriented knowledge, attitudes and behaviors has a value of 1, while the other has a value of 0. (A few of the binary variables were standardized to have 0 mean and unit standard deviation on a particular set of cases, but generally, most are coded 1 or 0.)

- **Binary C.** Several answer categories were printed in the questionnaire for these questions, but they are all coded as either 1 (for responses more consistent with college-oriented knowledge, attitudes, and behaviors) or as 0 (for the others).

- **Binary DK.** These questions are similar to binary ones, except the answer category of "don't know," was printed in the questionnaire. Responses of "don't know" are scored as a 0.

- **Binary DNH.** These questions are similar to binary ones, except the answer category of School Does Not Have, was printed in the questionnaire. Responses of "School Does Not Have" are scored as 0.

- **Binary Student Information Matrix (SIM).** These are SIM questions with only two possible responses. There were, however, a number of missing or "don't know" values for students. These values were dropped. The remaining values were changed so that a student that exhibited the trait that the variable represents were given a 1 for that variable, and the rest were given a 0. (The Gender variable was an exception, because the values were 1 for male and 2 for female.)

- **Calculated Binary.** Calculated variables were created by the researchers. They are based on specific student or parent interview questions, SIM information or a combination of items from those sources. This type of calculated variable indicates the presence of a trait with a 1 and the absence of that trait with a 0.

- **Calculated Number.** Calculated variables were created by the researchers. They are based on specific student or parent interview questions, SIM information or a combination of items from those sources. This type of calculated variable provides a number, usually a count of something or a grade point average (GPA).

- **Count.** The responses to these questions are simply a count of some type of activity. Extreme outliers were dropped.

- **Index.** Variables are summations of several other variables when higher values correspond to behavior more consistent with college-oriented knowledge, attitudes and behaviors.

- **Indicator.** Variables are represented by either a number or a series of letters that allow the researcher to determine specific characteristics of the case studied. For the purposes of these data, the number is an identifier and the letters indicate which cases have complete information from different sources.

- **Multinomial.** Several categorical responses are permitted to these questions, and the possible responses cannot be ranked in any order.

- **Neutral Ordinal.** Several categorical responses are permitted to these questions, and the possible responses can be ranked in an order, but not one that correlates with activity that is more or less consistent with college-oriented knowledge, attitudes and behaviors.

- **Pro-Postsecondary Education (PSE) Ordinal.** Responses to these questions form an ordinal scale, with higher values corresponding to behavior more consistent with college-oriented knowledge, attitudes and behaviors. (When the original ordering had high values corresponding to less pro-college characteristics, the order was reversed in creating these variables.).

- **Pro-PSE Ordinal DK.** Responses to these questions form an ordinal scale, with higher values corresponding to behavior more consistent with college-oriented knowledge, attitudes and behaviors. Responses of "don't know" are assigned values that are in the middle of the other response values.

- **Predicted.** Variables indicate a specific predicted value for some characteristic. These values are used in analysis.

- **Weight.** Variables indicate replicate weights used in the analyses.

Table J-1. Definitions of variables used in the analyses report

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
AbsentDays_7	Pro-PSE ordinal	How many days student reported being absent from school in the past month	7th-grade Student Survey	SQ31_7	Academic_7
AbsentDays_8	Pro-PSE ordinal	How many days student reported being absent from school in the past month	8th-grade Student Survey	SQ31_8	Academic_8
AboveEnglish	Calculated binary	Whether student was in an English class considered above his or her grade level	Transcript data	Not applicable for transcript variables	
AboveFLanguage	Calculated binary	Whether student was in a foreign language class considered above his or her grade level	Transcript data	Not applicable for transcript variables	
AboveMathematics	Calculated binary	Whether student was in a mathematics class considered above his or her grade level	Transcript data	Not applicable for transcript variables	
AboveScience	Calculated binary	Whether student was in a science class considered above his or her grade level	Transcript data	Not applicable for transcript variables	
Academic_7	Index	A measure of student's attitude toward school. This variable is contained in table 3-2d.	7th-grade Student Survey	HowHard_7, HowGood_7, ImpWork_7, Grades_7, AbsentDays_7, SkipClasses_7	CollegeBound_7, CollegeBoundRev_7
Academic_8	Index	A measure of student's attitude toward school. This variable is contained in table 3-2d.	8th-grade Student Survey	HowHard_8, HowGood_8, ImpWork_8, Grades_8, AbsentDays_8, SkipClasses_8	CollegeBound_8, CollegeBoundRev_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
AcademicGPA	Calculated number	Student's GPA for academic courses	Transcript data	Not applicable for transcript variables	
AcademicRigor1	Calculated number	Number of pipelines completed at or above grade level	Transcript data	Not applicable for transcript variables	
AcademicRigor2	Calculated number	Number of pipelines completed above grade level	Transcript data	Not applicable for transcript variables	
AdultHangFreq_7	Neutral ordinal	How often student reported doing things with adults, other than their parent(s) or guardian(s), outside of school (higher values indicate activity occurring more frequently)	7th-grade Student Survey	SQ15f_7	ExtraFreq_7
AdultHangFreq_8	Neutral ordinal	How often student reported doing things with adults, other than their parent(s) or guardian(s), outside of school (higher values indicate activity occurring more frequently)	8th-grade Student Survey	SQ15f_8	ExtraFreq_8
Adultmentor_7	Binary C	How often student reported meeting with an adult mentor such as a Big Brother or Big Sister	7th-grade Student Survey	SQ23a_7	
Adultmentor_8	Binary C	How often student reported meeting with an adult mentor such as a Big Brother or Big Sister	8th-grade Student Survey	SQ23a_8	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
AdvisClassNeed_7	Binary	Whether student reported talking with a school counselor or someone else at the school about the classes needed to get into college	7th-grade Student Survey	SQ34b_7	
AdvisClassNeed_8	Binary	Whether student reported talking with a school counselor or someone else at the school about the classes needed to get into college	8th-grade Student Survey	SQ34b_8	
AdvisReadyforColl_7	Binary	Whether student reported having a one-on-one counseling or advising session about getting ready for college	7th-grade Student Survey	SQ25a_7	
AdvisReadyforColl_8	Binary	Whether student reported having a one-on-one counseling or advising session about getting ready for college	8th-grade Student Survey	SQ25a_8	
AdvisReadyforHS_7	Binary	Whether student reported having a one-on-one counseling or advising session about getting ready for high school	7th-grade Student Survey	SQ24a_7	
AdvisReadyforHS_8	Binary	Whether student reported having a one-on-one counseling or advising session about getting ready for high school	8th-grade Student Survey	SQ24a_8	
AnySibling_7	Binary DK	Parent report of whether student had an older sibling	7th-grade Parent Interview	PQ34_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
AnySibling_8	Binary DK	Parent report of whether student had an older sibling	8th-grade Parent Interview	PQ34_8	
ArtsTutother_7	Binary C	Whether student reported receiving English or language arts tutoring from someone other than a family member	7th-grade Student Survey	SQ21a_7	
ArtsTutother_8	Binary C	Whether student reported receiving English or language arts tutoring from someone other than a family member	8th-grade Student Survey	SQ21a_8	
AttendClforColl_7	Binary	Whether student reported attending a class or meeting about getting ready for college	7th-grade Student Survey	SQ26a_7	
AttendClforColl_8	Binary	Whether student reported attending a class or meeting about getting ready for college	8th-grade Student Survey	SQ26a_8	
AttendMeetCollPrep_7	Binary C	Whether parent reported attending meetings on preparatory curricula. This variable is contained in table 3-3c.	7th-grade Parent Interview	PQ13a_7	
AttendMeetCollPrep_8	Binary	Whether parent reported attending meetings on preparatory curricula. This variable is contained in table 3-3c.	8th-grade Parent Interview	PQ13a_8	
AttendPlays_7	Binary	Whether student reported attending play or other performances at a theater	7th-grade Student Survey	SQ16d_7	NumOutAct_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
AttendPlays_8	Binary	Whether student reported attending play or other performances at a theater	8th-grade Student Survey	SQ16d_8	NumOutAct_8
Awards7	Binary SIM	Whether student received any honors or awards during 7th grade	7th-grade SIM	Not applicable for SIM variables	
Awards8	Binary SIM	Whether student received any honors or awards during 8th grade	8th-grade SIM	Not applicable for SIM variables	
BabysittingHours_7	Neutral ordinal	How long each week student reported babysitting younger siblings (higher values indicate more time spent babysitting)	7th-grade Student Survey	SQ9_7	
BabysittingHours_8	Neutral ordinal	How long each week student reported babysitting younger siblings (higher values indicate more time spent babysitting)	8th-grade Student Survey	SQ9_8	
Band_7	Binary DNH	Whether student reported participating in the school band, orchestra, chorus, choir or other music group that year	7th-grade Student Survey	SQ12c_7	NumSchoolAct_7
Band_8	Binary DNH	Whether student reported participating in the school band, orchestra, chorus, choir or other music group that year	8th-grade Student Survey	SQ12c_8	NumSchoolAct_8
Black	Calculated binary	Whether student was African-American, not Hispanic	Student Survey, SIM, and Parent Interview	SQ56, SQ57, SIM information, PQ43, and PQ44, in that order	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
BorBetterAdvEnglish	Calculated binary	Whether student had a grade of "B" or better in an advanced English course	Transcript data	Not applicable for transcript variables	
BorBetterAdvForeign	Calculated binary	Whether student had a grade of "B" or better in an advanced foreign language course	Transcript data	Not applicable for transcript variables	
BorBetterAdvMathematics	Calculated binary	Whether student had a grade of "B" or better in an advanced mathematics course	Transcript data	Not applicable for transcript variables	
BorBetterAdvScience	Calculated binary	Whether student had a grade of "B" or better in an advanced science course	Transcript data	Not applicable for transcript variables	
Cheerleading_7	Binary DNH	Whether student reported participating in the school cheerleading, pom squad, drill team or dance team that year	7th-grade Student Survey	SQ12f_7	NumSchoolAct_7
Cheerleading_8	Binary DNH	Whether student reported participating in the school cheerleading, pom squad, drill team or dance team that year	8th-grade Student Survey	SQ12f_8	NumSchoolAct_8
ChessClub_7	Binary DNH	Whether student reported participating in the school hobby clubs such as photography and chess that year	7th-grade Student Survey	SQ12i_7	NumSchoolAct_7
ChessClub_8	Binary DNH	Whether student reported participating in the school hobby clubs such as photography and chess that year	8th-grade Student Survey	SQ12i_8	NumSchoolAct_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Childpartknow_7	Binary	Whether parent reported learning about the child's activities through a letter or written notice	7th-grade Parent Interview	PQ12a_7	
Childpartknow_8	Binary	Whether parent reported learning about the child's activities through a letter or written notice	8th-grade Parent Interview	PQ12a_8	
ChurchFreq_7	Neutral ordinal	How often student reported spending time participating in religious activities outside of school (higher values indicate activity occurring more frequently)	7th-grade Student Survey	SQ15b_7	ExtraFreq_7
ChurchFreq_8	Neutral ordinal	How often student reported spending time participating in religious activities outside of school (higher values indicate activity occurring more frequently)	8th-grade Student Survey	SQ15b_8	ExtraFreq_8
ClassSkipping_7	Anti-PSE ordinal	Student's report of how many classes he or she skipped or cut during the past month. Same as SkipClasses_7, except order of coding.	7th-grade Student Survey	SQ33_7	
ClubHours_7	Pro-PSE ordinal	How much average weekly time student reported spending on all school activities like sports and clubs	7th-grade Student Survey	SQ14_7	ECBusy_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ClubHours_8	Pro-PSE ordinal	How much average weekly time student reported spending on all school activities like sports and clubs	8th-grade Student Survey	SQ14_8	ECBusy_8
ClubLeader_7	Binary DK	Whether student reported serving as an officer in any of the activities from NumSchoolAct_7	7th-grade Student Survey	SQ13_7	ECBusy_7
ClubLeader_8	Binary DK	Whether student reported serving as an officer in any of the activities from NumSchoolAct_8	8th-grade Student Survey	SQ13_8	ECBusy_8
CollegeAffordable_7	Pro-PSE ordinal	How likely parent thinks it is that the student will be able to afford to attend a 4-year postsecondary institution	7th-grade Parent Interview	PQ28_7	PExpect_7
CollegeAffordable_8	Pro-PSE ordinal	How likely parent thinks it is that the student will be able to afford to attend a 4-year postsecondary institution	8th-grade Parent Interview	PQ28_8	PExpect_8
CollegeBound_7	Index	Overall measure of how well student is progressing on the path to postsecondary education	7th-grade Student Survey	Academic_7, Performance_7, ExpectPSE_7, Pexpect_7, StdParTalk_7, ReadingHours_7	
CollegeBound_8	Index	Overall measure of how well student is progressing on the path to postsecondary education	8th-grade Student Survey	Academic_8, Performance_8, ExpectPSE_8, Pexpect_8, StdParTalk_8, ReadingHours_8	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
CollegeBoundRev_7	Index	Revised version of overall measure of how well student is progressing on the path to postsecondary education	7th-grade Student Survey	Academic_7, Performance_7, ExpectPSERev_7, Pexpect_7, StdParTalk_7, ReadingHours_7	
CollegeBoundRev_8	Index	Revised version of overall measure of how well student is progressing on the path to postsecondary education	8th-grade Student Survey	Academic_8, Performance_8, ExpectPSERev_8, Pexpect_8, StdParTalk_8, ReadingHours_8	
CollegeClose_7	Binary DK	Percentage of parents who anticipated college or other postsecondary school attendance for their child. This variable is contained in table 3-2c.	7th-grade Parent Interview	PQ22_7, PQ24_7	PExpect_7
CollegeClose_8	Binary DK	Percentage of parents who anticipated college or other postsecondary school attendance for their child. This variable is contained in table 3-2c.	8th-grade Parent Interview	PQ22_8, PQ24_8	PExpect_8
CollegeMoreMoney_7	Pro-PSE ordinal DK	How sure student is about the assertion that someone with a college degree earns more money than someone who does not finish college	7th-grade Student Survey	SQ38_7	ExpectPSERev_7, KnowPSE_7
CollegeMoreMoney_8	Pro-PSE ordinal DK	How sure student is about the assertion that someone with a college degree earns more money than someone who does not finish college	8th-grade Student Survey	SQ38_8	ExpectPSERev_8, KnowPSE_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ComputerAtHome_7	Binary	Parent report of whether there is a computer in the home	7th-grade Parent Interview	PQ38_7	
ComputerAtHome_8	Binary	Parent report of whether there is a computer in the home	8th-grade Parent Interview	PQ38_8	
ComputerFreq_7	Neutral ordinal	How often student reported spending time using a personal computer outside of school (higher values indicate activity occurring more frequently)	7th-grade Student Survey	SQ15a_7	ExtraFreq_7
ComputerFreq_8	Neutral ordinal	How often student reported spending time using a personal computer outside of school (higher values indicate activity occurring more frequently)	8th-grade Student Survey	SQ15a_8	ExtraFreq_8
Confer_events_7	Index	Measure of how often parent attends meetings with teachers and school events	7th-grade Parent Interview	ConferFreq_7, NumEventType_7	ParInvolve_7
Confer_events_8	Index	Measure of how often parent attends meetings with teachers and school events	8th-grade Parent Interview	ConferFreq_8, NumEventType_8	ParInvolve_8
ConferBehave_7	Index	Number of meetings parent has reported having with the student's teacher about behavioral problems	7th-grade Parent Interview	PQ10b_7, ConferFreq_7	NumConfType_7
ConferBehave_8	Index	Number of meetings parent has reported having with the student's teacher about behavioral problems	8th-grade Parent Interview	PQ10b_8, ConferFreq_8	NumConfType_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ConferFreq_7	Pro-PSE ordinal	Number of meetings parent has reported having with the child's teachers since the beginning of the school year	7th-grade Parent Interview	PQ8_7, PQ9_7	
ConferFreq_8	Pro-PSE ordinal	Number of meetings parent has reported having with the child's teachers since the beginning of the school year	8th-grade Parent Interview	PQ8_8, PQ9_8	
ConferHomework_7	Index	Number of meetings parent has reported having with the student's teacher about problems with a specific homework assignment	7th-grade Parent Interview	PQ10a_7, ConferFreq_7	NumConfType_7
ConferHomework_8	Index	Number of meetings parent has reported having with the student's teacher about problems with a specific homework assignment	8th-grade Parent Interview	PQ10a_8, ConferFreq_8	NumConfType_8
ConferOther_7	Index	Number of meetings parent has reported having with the student's teacher about a reason other than the ones from ConferBehave_7, ConferHomework_7 or ConferProgress_7	7th-grade Parent Interview	PQ10d_7, ConferFreq_7	NumConfType_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ConferOther_8	Index	Number of meetings parent has reported having with the student's teacher about a reason other than the ones from ConferBehave_8, ConferHomework_8 or ConferProgress_8	8th-grade Parent Interview	PQ10d_8, ConferFreq_8	NumConfType_8
ConferProgress_7	Index	Number of meetings parent has reported having with the student's teacher about the student's overall academic performance	7th-grade Parent Interview	PQ10c_7, ConferFreq_7	NumConfType_7
ConferProgress_8	Index	Number of meetings parent has reported having with the student's teacher about the student's overall academic performance	8th-grade Parent Interview	PQ10c_8, ConferFreq_8	NumConfType_8
CutClass_8	Binary	Whether student skipped classes at least once in past month	8th-grade Student survey	SkipClasses_8	
DadHelp_7	Neutral ordinal	How frequently student reported that father or male guardian helped with homework (higher values indicate more frequent help)	7th-grade Student Survey	SQ6_7	ParentHelp_7
DadHelp_8	Neutral ordinal	How frequently student reported that father or male guardian helped with homework (higher values indicate more frequent help)	7th-grade Student Survey	SQ6_8	ParentHelp_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
DefColMoreMoney_7	Binary C	Percentage of students who think college graduates earn higher salaries than others. This variable is contained in table 3-3a.	7th-grade Student Survey	SQ38a_7	
DefColMoreMoney_8	Binary C	Percentage of students who think college graduates earn higher salaries than others. This variable is contained in table 3-3a.	8th-grade Student Survey	SQ38a_8	
DefGoCollege_7	Binary C	Percentage of students who say they will "definitely" go to college. This variable is contained in table 3-2a.	7th-grade Student Survey	SQ40_7	
DefGoCollege_8	Binary C	Percentage of students who say they will "definitely" go to college. This variable is contained in table 3-2a.	8th-grade Student Survey	SQ40_8	
DontNeedHelp_7	Binary C	Student's report that he or she never needs homework help from either parent or guardian	7th-grade Student Survey	SQ5_7, SQ6_7	
DontNeedHelp_8	Binary C	Student's report that he or she never needs homework help from either parent or guardian	8th-grade Student Survey	SQ5_8, SQ6_8	
Drama_7	Binary DNH	Whether student reported participating in the school drama club, school play or musical that year	7th-grade Student Survey	SQ12d_7	NumSchoolAct_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Drama_8	Binary DNH	Whether student reported participating in the school drama club, school play or musical that year	8th-grade Student Survey	SQ12d_8	NumSchoolAct_8
ECBusy_7	Index	Measure of student's participation in extracurricular activities. This variable is contained in table 3-2d.	7th-grade Student Survey	Clubleader_7, ClubHours_7, NumSchoolAct_7, ExtraFreq_7, ParentAttends_7, NumOutAct_7	
ECBusy_8	Index	Measure of student's participation in extracurricular activities. This variable is contained in table 3-2d.	8th-grade Student Survey	Clubleader_8, ClubHours_8, NumSchoolAct_8, ExtraFreq_8, ParentAttends_8, NumOutAct_8	
EdFor30_7	Pro-PSE ordinal DK	How much education student thinks he or she will need to get the kind of job chosen in ProfAspiration_7 by age 30	7th-grade Student Survey	SQ46_7	ExpectPSE_7
EdFor30_8	Pro-PSE ordinal DK	How much education student thinks he or she will need to get the kind of job chosen in ProfAspiration_8 by age 30	8th-grade Student Survey	SQ46_8	ExpectPSE_8
EnglishGPA	Calculated number	Student's GPA for English courses	Transcript data	Not applicable for transcript variables	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
EnglishHomework_7	Neutral ordinal	How much time a week student reported spending on English and language arts homework (higher values indicate more time studying)	7th-grade Student Survey	SQ4b_7	HomeworkHours_7
EnglishHomework_8	Neutral ordinal	How much time a week student reported spending on English and language arts homework (higher values indicate more time studying)	8th-grade Student Survey	SQ4b_8	HomeworkHours_8
EnglishPipeline	Calculated number	Highest level of English taken during SY2001–02	Transcript data	Not applicable for transcript variables	
EnufInfo_7	Pro-PSE ordinal	Whether parent reported receiving some or enough information on entrance requirements. This variable is contained in table 3-3c.	7th-grade Parent Interview	PQ27_7	ParPrep_7
EnufInfo_8	Pro-PSE ordinal	Whether parent reported receiving some or enough information on entrance requirements. This variable is contained in table 3-3c.	8th-grade Parent Interview	PQ27_8	ParPrep_8
ESLBil7	Binary SIM	Student was in an English as a second language or bilingual program during 7th grade	7th-grade SIM	Not applicable for SIM variables	
ESLBil8	Binary SIM	Student was in an English as a second language or bilingual program during 8th grade	8th-grade SIM	Not applicable for SIM variables	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
EventBacktoSchool_7	Binary DK	Percentage of parents who reported attending back-to-schools nights. This variable is contained in table 3-3d.	7th-grade Parent Interview	PQ14a_7	NumEventType_7
EventBacktoSchool_8	Binary DK	Percentage of parents who reported attending back-to-schools nights. This variable is contained in table 3-3d.	8th-grade Parent Interview	PQ14a_8	NumEventType_8
EventFieldTrip_7	Binary DK	Percentage of parents who reported attending a field trip, such as to a museum or the zoo. This variable is contained in table 3-3d.	7th-grade Parent Interview	PQ14d_7	NumEventType_7
EventFieldTrip_8	Binary DK	Percentage of parents who reported attending a field trip, such as to a museum or the zoo. This variable is contained in table 3-3d.	8th-grade Parent Interview	PQ14d_8	NumEventType_8
EventPlaySport_7	Binary DK	Percentage of parents who reported attending a school event, like a play or sporting event. This variable is contained in table 3-3d.	7th-grade Parent Interview	PQ14c_7	NumEventType_7
EventPlaySport_8	Binary DK	Percentage of parents who reported attending a school event, like a play or sporting event. This variable is contained in table 3-3d.	8th-grade Parent Interview	PQ14c_8	NumEventType_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
EventPTA_7	Binary DK	Percentage of parents who reported attending PTA meetings. This variable is contained in table 3-3d.	7th-grade Parent Interview	PQ14b_7	NumEventType_7
EventPTA_8	Binary DK	Percentage of parents who reported attending PTA meetings. This variable is contained in table 3-3d.	8th-grade Parent Interview	PQ14b_8	NumEventType_8
ExAbsnc7	Count	Number of excused absences for student during the 7th grade	7th-grade SIM	Not applicable for SIM variables	
ExAbsnc8	Count	Number of excused absences for student during the 8th grade	8th-grade SIM	Not applicable for SIM variables	
ExpectPSE_7	Index	Measure of student's expectations about postsecondary education	7th-grade Student Survey	LikelyGoCollege_7, ImpGoCollege_7, HowFarSchool_7, EdFor30_7	ExpectPSERev_7, CollegeBound_7, CollegeBoundRev_7
ExpectPSE_8	Index	Measure of student's expectations about postsecondary education	8th-grade Student Survey	LikelyGoCollege_8, ImpGoCollege_8, HowFarSchool_8, EdFor30_8	ExpectPSERev_8, CollegeBound_8, CollegeBoundRev_8
ExpectPSERev_7	Index	Revised version of ExpectPSE, which measures student's expectations about postsecondary education. This variable is contained in table 3-2a.	7th-grade Student Survey	ExpectPSE_7, Heard4Year_7, NumPeopleTalkedPSE_7, CollegeMoreMoney_7	CollegeBoundRev_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ExpectPSERev_8	Index	Revised version of ExpectPSE, which measures student's expectations about postsecondary education. This variable is contained in table 3-2a.	8th-grade Student Survey	ExpectPSE_8, Heard4Year_8, NumPeopleTalkedPSE_8, CollegeMoreMoney_8	CollegeBoundRev_8
Expel7	Count	Number of expulsions for student during 7th grade	7th-grade SIM	Not applicable for SIM variables	
Expel8	Count	Number of expulsions for student during 8th grade	8th-grade SIM	Not applicable for SIM variables	
ExTardy7	Count	Number of excused tardies for student during 7th grade	7th-grade SIM	Not applicable for SIM variables	
ExTardy8	Count	Number of excused tardies for student during 8th grade	8th-grade SIM	Not applicable for SIM variables	
ExtraFreq_7	Index	Frequency that student reported using a computer, participating in religious activities, volunteering, spending time with friends, doing things with family or spending time with other adults	7th-grade Student Survey	ComputerFreq_7, ChurchFreq_7, VolunteerFreq_7, FriendFreq_7, FamilyFreq_7, AdultHangFreq_7	ECBusy_7
ExtraFreq_8	Index	Frequency that student reported using a computer, participating in religious activities, volunteering, spending time with friends, doing things with family or spending time with other adults	8th-grade Student Survey	ComputerFreq_8, ChurchFreq_8, VolunteerFreq_8, FriendFreq_8, FamilyFreq_8, AdultHangFreq_8	ECBusy_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
FamilyFreq_7	Neutral ordinal	How often student reported spending time doing things with a parent or guardian, outside of school (higher values indicate activity occurring more frequently)	7th-grade Student Survey	SQ15e_7	ExtraFreq_7
FamilyFreq_8	Neutral ordinal	How often student reported spending time doing things with a parent or guardian, outside of school (higher values indicate activity occurring more frequently)	8th-grade Student Survey	SQ15e_8	ExtraFreq_8
FatherGoCollege_7	Binary DK	Whether student reported that his or her father or male guardian attended college	7th-grade Student Survey	SQ47b_7	
FatherGoCollege_8	Binary DK	Whether student reported that his or her father or male guardian attended college	8th-grade Student Survey	SQ47b_8	
FatherOpImport_7	Pro-PSE ordinal	Importance student places on his or her father or male guardian's opinions about the student's education plans	7th-grade Student Survey	SQ18a_7	
FatherOpImport_8	Pro-PSE ordinal	Importance student places on his or her father or male guardian's opinions about the student's education plans	8th-grade Student Survey	SQ18a_8	
FirstGen	Calculated Binary	Whether any of the adults in household attended a 2- or 4-year college program	7th-grade Student Survey	SQ47a_7, SQ47b_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Firstlanguage_7	Binary	Whether student reported English as first language he or she learned to speak at home	7th-grade Student Survey	SQ58_7	
FirstLanguage_8	Binary	Whether student reported English as first language he or she learned to speak at home	8th-grade Student Survey	SQ58_8	ExtraFreq_7
FriendFreq_7	Neutral ordinal	How often student reported spending time doing things with friends outside of school (higher values indicate activity occurring more frequently)	7th-grade Student Survey	SQ15d_7	ExtraFreq_8
FriendFreq_8	Neutral ordinal	How often student reported spending time doing things with friends outside of school (higher values indicate activity occurring more frequently)	8th-grade Student Survey	SQ15d_8	
FriendHelp_7	Binary	Whether student reported receiving homework help from a classmate or friend	7th-grade Student Survey	SQ7e_7	NumHelpers_7
FriendHelp_8	Binary	Whether student reported receiving homework help from a classmate or friend	8th-grade Student Survey	SQ7e_8	NumHelpers_8
FriendOpImport_7	Pro-PSE ordinal	Importance student places on his or her friends' opinions about student's education plans	7th-grade Student Survey	SQ18c_7	
FriendOpImport_8	Pro-PSE ordinal	Importance student places on his or her friends' opinions about student's education plans	8th-grade Student Survey	SQ18c_8	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ForeignLanguageGPA	Calculated number	Student's GPA for foreign language courses	Transcript data	Not applicable for transcript variables	
ForeignLanguagePipeline	Calculated number	Highest level of foreign language taken during SY2001-02	Transcript data	Not applicable for transcript variables	
Gender	Binary SIM	Student's gender ("1" for male, "2" for female)	SIM	Not applicable for SIM variables	
GoodCaseS7	Indicator	Whether 7th grade SIM contained any information	7th-grade SIM	Not applicable for SIM variables	
GoodForms8	Indicator	A list of good 8th grade forms received for student, with "T" for student questionnaire, "P" for parent questionnaire and "S" for SIM	8th-grade Student Survey, Parent Interview and SIM	All items in all three source instruments	
Government_7	Binary DNH	Whether student reported participating in student government that year	7th-grade Student Survey	SQ12e_7	NumSchoolAct_7
Government_8	Binary DNH	Whether student reported participating in student government that year	8th-grade Student Survey	SQ12e_8	NumSchoolAct_8
Grade8Resp	Indicator	Whether student was considered an 8th grade respondent (required either student or parent questionnaire)	8th-grade Student and Parent Interview	All items in both source instruments	
Grades_7	Pro-PSE ordinal	Student's report of his or her own grades	7th-grade Student Survey	SQ17_7	Academic_7
Grades_8	Pro-PSE ordinal	Student's report of his or her own grades	8th-grade Student Survey	SQ17_8	Academic_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
GrParentGoCollege_7	Binary DK	Whether student reported that a grandparent attended college	7th-grade Student Survey	SQ47d_7	
GrParentGoCollege_8	Binary DK	Whether student reported that a grandparent attended college	8th-grade Student Survey	SQ47d_8	
HaveLibraryCard_7	Binary DK	Parent's report of whether anyone in the household had a library card	7th-grade Parent Interview	PQ40_7	
HaveLibraryCard_8	Binary DK	Parent's report of whether anyone in the household had a library card	8th-grade Parent Interview	PQ40_8	
Heard2Year_7	Binary	Whether student had ever heard of a 2-year or community college. Same as HeardCommColl_7, except imputation algorithm.	7th-grade Student Survey	SQ36a_7	HeardOfSchools_7
Heard2Year_8	Binary	Whether student had ever heard of a 2-year or community college. Same as HeardCommColl_8, except imputation algorithm.	8th-grade Student Survey	SQ36a_8	HeardOfSchools_8
Heard4Year_7	Binary	Whether student had ever heard of a 4-year college or university	7th-grade Student Survey	SQ36b_7	HeardOfSchools_7
Heard4Year_8	Binary	Whether student had ever heard of a 4-year college or university	8th-grade Student Survey	SQ36b_8	HeardOfSchools_8
HeardCommColl_7	Binary	Whether student had ever heard of a 2-year or community college. Same as Heard2Year_7, except imputation algorithm.	7th-grade Student Survey	SQ36a_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
HeardCommColl_8	Binary	Whether student had ever heard of a 2-year or community college. Same as Heard2Year_7, except imputation algorithm.	8th-grade Student Survey	SQ36a_8	
HeardOfSchools_7	Binary C	Whether student is familiar with different types of postsecondary institutions. This variable is contained in table 3-3a.	7th-grade Student Survey	Heard2Year_7, Heard4Year_7, HeardVocEd_7	KnowPSE_7
HeardOfSchools_8	Binary C	Whether student is familiar with different types of postsecondary institutions. This variable is contained in table 3-3a.	8th-grade Student Survey	Heard2Year_8, Heard4Year_8, HeardVocEd_8	KnowPSE_8
HeardVocEd_7	Binary	Whether student had ever heard of a vocational, trade or business school	7th-grade Student Survey	SQ36c_7	HeardOfSchools_7
HeardVocEd_8	Binary	Whether student had ever heard of a vocational, trade or business school	8th-grade Student Survey	SQ36c_8	HeardOfSchools_8
HHIncome_7	Neutral ordinal	Parent's report of the total household income (higher values indicate higher income)	7th-grade Parent Interview	PQ42_7	
HHIncome_8	Neutral ordinal	Parent's report of the total household income (higher values indicate higher income)	8th-grade Parent Interview	PQ42_8	
Highest3rdCB	Calculated binary	Whether student was a member in the highest third of 7th grade students with respect to CollegeBound Rev_7	7th-grade Student and Parent Interviews	CollegeBound Rev_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Hispanic	Calculated binary	Whether student was of Hispanic ethnicity of any race	Student Survey, SIM, and Parent Interview	SQ56, SQ57, SIM information, PQ43, and PQ44, in that order	
Hmwkundr_7	Pro-PSE ordinal DK	Combinations of parent questions asking (1) whether student receives homework, (2) where the student most often completes his or her homework and (3) how well the student seems to understand the homework	7th-grade Parent Interview	PQ1_7, PQ3_7, PQ6_7	Performance_7
Hmwkundr_8	Pro-PSE ordinal DK	Combinations of parent questions asking (1) whether or not the student receives homework, (2) where the student most often completes his or her homework and (3) how well the student seems to understand the homework	8th-grade Parent Interview	PQ1_8, PQ3_8, PQ6_8	Performance_8
Hobbies_7	Binary	Whether student reported working on hobbies, arts or crafts on his or her own time	7th-grade Student Survey	SQ16a_7	NumOutAct_7
Hobbies_8	Binary	Whether student reported working on hobbies, arts or crafts on his or her own time	8th-grade Student Survey	SQ16a_8	NumOutAct_8
HomeworkHours_7	Pro-PSE ordinal	How much time student spent on homework. This variable is contained in table 3-2d.	7th-grade Student Survey	SQ4a_7, SQ4b_7, SQ4c_7, SQ4d_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
HomeworkHours_8	Pro-PSE ordinal	How much time student spent on homework. This variable is contained in table 3-2d.	8th-grade Student Survey	SQ4a_8, SQ4b_8, SQ4c_8, SQ4d_8	
Honors7	Binary SIM	Student was in an honors or gifted and talented program during 7th grade	7th-grade SIM	Not applicable for SIM variables	
Honors8	Binary SIM	Student was in an honors or gifted and talented program during 8th grade	8th-grade SIM	Not applicable for SIM variables	
HowFarSchool_7	Pro-PSE ordinal DK	How far the student feels he or she will go after high school	7th-grade Student Survey	SQ42_7	ExpectPSE_7
HowFarSchool_8	Pro-PSE ordinal DK	How far the student feels he or she will go after high school	8th-grade Student Survey	SQ42_8	ExpectPSE_8
HowGood_7	Pro-PSE ordinal	Student's report of how good a student he or she is	7th-grade Student Survey	SQ2_7	Academic_7
HowGood_8	Pro-PSE ordinal	Student's report of how good a student he or she is	8th-grade Student Survey	SQ2_8	Academic_8
HowHard_7	Neutral ordinal	Student's report of how hard he or she works in school, compared with other students (higher values indicate that the student works harder)	7th-grade Student Survey	SQ1_7	Academic_7
HowHard_8	Neutral ordinal	Student's report of how hard he or she works in school, compared with other students (higher values indicate that the student works harder)	8th-grade Student Survey	SQ1_8	Academic_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
IEP7	Binary SIM	Student had an Individualized Education Plan during the 7th grade	7th-grade SIM	Not applicable for SIM variables	
IEP8	Binary SIM	Student had an Individualized Education Plan during the 8th grade	8th-grade SIM	Not applicable for SIM variables	
ImpGoCollege_7	Pro-PSE ordinal	How important student thinks it is for him or her to attend college	7th-grade Student Survey	SQ41_7	ExpectPSE_7
ImpGoCollege_8	Pro-PSE ordinal	How important student thinks it is for him or her to attend college	8th-grade Student Survey	SQ41_8	ExpectPSE_8
ImpWork_7	Pro-PSE ordinal	Student's report of how important he or she thinks it is to work hard in school	7th-grade Student Survey	SQ3_7	Academic_7
ImpWork_8	Pro-PSE ordinal	Student's report of how important he or she thinks it is to work hard in school	8th-grade Student Survey	SQ3_8	Academic_8
InScSusp7	Count	Number of in-school suspensions for student during 7th grade	7th-grade SIM	Not applicable for SIM variables	
InScSusp8	Count	Number of in-school suspensions for student during 8th grade	8th-grade SIM	Not applicable for SIM variables	
InternetAccess_7	Binary	Parent's report of whether or not he or she has Internet access	7th-grade Parent Interview	PQ39_7	
InternetAccess_8	Binary	Parent's report of whether or not he or she has Internet access	8th-grade Parent Interview	PQ39_8	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
InternetFreq_7	Neutral ordinal	Student's report of how often he or she used Internet each week (higher values indicate more frequent use)	7th-grade Student Survey	SQ52_7	
InternetFreq_8	Neutral ordinal	Student's report of how often he or she used Internet each week (higher values indicate more frequent use)	8th-grade Student Survey	SQ52_8	
JSCHOLID	Indicator	School ID (same as first three digits of student ID)	None JSCHOLID was randomly created	None – JSCHOLID was randomly created	
Kim38R_7	Pro-PSE ordinal DK	How sure student is about assertion that someone with a college degree earns more money than someone who does not finish college	7th-grade Student Survey	SQ38_7	
Kim38R_8	Pro-PSE ordinal DK	How sure student is about assertion that someone with a college degree earns more money than someone who does not finish college	8th-grade Student Survey	SQ38_8	
Knowcollcampus_7	Binary DK	Whether the parent reported student's participation in a college campus visit since the beginning of the year	7th-grade Parent Interview	PQ11e_7	
KnowCollCampus_8	Binary DK	Whether the parent reported student's participation in a college campus visit since the beginning of the year	8th-grade Parent Interview	PQ11e_8	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
KnowPSE_7	Index	Student's knowledge of postsecondary education. This variable is contained in table 3-3a.	7th-grade Student Survey	TalkCoursePlanning_7, HeardofSchools_7, NumPeopleTalkedPSE_7, CollegeMoreMoney_7	
KnowPSE_8	Index	Student's knowledge of postsecondary education. This variable is contained in table 3-3a.	8th-grade Student Survey	TalkCoursePlanning_8, HeardofSchools_8, NumPeopleTalkedPSE_8, CollegeMoreMoney_8	
LeagueSports_7	Binary	Whether student reported participating in sports or taking sports lessons that are not at school	7th-grade Student Survey	SQ16c_7	NumOutAct_7
LeagueSports_8	Binary	Whether student reported participating in sports or taking sports lessons that are not at school	8th-grade Student Survey	SQ16c_8	NumOutAct_8
LEP7	Binary SIM	Whether student was designated as limited English proficient during 7th grade	7th-grade SIM	Not applicable for SIM variables	
LEP8	Binary SIM	Whether student was designated as limited English proficient during 7th grade	8th-grade SIM	Not applicable for SIM variables	
LibraryUsage_7	Binary DK	Parent's report of whether anyone in the household uses a library card	7th-grade Parent Interview	PQ41_7	
LibraryUsage_8	Binary DK	Parent's report of whether anyone in the household uses a library card	8th-grade Parent Interview	PQ41_8	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
LikelyGoCollege_7	Pro-PSE ordinal DK	Student's report of how likely he or she is to go to college	7th-grade Student Survey	SQ40_7	ExpectPSE_7
LikelyGoCollege_8	Pro-PSE ordinal DK	Student's report of how likely he or she is to go to college	8th-grade Student Survey	SQ40_8	ExpectPSE_8
Lowest3rdCB	Calculated binary	Whether student was a member in the lowest third of 7th grade students with respect to CollegeBound Rev_7	7th-grade Student and Parent Interview	CollegeBound Rev_7	
Lunch7	Binary SIM	Student participated in the free or reduced-priced lunch program during 7th grade	7th-grade SIM	Not applicable for SIM variables	
Lunch8	Binary SIM	Student participated in the free or reduced-priced lunch program during 8th grade	8th-grade SIM	Not applicable for SIM variables	
MathematicsClub_7	Binary DNH	Whether student reported participating in the school's academic clubs that year	7th-grade Student Survey	SQ12h_7	NumSchoolAct_7
MathematicsClub_8	Binary DNH	Whether student reported participating in the school's academic clubs that year	8th-grade Student Survey	SQ12h_8	NumSchoolAct_8
MathematicsGPA	Calculated number	Student's GPA for mathematics courses	Transcript data	Not applicable for transcript variables	
MathematicsHomework_7	Neutral ordinal	How much time a week student reported spending on mathematics homework (higher values indicate more time spent)	7th-grade Student Survey	SQ4a_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
MathematicsHomework_8	Neutral ordinal	How much time a week student reported spending on mathematics homework (higher values indicate more time spent)	8th-grade Student Survey	SQ4a_8	
MathematicsPipeline	Calculated number	Highest level of mathematics taken during SY2001–02	Transcript data	Not applicable for transcript variables	
MathematicsTutother_7	Binary C	Student's report of how often, since the beginning of the school year, he or she received mathematics tutoring from someone other than a family member	7th-grade Student Survey	SQ20a_7	HomeworkHours_7
MathematicsTutother_8	Binary C	Student's report of how often, since the beginning of the school year, he or she received mathematics tutoring from someone other than a family member	8th-grade Student Survey	SQ20a_8	HomeworkHours_8
Middle3rdCB	Calculated binary	Whether student was a member in the middle third of 7th grade students with respect to CollegeBound Rev_7	7th-grade Student and Parent Interview	CollegeBound Rev_7	
MissSchfrwrong_7	Binary C	Whether student reported skipping or cutting school, or reported missing school because he or she did not feel like going, was unprepared for a test or homework or wanted to spend time with friends not at school	7th-grade Student Survey	SQ32e_7, SQ32f_7, SQ32g_7, SQ33_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
MissSchfrwrong_8	Binary C	Whether student reported skipping or cutting school, or reported missing school because he or she did not feel like going, was unprepared for a test or homework or wanted to spend time with friends not at school	8th-grade Student Survey	SQ32e_8, SQ32f_8, SQ32g_8, SQ33_8	
Mobility_7	Neutral ordinal	Student's report of the number of different schools he or she has attended since first grade (higher values indicate attending a greater number of schools)	7th-grade Student Survey	SQ62_7	
Mobility_8	Neutral ordinal	Student's report of the number of different schools he or she has attended since first grade (higher values indicate attending a greater number of schools)	8th-grade Student Survey	SQ62_8	
MomHelp_7	Neutral ordinal	How frequently student reported that the mother or female guardian helped with homework (higher values indicate more frequent help)	7th-grade Student Survey	SQ5_7	ParentHelp_7
MomHelp_8	Neutral ordinal	How frequently student reported that the mother or female guardian helped with homework (higher values indicate more frequent help)	8th-grade Student Survey	SQ5_8	ParentHelp_8
MotherGoCollege_7	Binary DK	Whether student reported that his or her mother or female guardian attended college	7th-grade Student Survey	SQ47a_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
MotherGoCollege_8	Binary DK	Whether student reported that his or her mother or female guardian attended college	8th-grade Student Survey	SQ47a_8	
MotherOpImport_7	Pro-PSE ordinal	Importance student places on his or her mother's opinions about the student's education plans	7th-grade Student Survey	SQ18b_7	
MotherOpImport_8	Pro-PSE ordinal	Importance student places on his or her mother's opinions about the student's education plans	8th-grade Student Survey	SQ18b_8	
NegJunkHours_7	Pro-PSE ordinal	Time spent not watching TV or playing video games. This variable is contained in table 3-2d.	7th-grade Student Survey	NegTVHours_7, NegVideosHours_7	
NegJunkHours_8	Pro-PSE ordinal	Time spent not watching TV or playing video games. This variable is contained in table 3-2d.	8th-grade Student Survey	NegTVHours_8, NegVideosHours_8	
NegTVHours_7	Pro-PSE ordinal	Student's report of how many hours per weekday he or she usually watched TV	7th-grade Student Survey	SQ10_7	NegJunkHours_7
NegTVHours_8	Pro-PSE ordinal	Student's report of how many hours per weekday he or she usually watched TV	8th-grade Student Survey	SQ10_8	NegJunkHours_8
egVideoHours_7	Pro-PSE ordinal	Student's report of how many hours per weekday he or she usually played video games	7th-grade Student Survey	SQ11_7	NegJunkHours_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
NegVideoHours_8	Pro-PSE ordinal	Student's report of how many hours per weekday he or she usually played video games	8th-grade Student Survey	SQ11_8	NegJunkHours_8
NoFather_7	Binary C	Whether, in response to DadHelp_7, the student reported not having a father or male guardian at home	7th-grade Student Survey	SQ6_7	
NoFather_8	Binary C	Whether, in response to DadHelp_8, the student reported not having a father or male guardian at home	8th-grade Student Survey	SQ6_8	
NumAdult_7	Count	Number of adults the parent reported as living in the home, including the respondent	7th-grade Parent Interview	PQ32_7	
NumAdult_8	Count	Number of adults the parent reported as living in the home, including the respondent	8th-grade Parent Interview	PQ32_8	
NumConfType_7	Count	Count of the different types of conferences the parent reported having with the student's teacher	7th-grade Parent Interview	ConferHomework_7, ConferBehave_7, ConferProgress_7, ConferOther_7	
NumConfType_8	Count	Count of the different types of conferences the parent reported having with the student's teacher	8th-grade Parent Interview	ConferHomework_8, ConferBehave_8, ConferProgress_8, ConferOther_8	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
NumEventType_7	Count	Summation of the number of different types of school events in which parent has participated since the beginning of the school year	7th-grade Parent Interview	EventBacktoSchool_7, EventPTA_7, EventPlaySport_7, EventFieldTrip_7	Confer_events_7
NumEventType_8	Count	Summation of the number of different types of school events in which parent has participated since the beginning of the school year	8th-grade Parent Interview	EventBacktoSchool_8, EventPTA_8, EventPlaySport_8, EventFieldTrip_8	Confer_events_8
NumHelpers_7	Count	Count of different types of people from whom the student reported receiving homework assistance	7th-grade Student Survey	TeacherHelp_7, OtherSchoolHelp_7, UncleHelp_7, SiblingHelp_7, FriendHelp_7, OtherHelp_7	
NumHelpers_8	Count	Count of different types of people from whom the student reported receiving homework assistance	8th-grade Student Survey	TeacherHelp_8, OtherSchoolHelp_8, UncleHelp_8, SiblingHelp_8, FriendHelp_8, OtherHelp_8	
NumOutAct_7	Count	Count of different types of out-of-school activities in which the student reported participating	7th-grade Student Survey	Hobbies_7, TakingClasses_7, LeagueSports_7, AttendPlays_7	ECBusy_7
NumOutAct_8	Count	Count of different types of out-of-school activities in which the student reported participating	8th-grade Student Survey	Hobbies_8, TakingClasses_8, LeagueSports_8, AttendPlays_8	ECBusy_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
NumPeopleTalkedPSE_7	Count	Count of different types of people from whom the student reported talking about continuing education after high school	7th-grade Student Survey	SQ37a_7 through SQ37i_7	ExpectPSERev_7, KnowPSE_7
NumPeopleTalkedPSE_8	Count	Count of different types of people from whom the student reported talking about continuing education after high school	8th-grade Student Survey	SQ37a_8 through SQ37i_8	ExpectPSERev_8, KnowPSE_8
NumSchoolAct_7	Count	Count of different types of in-school activities in which the student reported participating	7th-grade Student Survey	TeamSport_7, SoloSport_7, Band_7, Drama_7, Government_7, Cheerleading_7, Yearbook_7, Mathematics Club_7, Chessclub_7, VocClub_7	ECBusy_7
NumSchoolAct_8	Count	Count of different types of in-school activities in which the student reported participating	8th-grade Student Survey	TeamSport_8, SoloSport_8, Band_8, Drama_8, Government_8, Cheerleading_8, Yearbook_8, Mathematics Club_8, Chessclub_8, VocClub_8	ECBusy_8
NumSibling_7	Count	Parent's report of how many siblings the student had	7th-grade Parent Interview	PQ35_7	
NumSibling_8	Count	Parent's report of how many siblings the student had	8th-grade Parent Interview	PQ35_8	
OlderSibGoCollege_7	Binary DK	Whether student reported that an older sibling attended college	7th-grade Student Survey	SQ47c_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
OlderSibGoCollege_8	Binary DK	Whether student reported that an older sibling attended college	8th-grade Student Survey	SQ47c_8	
OverallGPA	Calculated number	Student's overall GPA	Transcript data	Not applicable for transcript variables	
OtherAdultEd_7	Pro-PSE ordinal	Parent's report of highest education level among all of the adults in the household, excluding the respondent	7th-grade Parent Interview	PQ33_7	
OtherAdultEd_8	Pro-PSE ordinal	Parent's report of highest education level among all of the adults in the household, excluding the respondent	8th-grade Parent Interview	PQ33_8	
OtherHelp_7	Binary	Whether student reported receiving homework help from someone other than those mentioned in TeacherHelp_7, OtherSchoolHelp_7, UncleHelp_7, SiblingHelp_7, FriendHelp_7	7th-grade Student Survey	SQ7f_7	NumHelpers_7
OtherHelp_8	Binary	Whether student reported receiving homework help from someone other than those mentioned in TeacherHelp_8, OtherSchoolHelp_8, UncleHelp_8, SiblingHelp_8, FriendHelp_8	8th-grade Student Survey	SQ7f_8	NumHelpers_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
OtherHomework_7	Neutral ordinal	How much time a week student reported spending on homework other than that mentioned in MathematicsHomework_7, EnglishHomework_7, ScienceHomework_7 (higher values indicate more time spent)	7th-grade Student Survey	SQ4d_7	HomeworkHours_7
OtherHomework_8	Neutral ordinal	How much time a week student reported spending on homework other than that mentioned in MathematicsHomework_7, EnglishHomework_7, ScienceHomework_7 (higher values indicate more time spent)	8th-grade Student Survey	SQ4d_8	HomeworkHours_8
OtherSchoolHelp_7	Binary	Whether student reported receiving homework help from someone at school other than a teacher	7th-grade Student Survey	SQ7b_7	NumHelpers_7
OtherSchoolHelp_8	Binary	Whether student reported receiving homework help from someone at school other than a teacher	8th-grade Student Survey	SQ7b_8	NumHelpers_8
OutSSusp7	Count	Number of out-of-school suspensions for student during 7th grade	7th-grade SIM	Not applicable for SIM variables	
OutSSusp8	Count	Number of out-of-school suspensions for student during 8th grade	8th-grade SIM	Not applicable for SIM variables	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ParentAttends_7	Pro-PSE ordinal	Does the student's mother or female guardian or father or male guardian attend school activities or events	7th-grade Student Survey	SQ49_7, SQ50_7	ECBusy_7
ParentAttends_8	Pro-PSE ordinal	Does the student's mother or female guardian or father or male guardian attend school activities or events	8th-grade Student Survey	SQ49_8, SQ50_8	ECBusy_8
ParentEd_7	Pro-PSE ordinal	Parent's report of his or her highest education level	7th-grade Parent Interview	PQ31_7	
ParentEd_8	Pro-PSE ordinal	Parent's report of his or her highest education level	8th-grade Parent Interview	PQ31_8	
ParentHelp_7	Neutral ordinal	Frequency that student reported receiving homework help from either parent (higher values indicate more frequent help)	7th-grade Student Survey	MomHelp_7, DadHelp_7	
ParentHelp_8	Neutral ordinal	Frequency that student reported receiving homework help from either parent (higher values indicate more frequent help)	8th-grade Student Survey	MomHelp_8, DadHelp_8	
ParGrades_7	Pro-PSE ordinal	Parent's report of what type of student he or she thinks the child is, and how well the parent thinks the student has done since the beginning of the school year, in subjects other than science, mathematics and history or social studies	7th-grade Parent Interview	PQ16_7, PQ17a_7 - PQ17e_7	Performance_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ParGrades_8	Pro-PSE ordinal	Parent's report of what type of student he or she thinks the child is, and how well the parent thinks the student has done, since the beginning of the school year, in subjects other than science, mathematics and history or social studies	8th-grade Parent Interview	PQ16_8, PQ17a_8 - PQ17e_8	Performance_8
ParInvolve_7	Pro-PSE ordinal	Measure of parent knowledge and involvement. This variable is contained in table 3-3b.	7th-grade Parent Interview	ParPrep_7, Confer_events_7	
ParInvolve_8	Pro-PSE ordinal	Measure of parent knowledge and involvement. This variable is contained in table 3-3b.	8th-grade Parent Interview	ParPrep_8, Confer_events_8	
ParPrep_7	Pro-PSE ordinal	Measure of how prepared parent feels about preparing the student to attend college	7th-grade Parent Interview	WritInfo_7, PrepMeet_7, EnufInfo_7, Workshop_7	ParInvolve_7
ParPrep_8	Pro-PSE ordinal	Measure of how prepared parent feels about preparing the student to attend college	8th-grade Parent Interview	WritInfo_8, PrepMeet_8, EnufInfo_8, Workshop_8	ParInvolve_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ParRptHmwkFreq_7	Neutral ordinal	Combination of parent questions asking (1) if the child receives homework, (2) if the child ever does homework at home, (3) how often the child does homework at home, (4) where the child most often completes homework and (5) how often the child does homework at a place other than home (higher values indicate homework done more frequently)	7th-grade Parent Interview	PQ1_7, PQ2_7, PQ3_7, PQ4_7, PQ2a_7	SDiligent_7
ParRptHmwkFreq_8	Neutral ordinal	Combination of parent questions asking (1) if the child receives homework, (2) if the child ever does homework at home, (3) how often the child does homework at home, (4) where the child most often completes homework and (5) how often the child does homework at a place other than home (higher values indicate homework done more frequently)	8th-grade Parent Interview	PQ1_8, PQ2_8, PQ3_8, PQ4_8, PQ2a_8	SDiligent_8
ParRptHmwkHelp_7	Neutral ordinal	How often parent reported helping the student with homework (higher values indicate help provided more frequently)	7th-grade Parent Interview	PQ7_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ParRptHmwkHelp_8	Neutral ordinal	How often parent reported helping the student with homework (higher values indicate help provided more frequently)	8th-grade Parent Interview	PQ7_8	
ParRptHmwkHour_7	Neutral ordinal	Parent's report of student does homework at home and how much time the child spends doing homework per week, on average (higher values indicate more time spent on homework)	7th-grade Parent Interview	PQ1_7, PQ2_7, PQ2a_7, PQ3_7, PQ5_7	SDiligent_7
ParRptHmwkHour_8	Neutral ordinal	Parent's report of student does homework at home and how much time the child spends doing homework per week, on average (higher values indicate more time spent on homework)	8th-grade Parent Interview	PQ1_8, PQ2_8, PQ2a_8, PQ3_8, PQ5_8	SDiligent_8
ParTalkBother_7	Pro-PSE ordinal	Frequency that student reported talking with parents about things that were bothering him or her	7th-grade Student Survey	SQ48e_7	StdParTalk_7
ParTalkBother_8	Pro-PSE ordinal	Frequency that student reported talking with parents about things that were bothering him or her	8th-grade Student Survey	SQ48e_8	StdParTalk_8
ParTalkEvent_7	Pro-PSE ordinal	Frequency that student reported talking with parents about school activities or events of particular interest to him or her	7th-grade Student Survey	SQ48a_7	StdParTalk_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ParTalkEvent_8	Pro-PSE ordinal	Frequency that student reported talking with parents about school activities or events of particular interest to him or her	8th-grade Student Survey	SQ48a_8	StdParTalk_8
ParTalkGrades_7	Pro-PSE ordinal	Frequency that student reported talking with parents about his or her grades	7th-grade Student Survey	SQ48c_7	StdParTalk_7
ParTalkGrades_8	Pro-PSE ordinal	Frequency that student reported talking with parents about his or her grades	8th-grade Student Survey	SQ48c_8	StdParTalk_8
ParTalkPolitics_7	Pro-PSE ordinal	Frequency that student reported talking with parents about community, national and world events	7th-grade Student Survey	SQ48d_7	StdParTalk_7
ParTalkPolitics_8	Pro-PSE ordinal	Frequency that student reported talking with parents about community, national and world events	8th-grade Student Survey	SQ48d_8	StdParTalk_8
ParTalkSubject_7	Pro-PSE ordinal	Frequency that student reported talking with parents about things that the student has studied in class	7th-grade Student Survey	SQ48b_7	StdParTalk_7
ParTalkSubject_8	Pro-PSE ordinal	Frequency that student reported talking with parents about things that the student has studied in class	8th-grade Student Survey	SQ48b_8	StdParTalk_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Performance_7	Index	Measure parent's perception of their student's attitude. This variable is contained in table 3-2d.	7th-grade Parent Interview	Hmwkundr_7, ParGrades_7, Simphardwork_7	CollegeBound_7, CollegeBoundRev_7
Performance_8	Index	Measure parent's perception of their student's attitude. This variable is contained in table 3-2d.	8th-grade Parent Interview	Hmwkundr_8, ParGrades_8, Simphardwork_8	CollegeBound_8, CollegeBoundRev_8
PExpect_7	Index	Measure of parent's expectations for their child. This variable is contained in table 3-2b.	7th-grade Parent Interview	TalkCollege_7, ultdegree_7, collegeclose_7, collegeAffordable_7	CollegeBound_7, CollegeBoundRev_7
PExpect_8	Index	Measure of parent's expectations for their child. This variable is contained in table 3-2b.	8th-grade Parent Interview	TalkCollege_8, ultdegree_8, collegeclose_8, collegeAffordable_8	CollegeBound_8, CollegeBoundRev_8
PImpHardWork_7	Pro-PSE ordinal	How important parent thinks it is that the child works hard in school	7th-grade Parent Interview	PQ19_7	
PImpHardWork_8	Pro-PSE ordinal	How important parent thinks it is that the child works hard in school	8th-grade Parent Interview	PQ19_8	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
PostSecPlan_7	Pro-PSE ordinal	Student's reported likelihood of going to college, and of those that do not plan to continue his or her education after high school, whether he or she made that decision because he or she plans to join the military service, wants to start a family or needs to take care of his or her family	7th-grade Student Survey	SQ39e_7, SQ40_7, SQ39f_7	
PostSecPlan_8	Pro-PSE ordinal	Student's reported likelihood of going to college, and of those that do not plan to continue his or her education after high school, whether he or she made that decision because he or she plans to join the military service, wants to start a family or needs to take care of his or her family	8th-grade Student Survey	SQ39e_8, SQ40_8, SQ39f_8	
PrepMeet_7	Binary DK	Whether parent reported attending any meetings that discussed the types of classes the student should be taking to prepare for college	7th-grade Parent Interview	PQ26_7	ParPrep_7
PrepMeet_8	Binary DK	Whether parent reported attending any meetings that discussed the types of classes the student should be taking to prepare for college	8th-grade Parent Interview	PQ26_8	ParPrep_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
ProfAspiration_7	Binary C	Student's report of which of several listed occupations comes closest to describing the job he or she expects or plans to have by age 30	7th-grade Student Survey	SQ45_7	
ProfAspiration_8	Binary C	Student's report of which of several listed occupations comes closest to describing the job he or she expects or plans to have by age 30	8th-grade Student Survey	SQ45_8	
RaceEth_7	Multinomial	Student's report of his or her own race/ethnicity "1" for white (except Hispanic), "2' for black (including black Hispanic), "3" for Hispanic (except black Hispanic), "4" for Asian, and "5" for American Indian or Alaska	7th-grade Student Survey	SQ56_7, SQ57_7	
ReadingHours_7	Pro-PSE ordinal	Time each week the student reported as spent reading, aside from homework	7th-grade Student Survey	SQ8_7	CollegeBound_7, CollegeBoundRev_7
ReadingHours_8	Pro-PSE ordinal	Time each week the student reported as spent reading, aside from homework	8th-grade Student Survey	SQ8_8	CollegeBound_7, CollegeBoundRev_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
RevParDKCount_7	Count	Count of the times a parent replied "don't know" on parent questions asking (1) whether student receives homework, (2) how often the student does homework at home, (3) where the student most often completes his or her homework, (4) how often the student does homework at a place other than home, (5) how much average time the student spends doing homework per week, (6) how well the student seems to understand the homework, (7) whether or not the student has participated in tutoring and (8) whether or not the student has visited a job site	7th-grade Parent Interview	PQ1_7, PQ2_7, PQ2a_7, PQ3_7, PQ4_7, PQ5_7, PQ6_7, PQ11a_7-PQ11f_7	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
RevParDKCount_8	Count	Count of the times a parent replied "don't know" on parent questions asking (1) whether or not the student receives homework, (2) how often the student does homework at home, (3) where the student most often completes his or her homework, (4) how often the student does homework at a place other than home, (5) how much average time the student spends doing homework per week, (6) how well the student seems to understand the homework, (7) whether or not the student has participated in tutoring and (8) whether or not the student has visited a job site	8th-grade Parent Interview	PQ1_8, PQ2_8, PQ2a_8, PQ3_8, PQ4_8, PQ5_8, PQ6_8, PQ11a_8-PQ11f_8	
ScienceGPA	Calculated number	Student's GPA for science courses	Transcript data	Not applicable for transcript variables	
ScienceHomework_7	Neutral ordinal	How much time a week student reported spending on science homework (higher values indicate more time spent)	7th-grade Student Survey	SQ4c_7	HomeworkHours_7
ScienceHomework_8	Neutral ordinal	How much time a week student reported spending on science homework (higher values indicate more time spent)	8th-grade Student Survey	SQ4c_8	HomeworkHours_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
SciencePipeline	Calculated number	Highest level of science taken during SY2001–02	Transcript data	Not applicable for transcript variables	
SciTutother_7	Binary C	Frequency student reported receiving science tutoring from someone outside his or her family since the beginning of the year	7th-grade Student Survey	SQ22a_7	
SciTutother_8	Binary C	Frequency student reported receiving science tutoring from someone outside his or her family since the beginning of the year	8th-grade Student Survey	SQ22a_8	
SDiligent_7	Index	Measure of how hard parent feels the student works. This variable is contained in table 3-2d.	7th-grade Parent Interview	ParRptHmwkFreq_7, ParRptHmwkHour_7	
SDiligent_8	Index	Measure of how hard parent feels the student works. This variable is contained in table 3-2d.	8th-grade Parent Interview	ParRptHmwkFreq_8, ParRptHmwkHour_8	
SiblingEd_7	Pro-PSE ordinal	Parent's report of highest education level among the student's older siblings that have lived with the child	7th-grade Parent Interview	PQ36_7	
SiblingEd_8	Pro-PSE ordinal	Parent's report of highest education level among the student's older siblings that have lived with the child	8th-grade Parent Interview	PQ36_8	
SiblingHelp_7	Binary	Whether student reported receiving homework help from a brother or sister	7th-grade Student Survey	SQ7d_7	NumHelpers_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
SiblingHelp_8	Binary	Whether student reported receiving homework help from a brother or sister	8th-grade Student Survey	SQ7d_8	NumHelpers_8
Simphardwork_7	Pro-PSE ordinal	How important parent thinks the child thinks it is to work hard in school	7th-grade Parent Interview	PQ20_7	Performance_7
Simphardwork_8	Pro-PSE ordinal	How important parent thinks the child thinks it is to work hard in school	8th-grade Parent Interview	PQ20_8	Performance_8
SkipClasses_7	Pro-PSE ordinal	Student's report of how many classes he or she skipped or cut during the past month	7th-grade Student Survey	SQ33_7	Academic_7
SkipClasses_8	Pro-PSE ordinal	Student's report of how many classes he or she skipped or cut during the past month	8th-grade Student Survey	SQ33_8	Academic_8
SoloSport_7	Binary DNH	Whether student reported participating in an individual sport at school that year	7th-grade Student Survey	SQ12b_7	NumSchoolAct_7
SoloSport_8	Binary DNH	Whether student reported participating in an individual sport at school that year	8th-grade Student Survey	SQ12b_8	NumSchoolAct_8
StdParTalk_7	Pro-PSE ordinal	Measure of student's reports of how frequently they talk with a parent or guardian about different topics	7th-grade Student Survey	ParTalkEvent_7, ParTalkSubject_7, ParTalkGrades_7, ParTalkPolitics_7, ParTalkBother_7	CollegeBound_7, CollegeBoundRev_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
StdParTalk_8	Pro-PSE ordinal	Measure of student's reports of how frequently they talk with a parent or guardian about different topics	8th-grade Student Survey	ParTalkEvent_8, ParTalkSubject_8, ParTalkGrades_8, ParTalkPolitics_8, ParTalkBother_8	CollegeBound_8, CollegeBoundRev_8
TakingClasses_7	Binary	Whether student reported taking classes that are not at his or her school	7th-grade Student Survey	SQ16b_7	NumOutAct_7
TakingClasses_8	Binary	Whether student reported taking classes that are not at his or her school	8th-grade Student Survey	SQ16b_8	NumOutAct_8
TalkCollege_7	Binary	Percentage of parents who talked with their child about college. This variable is in table 3-2c.	7th-grade Parent Interview	PQ21_7	PExpect_7
TalkCollege_8	Binary	Percentage of parents who talked with their child about college. This variable is contained in table 3-2c.	8th-grade Parent Interview	PQ21_8	PExpect_8
TalkCounCollEntClasses_7	Binary	Whether student reported talking with a school counselor or someone else at the school about the classes needed to get into college	7th-grade Student Survey	SQ34b_7	TalkCoursePlanning_7
TalkCounCollEntClasses_8	Binary	Whether student reported talking with a school counselor or someone else at the school about the classes needed to get into college	8th-grade Student Survey	SQ34b_8	TalkCoursePlanning_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
TalkCounHSGradClasses_7	Binary	Whether student reported talking with a school counselor or someone else at the school about the classes needed to graduate from high school	7th-grade Student Survey	SQ34a_7	TalkCoursePlanning_7
TalkCounHSGradClasses_8	Binary	Whether student reported talking with a school counselor or someone else at the school about the classes needed to graduate from high school	8th-grade Student Survey	SQ34a_8	TalkCoursePlanning_8
TalkCoursePlanning_7	Pro-PSE ordinal	Measure of student's discussions about college and course planning. This variable is contained in table 3-3a.	7th-grade Student Survey	TalkCounHSGrad classes_7, TalkCounCollEnt classes_7, TalkHouseCollEnt classes_7	KnowPSE_7
TalkCoursePlanning_8	Pro-PSE ordinal	Measure of student's discussions about college and course planning. This variable is contained in table 3-3a.	8th-grade Student Survey	TalkCounHSGrad classes_8, TalkCounCollEnt classes_8, TalkHouseCollEnt classes_8	KnowPSE_8
TalkHouseCollEntClasses_7	Binary	Whether student reported talking with any adult in the household about the classes needed to take to get into college since the beginning of the school year	7th-grade Student Survey	SQ35_7	TalkCoursePlanning_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
TalkHouseCollEntClasses_8	Binary	Whether student reported talking with any adult in the household about the classes needed to take to get into college since the beginning of the school year	8th-grade Student Survey	SQ35_8	TalkCoursePlanning_8
TeacherHelp_7	Binary	Whether student reported receiving homework help from a teacher at school	7th-grade Student Survey	SQ7a_7	NumHelpers_7
TeacherHelp_8	Binary	Whether student reported receiving homework help from a teacher at school	8th-grade Student Survey	SQ7a_8	NumHelpers_8
TeacherOpImport_7	Pro-PSE ordinal	Importance student places on his or her favorite teacher's opinions about the student's education plans	7th-grade Student Survey	SQ18f_7	
TeacherOpImport_8	Pro-PSE ordinal	Importance student places on his or her favorite teacher's opinions about the student's education plans	8th-grade Student Survey	SQ18f_8	
TeamSport_7	Binary DNH	Whether student reported participating in the school's team sports that year	7th-grade Student Survey	SQ12a_7	NumSchoolAct_7
TeamSport_8	Binary DNH	Whether student reported participating in the school's team sports that year	8th-grade Student Survey	SQ12a_8	NumSchoolAct_8
TotAbsnc7	Count	Total number of absences for student (excused and unexcused) during 7th grade	7th-grade SIM	Not applicable for SIM variables	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
TotAbsnc8	Count	Total number of absences for student (excused and unexcused) during 8th grade	8th-grade SIM	Not applicable for SIM variables	
TotDisp7	Count	Total number of disciplinary actions taken against student in 7th grade	7th-grade SIM	Not applicable for SIM variables	
TotDisp8	Count	Total number of disciplinary actions taken against student in 8th grade	8th-grade SIM	Not applicable for SIM variables	
TotSusp7	Count	Total number of suspensions for student during 7th grade	7th-grade SIM	Not applicable for SIM variables	
TotSusp8	Count	Total number of suspensions for student during 8th grade	8th-grade SIM	Not applicable for SIM variables	
TotTardy7	Count	Total number of tardies for student (excused and unexcused) during 7th grade	7th-grade SIM	Not applicable for SIM variables	
TotTardy8	Count	Total number of tardies for student (excused and unexcused) during 8th grade	8th-grade SIM	Not applicable for SIM variables	
Truancy_7	Anti-PSE ordinal	Number of days the student reported being absent from school in previous month	7th-grade Student Survey	SQ31_7	
Truancy_8	Anti-PSE ordinal	Number of days the student reported being absent from school in previous month	8th-grade Student Survey	SQ31_8	
Truancy7	Count	Number of truancies for student during 7th grade	7th-grade SIM	Not applicable for SIM variables	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Truancy8	Count	Number of truancies for student during 8th grade	8th-grade SIM	Not applicable for SIM variables	
Ultdegree_7	Pro-PSE ordinal	Parent's report of whether student will continue education after high school and how far the parent thinks the student will go in school	7th-grade Parent Interview	PQ22_7, PQ23_7	PExpect_7
Ultdegree_8	Pro-PSE ordinal	Parent's report of whether student will continue education after high school and how far the parent thinks the student will go in school	8th-grade Parent Interview	PQ22_8, PQ23_8	PExpect_8
UncleHelp_7	Binary	Whether student reported receiving homework help from an adult in the home other than a parent or guardian	7th-grade Student Survey	SQ7c_7	NumHelpers_7
UncleHelp_8	Binary	Whether student reported receiving homework help from an adult in the home other than a parent or guardian	8th-grade Student Survey	SQ7c_8	NumHelpers_8
UnExAbsn7	Count	Number of unexcused absences for student during 7th grade	7th-grade SIM	Not applicable for SIM variables	
UnExAbsn8	Count	Number of unexcused absences for student during 8th grade	8th-grade SIM	Not applicable for SIM variables	
UnExTard7	Count	Number of unexcused tardies for student during 7th grade	7th-grade SIM	Not applicable for SIM variables	
UnExTard8	Count	Number of unexcused tardies for student during 8th grade	8th-grade SIM	Not applicable for SIM variables	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
VisitCollCamp_7	Binary	Whether student reported visiting a college campus since the beginning of the year	7th-grade Student Survey	SQ29a_7	
VisitCollCamp_8	Binary	Whether student reported visiting a college campus since the beginning of the year	8th-grade Student Survey	SQ29a_8	
VocClub_7	Binary DNH	Whether student reported participating in the school's vocational education or professional clubs that year	7th-grade Student Survey	SQ12j_7	NumSchoolAct_7
VocClub_8	Binary DNH	Whether student reported participating in the school's vocational education or professional clubs that year	8th-grade Student Survey	SQ12j_8	NumSchoolAct_8
VolunteerFreq_7	Neutral ordinal	How often student reported doing volunteer or community service beyond any requirements for high school graduation (higher values indicate activity occurring more frequently)	7th-grade Student Survey	SQ15c_7	ExtraFreq_7
VolunteerFreq_8	Neutral ordinal	How often student reported doing volunteer or community service beyond any requirements for high school graduation (higher values indicate activity occurring more frequently)	8th-grade Student Survey	SQ15c_8	ExtraFreq_8

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Volunteerism_7	Binary	Whether parent reported volunteering at child's school since the beginning of the school year	7th-grade Parent Interview	PQ14aa_7	
Volunteerism_8	Binary	Whether parent reported volunteering at child's school since the beginning of the school year	8th-grade Parent Interview	PQ14aa_8	
wgt01	Weight	Replicate baseweight 1	Not applicable for weights	Not applicable for weights	
wgt02	Weight	Replicate baseweight 2	Not applicable for weights	Not applicable for weights	
wgt03	Weight	Replicate baseweight 3	Not applicable for weights	Not applicable for weights	
wgt04	Weight	Replicate baseweight 4	Not applicable for weights	Not applicable for weights	
wgt05	Weight	Replicate baseweight 5	Not applicable for weights	Not applicable for weights	
wgt06	Weight	Replicate baseweight 6	Not applicable for weights	Not applicable for weights	
wgt07	Weight	Replicate baseweight 7	Not applicable for weights	Not applicable for weights	
wgt08	Weight	Replicate baseweight 8	Not applicable for weights	Not applicable for weights	
wgt09	Weight	Replicate baseweight 9	Not applicable for weights	Not applicable for weights	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
wgt10	Weight	Replicate baseweight 10	Not applicable for weights	Not applicable for weights	
wgt11	Weight	Replicate baseweight 11	Not applicable for weights	Not applicable for weights	
wgt12	Weight	Replicate baseweight 12	Not applicable for weights	Not applicable for weights	
wgt13	Weight	Replicate baseweight 13	Not applicable for weights	Not applicable for weights	
wgt14	Weight	Replicate baseweight 14	Not applicable for weights	Not applicable for weights	
wgt15	Weight	Replicate baseweight 15	Not applicable for weights	Not applicable for weights	
wgt16	Weight	Replicate baseweight 16	Not applicable for weights	Not applicable for weights	
wgt17	Weight	Replicate baseweight 17	Not applicable for weights	Not applicable for weights	
wgt18	Weight	Replicate baseweight 18	Not applicable for weights	Not applicable for weights	
White_7	Calculated binary	Whether student was white, not Hispanic	Student Survey, SIM, and Parent Interview	SQ56, SQ57, SIM information, PQ43, and PQ44, in that order	
Workshop_7	Binary	Whether parent reported attending workshops on financial aid. This variable is contained in table 3-3c.	7th-grade Parent Interview	PQ29_7	ParPrep_7

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Workshop_8	Binary	Whether parent reported attending workshops on financial aid. This variable is contained in table 3-3c.	8th-grade Parent Interview	PQ29_8	ParPrep_8
WritInfo_7	Binary DK	Whether parent reported receiving written materials on preparatory curricula. This variable is contained in table 3-3c.	7th-grade Parent Interview	PQ25_7	ParPrep_7
WritInfo_8	Binary DK	Whether parent reported receiving written materials on preparatory curricula. This variable is contained in table 3-3c.	8th-grade Parent Interview	PQ25_8	ParPrep_8
XBetaForCFP_7	Predicted	Predicted logit propensity for membership in GEAR UP school	Not applicable for predicted values	Not applicable for predicted values	
XBetaTOTABS8	Predicted	Predicted total absences as reported on SIM. Used to form clusters for 8th grade SIM imputation	Not applicable for predicted values	Not applicable for predicted values	
XBetaTOTDISP8	Predicted	Predicted total disciplinary actions as reported on SIM. Used to form clusters for 8th grade SIM imputation	Not applicable for predicted values	Not applicable for predicted values	
XBetaUNEXABS8	Predicted	Predicted total unexcused absences as reported on SIM. Used to form clusters for 8th grade SIM imputation	Not applicable for predicted values	Not applicable for predicted values	

Table J-1. Definitions of variables used in the analyses report (continued)

Variable name	Variable type	Definition	Source: Instrument	Source: Item(s)	Used in which index (if any)
Yearbook_7	Binary DNH	Whether student reported participating in the school yearbook, newspaper and literary magazine that year	7th-grade Student Survey	SQ12g_7	NumSchoolAct_7
Yearbook_8	Binary DNH	Whether student reported participating in the school yearbook, newspaper and literary magazine that year	8th-grade Student Survey	SQ12g_8	NumSchoolAct_8

Appendix K

Data Collection Instruments

Seventh-Grade Student Survey

Student Survey
Seventh Grade

Dear Student:
You have been selected to participate in a survey of seventh grade students. The U.S. Department of Education is conducting this survey to learn about your experiences at school. The survey asks about school activities and your plans for the future. Your answers are important for us to understand how to help students just like you prepare for college.

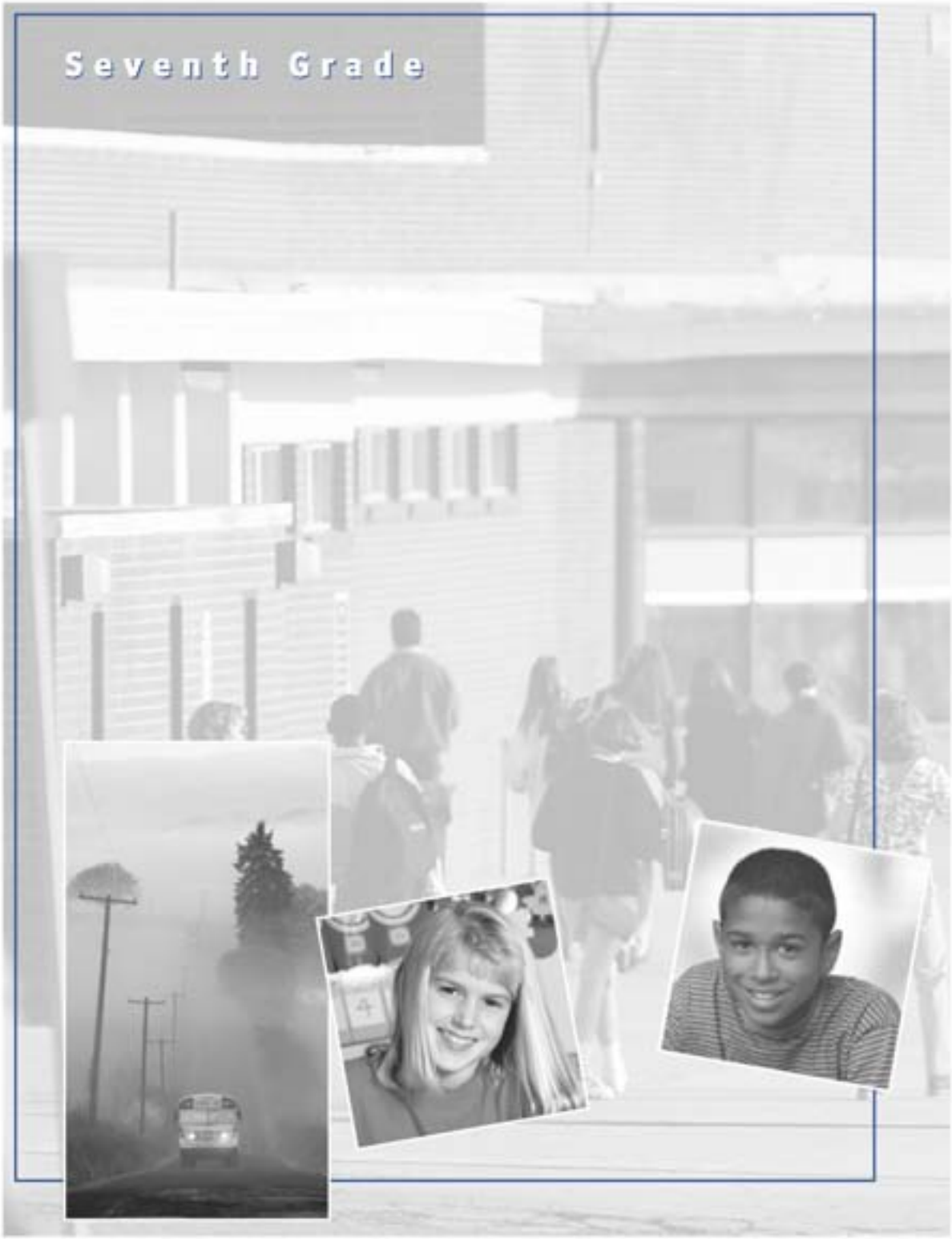
This survey is voluntary. All of your answers will be kept private. No one at your school will know how you responded to any of the questions.

After you have answered all the questions, tear out the page with your name and address information on it. This information is so that we can contact you next year to see how you are doing.

The teacher will then give you an envelope. Put the survey booklet in the envelope. Seal the envelope and give it to your teacher. Your teacher will then collect the address information sheets.

Thank You.

OMB Control #1875-0191, Expiration date: 10/31/2002


Seventh Grade

Student Survey Seventh Grade

ADDRESS INFORMATION

The first few questions ask for information about how to reach you and your family.
After you have completed this information, remove this page by tearing along the perforation.

1. **Please print your name, address, and telephone number:**

Name: _____ _____ _____
First Middle Initial Last

Address: _____ _____ _____
Number Street Name Apt. #

_____ _____ _____
City State Zip Code

Telephone: ( ) ☐ I do not have a telephone

WHEN WE SAY ADULT GUARDIAN, ANSWER FOR THE PARENT (MOTHER OR FATHER), GUARDIAN, OR STEPPARENT WITH WHOM YOU LIVE MOST OF THE TIME.

2. **Please fill in name and phone number of the adult guardian(s) with whom you live most of the time. If you live with only one adult, fill in that person's name in only one place.**

1st Person: _____ _____
First Last

2nd Person: _____ _____
First Last

Telephone: ( ) ☐ Do not have a telephone

3. **Please write in the name, address, and telephone number of a relative or close friend who does not live with you and who will know how to contact you.**

Name: _____ _____ _____
First Middle Initial Last

Address: _____ _____ _____
Number Street Name Apt. #

_____ _____ _____
City State Zip Code

Telephone: ( ) ☐ He/She does not have a telephone

A. SCHOOL AND SCHOOL ACTIVITIES

The next several questions ask you about what you are doing in school this year.

1. Compared with other students, how hard do you think you work in school?

✔ CHECK ONLY ONE

- Much harder ☐
- Harder ☐
- About the same ☐
- Not as hard ☐
- Much less hard ☐

2. How good a student do you think you are?

✔ CHECK ONLY ONE

- Excellent ☐
- Good ☐
- Fair ☐
- Poor ☐

3. How important do you think it is to work hard in school?

✔ CHECK ONLY ONE

- Very important ☐
- Important ☐
- Not too important ☐
- Not important at all ☐

4. About how much time do you spend on homework each *WEEK*? Include the time you spend both in and out of school.

✓ CHECK ONE BOX IN EACH ROW

Subject	None	Less than 1 hour	Between 1 and 3 hours	Between 4 and 6 hours	7 hours or more
Math	☐	☐	☐	☐	☐
English/ Language Arts	☐	☐	☐	☐	☐
Science	☐	☐	☐	☐	☐
All other subjects combined	☐	☐	☐	☐	☐

5. Does your mother or female guardian help you with your homework?

✓ CHECK ONLY ONE

- ☐ I never need help
- ☐ Yes, whenever I need help
- ☐ Yes, but not as often as I need help
- ☐ No, I never get help when I need it
- ☐ I don't have a mother or female guardian at home

6. Does your father or male guardian help you with your homework?

✓ CHECK ONLY ONE

- ☐ I never need help
- ☐ Yes, whenever I need help
- ☐ Yes, but not as often as I need help
- ☐ No, I never get help when I need it
- ☐ I don't have a father or male guardian at home

7. Do any of the following people help you with your homework?

✔ CHECK ONE BOX IN EACH ROW

	Yes	No
A teacher at your school	☐	☐
Someone at your school other than a teacher	☐	☐
An adult in your home other than your parents or guardians	☐	☐
Your brother or sister	☐	☐
A classmate or friend	☐	☐
Some other person	☐	☐

Who?

8. How many hours each week do you spend reading that is not part of your homework?

✔ CHECK ONLY ONE

- ☐ None
- ☐ 1 hour or less a week
- ☐ Between 2 and 3 hours a week
- ☐ Between 4 and 5 hours a week
- ☐ Between 6 and 7 hours a week
- ☐ 8 or more hours a week

9. How many hours each week do you spend babysitting younger siblings?

✔ CHECK ONLY ONE

- ☐ None
- ☐ 1 hour or less a week
- ☐ Between 2 and 3 hours a week
- ☐ Between 4 and 5 hours a week
- ☐ Between 6 and 7 hours a week
- ☐ 8 or more hours a week

10. Not including weekends, how many hours a day do you *USUALLY* watch TV?

✔ CHECK ONLY ONE

- ☐ Do not watch TV
- ☐ 1 hour or less a day
- ☐ Between 2 and 3 hours a day
- ☐ Between 3 and 4 hours a day
- ☐ Between 4 and 5 hours a day
- ☐ 5 or more hours a day

11. Not including weekends, how many hours a day do you *USUALLY* play video games?

✔ CHECK ONLY ONE

- ☐ Do not play video games
- ☐ 1 hour or less a day
- ☐ Between 2 and 3 hours a day
- ☐ Between 3 and 4 hours a day
- ☐ Between 4 and 5 hours a day
- ☐ 5 or more hours a day

12. Have you been in any of the following school activities this school year?

✓ CHECK ONE BOX IN EACH ROW

	Yes	No	School does not have
A team sport such as soccer, basketball, baseball, football, field hockey, etc.	☐	☐	☐
An individual sport such as cross-country, gymnastics, golf, swimming, tennis, track, wrestling, etc.	☐	☐	☐
Band, orchestra, chorus, choir, or other music group	☐	☐	☐
Drama club, school play or musical	☐	☐	☐
Student government	☐	☐	☐
Cheerleading, pom squad, drill team, dance team	☐	☐	☐
School yearbook, newspaper, or literary magazine	☐	☐	☐
Academic clubs, such as Art, Computer, Math, Engineering, Science, Debate/Forensics, Foreign languages, Philosophy)	☐	☐	☐
Hobby clubs, such as photography and chess	☐	☐	☐
Future Teachers of America, Future Homemakers of America, Future Farmers of America or other vocational education or professional clubs	☐	☐	☐

13. Were you an officer or leader in any of the activities listed above?

- Yes ☐
- No ☐
- Did not participate in any clubs ☐

14. Most weeks, how much time do you spend on all activities (such as, sports, clubs, or other activities) at your school?

✓ CHECK ONLY ONE

- ☐ None
- ☐ Less than 1 hour a week
- ☐ 1 to 4 hours a week
- ☐ 5 to 9 hours a week
- ☐ 10 hours or more a week

15. How often do you spend time on the following activities outside of school?

✓ CHECK ONE BOX IN EACH ROW

	Never or almost never	Once or twice a month	Once or twice a week	Every day or almost every day
Using a personal computer, not including school-related work	☐	☐	☐	☐
Participating in religious activities	☐	☐	☐	☐
Doing volunteer or community service beyond any requirements for high school graduation	☐	☐	☐	☐
Doing things with your friends	☐	☐	☐	☐
Doing things with your mother, father, or guardian(s)	☐	☐	☐	☐
Doing things with other adults	☐	☐	☐	☐

16. Do you spend time doing any of the following activities?

✔ CHECK ONE BOX IN EACH ROW

	Yes	No
Working on hobbies, arts, or crafts on your own	☐	☐
Taking classes (music, art, language, dance) that are not at your school	☐	☐
Participating in sports or taking sports lessons that are not at your school	☐	☐
Attending plays or other performances at a theater	☐	☐

17. Thinking about last school year, how would you describe your grades?

✔ CHECK ONLY ONE

- ☐ Mostly A's
- ☐ A's and B's
- ☐ Mostly B's
- ☐ B's and C's
- ☐ Mostly C's
- ☐ C's and D's
- ☐ Mostly D's or below

18. How important to you is what the following people think you should do about your education?

✓ CHECK ONE BOX IN EACH ROW

	Not important	Somewhat important	Very important	Do not know this person
Your father or male guardian	☐	☐	☐	☐
Your mother or female guardian	☐	☐	☐	☐
Your friends	☐	☐	☐	☐
A relative whose advice you value	☐	☐	☐	☐
School counselor	☐	☐	☐	☐
Your favorite teacher	☐	☐	☐	☐
Coach	☐	☐	☐	☐
Some other person Who?	☐	☐	☐	☐

B. SCHOOLWORK

The next questions are about this school year. They ask you about any extra help you may be getting at school.

19a. Since the beginning of the school year, did you get homework help from someone other than your family?

✔ CHECK ONLY ONE

- ☐ Never or almost never
- ☐ Every day
- ☐ Almost every day
- ☐ 1 to 2 times a week
- ☐ 1 to 2 times a month

19b. Why did you get help?

✔ CHECK ALL THAT APPLY

- ☐ I did not get homework help
- ☐ My school required it
- ☐ My parents made me
- ☐ I wanted the extra help
- ☐ My friends were going
- ☐ It was something to do
- ☐ Some other reason
  What reason?

19c. How helpful was it?

✔ CHECK ONLY ONE

- ☐ I did not get homework help
- ☐ Very helpful
- ☐ Somewhat helpful
- ☐ Not very helpful
- ☐ Not helpful at all

20a. Since the beginning of the school year, how often did you get math tutoring from someone other than your family?

✔ CHECK ONLY ONE

- ☐ Never or almost never
- ☐ Every day
- ☐ Almost every day
- ☐ 1 to 2 times a week
- ☐ 1 to 2 times a month

20b. Why did you go?

✔ CHECK ALL THAT APPLY

- ☐ I did not get tutoring
- ☐ My school required it
- ☐ My parents made me
- ☐ I wanted the extra help
- ☐ My friends were going
- ☐ It was something to do
- ☐ Some other reason
  What reason?

20c. How helpful was it?

✔ CHECK ONLY ONE

- ☐ I did not get tutoring
- ☐ Very helpful
- ☐ Somewhat helpful
- ☐ Not very helpful
- ☐ Not helpful at all

21a. Since the beginning of the school year, how often did you get English or Language Arts tutoring from someone other than your family?

✔ CHECK ONLY ONE

- ☐ Never or almost never
- ☐ Every day
- ☐ Almost every day
- ☐ 1 to 2 times a week
- ☐ 1 to 2 times a month

21b. Why did you go?

✔ CHECK ALL THAT APPLY

- ☐ I did not get tutoring
- ☐ My school required it
- ☐ My parents made me
- ☐ I wanted the extra help
- ☐ My friends were going
- ☐ It was something to do
- ☐ Some other reason
  What reason?

21c. How helpful was it?

✔ CHECK ONLY ONE

- ☐ I did not get tutoring
- ☐ Very helpful
- ☐ Somewhat helpful
- ☐ Not very helpful
- ☐ Not helpful at all

22a. Since the beginning of the school year, how often did you get science tutoring from someone other than your family?

✔ CHECK ONLY ONE

- ☐ Never or almost never
- ☐ Every day
- ☐ Almost every day
- ☐ 1 to 2 times a week
- ☐ 1 to 2 times a month

22b. Why did you go?

✔ CHECK ALL THAT APPLY

- ☐ I did not get tutoring
- ☐ My school required it
- ☐ My parents made me
- ☐ I wanted the extra help
- ☐ My friends were going
- ☐ It was something to do
- ☐ Some other reason
  What reason?

22c. How helpful was it?

✔ CHECK ONLY ONE

- ☐ I did not get tutoring
- ☐ Very helpful
- ☐ Somewhat helpful
- ☐ Not very helpful
- ☐ Not helpful at all

23a. Since the beginning of the school year, how often have you met with an adult mentor such as a Big Brother or Big Sister?

✔ CHECK ONLY ONE

- Do not have one
- Never or almost never
- Every day
- Almost every day
- 1 to 2 times a week
- 1 to 2 times a month

23b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not have an adult mentor
- My school required it
- My parents made me
- My friends were going
- It was something to do
- Some other reason
  What reason?

23c. How helpful was it?

✔ CHECK ONLY ONE

- I did not have an adult mentor
- Very helpful
- Somewhat helpful
- Not very helpful
- Not helpful at all

24a. Since the beginning of the school year, have you had a one-on-one counseling or advising session about getting ready for high school?

- No
- Yes

24b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not have a counseling or advising session
- My school required it
- My parents made me
- I wanted the extra help
- My friends were going
- It was something to do
- Some other reason
  What reason?

24c. How helpful was it?

✔ CHECK ONLY ONE

- I did not have a counseling or advising session
- Very helpful
- Somewhat helpful
- Not very helpful
- Not helpful at all

25a. Since the beginning of the school year, have you had a one-on-one counseling or advising session about getting ready for college?

- No
- Yes

25b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not have a counseling or advising session
- My school required it
- My parents made me
- I wanted the extra help
- My friends were going
- It was something to do
- Some other reason
  What reason?

25c. How helpful was it?

✔ CHECK ONLY ONE

- I did not have a counseling or advising session
- Very helpful
- Somewhat helpful
- Not very helpful
- Not helpful at all

26a. Since the beginning of the school year, have you attended a class or meeting about getting ready for college?

- No
- Yes

26b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not attend a class or meeting about getting ready for college
- My school required it
- My parents made me
- I wanted the extra help
- My friends were going
- It was something to do
- Some other reason
  What reason?

26c. How helpful was it?

✔ CHECK ONLY ONE

- I did not attend a class or meeting about getting ready for college
- Very helpful
- Somewhat helpful
- Not very helpful
- Not helpful at all

27a. Since the beginning of the school year, have you attended a class or meeting about how to study better?

- No ☐
- Yes ☐

27b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not attend a class or meeting about how to study better ☐
- My school required it ☐
- My parents made me ☐
- I wanted the extra help ☐
- My friends were going ☐
- It was something to do ☐
- Some other reason ☐

What reason?

✎

27c. How helpful was it?

✔ CHECK ONLY ONE

- I did not attend a class or meeting about how to study better ☐
- Very helpful ☐
- Somewhat helpful ☐
- Not very helpful ☐
- Not helpful at all ☐

28a. Since the beginning of the school year, have you attended a class or meeting about possible careers after you finish school?

- No ☐
- Yes ☐

28b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not attend a class or meeting about possible careers ☐
- My school required it ☐
- My parents made me ☐
- I wanted the extra help ☐
- My friends were going ☐
- It was something to do ☐
- Some other reason ☐

What reason?

✎

28c. How helpful was it?

✔ CHECK ONLY ONE

- I did not attend a class or meeting about possible careers ☐
- Very helpful ☐
- Somewhat helpful ☐
- Not very helpful ☐
- Not helpful at all ☐

29a. Since the beginning of the school year, have you visited a college campus?

- ☐ No
- ☐ Yes

29b. Why did you go?

✔ CHECK ALL THAT APPLY

- ☐ I did not visit a college campus
- ☐ My school required it
- ☐ My parents made me
- ☐ I wanted the extra information
- ☐ My friends were going
- ☐ It was something to do
- ☐ Some other reason
  What reason?

29c. How helpful was it?

✔ CHECK ONLY ONE

- ☐ I did not visit a college campus
- ☐ Very helpful
- ☐ Somewhat helpful
- ☐ Not very helpful
- ☐ Not helpful at all

30a. Since the beginning of the school year, have you visited a job site or talked with someone about their job?

- ☐ No
- ☐ Yes

30b. Why did you do this?

✔ CHECK ALL THAT APPLY

- ☐ I did not visit a job site or talk with someone about their job
- ☐ My school required it
- ☐ My parents made me
- ☐ I was interested in their job
- ☐ My friends were going
- ☐ It was something to do
- ☐ Some other reason
  What reason?

30c. How helpful was it?

✔ CHECK ONLY ONE

- ☐ I did not visit a job site or talk with someone about their job
- ☐ Very helpful
- ☐ Somewhat helpful
- ☐ Not very helpful
- ☐ Not helpful at all

31. During the past month, how many days were you absent from school?

✔ CHECK ONLY ONE

- None ☐
- 1 or 2 ☐
- 3 or 4 ☐
- 5 or more ☐
- Don't remember ☐

32. *IF YOU MISSED SCHOOL ONE OR MORE DAYS,* why were you usually absent from school?

✔ CHECK ALL THAT APPLY

- I haven't missed any school ☐
- I was sick ☐
- I had to take care of a member of my family or a close friend ☐
- I had a doctor's or dentist's appointment ☐
- I didn't feel like going to school ☐
- I wasn't ready for a test or hadn't finished my homework ☐
- I wanted to spend time with my friends who are not in school ☐
- I was out of town with my family ☐
- Some other reason ☐

What reason?

33. During the past month, how many classes did you skip or cut?

✔ CHECK ONLY ONE

- None ☐
- 1 or 2 ☐
- 3 or 4 ☐
- 5 or more ☐

C. PLANS FOR THE FUTURE

34. Have you talked with your school counselor or someone else at your school about the classes you need:

✔ CHECK ONE BOX IN EACH ROW

	Yes	No
to graduate from high school?	☐	☐
to get into college?	☐	☐

35. Since the beginning of the school year, have you talked with any adults in your house about the classes you need to take to get into college?

- ☐ Yes
- ☐ No

36. Have you heard of the following types of schools?

✔ CHECK ONE BOX IN EACH ROW

	Yes	No
2-year or community college	☐	☐
4-year college or university	☐	☐
Vocational, trade, or business school	☐	☐

37. Who do you talk to about continuing your education after high school?

✔ CHECK ALL THAT APPLY

- ☐ Parent(s) or guardian(s)
- ☐ Brother(s) or sister(s)
- ☐ Guidance counselor
- ☐ Teacher(s)
- ☐ Principal or assistant principal
- ☐ Religious leader (minister, priest, rabbi, etc.)
- ☐ Friend(s)
- ☐ Someone else
  Who?
- ☐ No one

38. In general, do you think a person who finishes college makes more money in a year than a person who does not finish college?

✔ CHECK ONLY ONE

- ☐ Definitely
- ☐ Probably
- ☐ I doubt it
- ☐ Definitely not
- ☐ Don't know

39. If you do *NOT* continue your education after high school, what would the reasons be?

✔ CHECK ALL THAT APPLY

- It costs too much ☐
- I need or want to work ☐
- My grades are not good enough ☐
- I'm just not interested ☐
- I want to join the military service ☐
- I want to start a family or I need to take care of my family ☐
- Some other reason ☐
  What reason?

40. How likely are you to go to college?

✔ CHECK ONLY ONE

- I will definitely go to college ☐
- I will probably go to college ☐
- I may go to college ☐
- I will probably not go to college ☐
- I will definitely not go to college ☐
- I have not decided yet ☐

41. How important is it for you to go to college?

✔ CHECK ONLY ONE

- Very important ☐
- Somewhat important ☐
- Not very important ☐
- Not important at all ☐

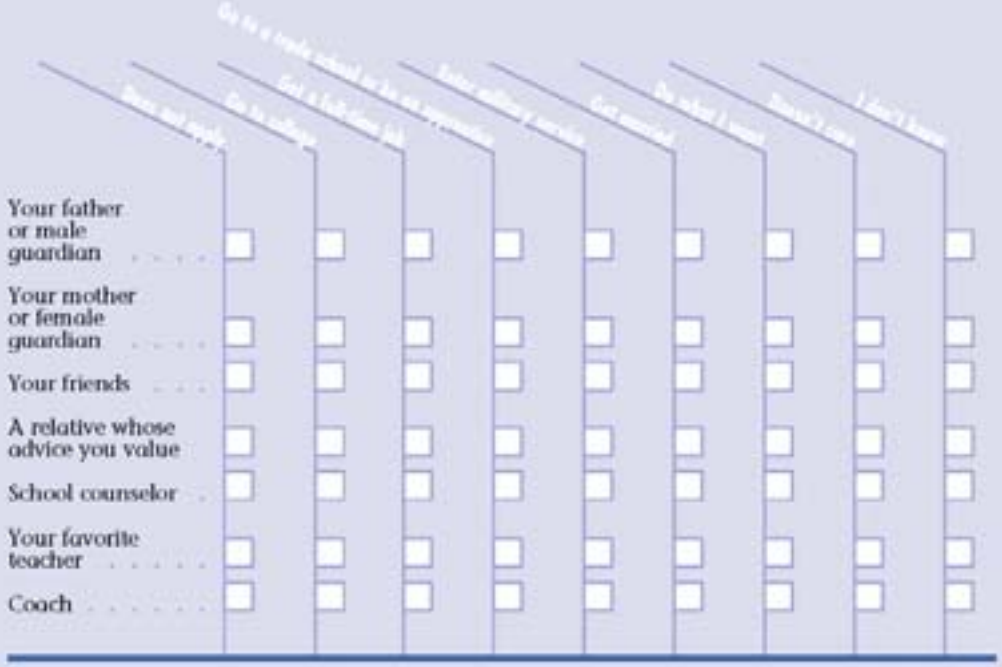
42. How far in school do you think you will get after high school?

✔ CHECK ONLY ONE

- A certificate from a vocational, trade, or business school (less than 2-year program) ☐
- A 2-year degree from a community college or an associate's (AA) degree ☐
- A 4 – 5 year degree from a college or university or bachelor's (BA) degree ☐
- A graduate or professional degree such as a master's (MA), doctorate (Ph.D.), law (JD), or medical (MD) degree ☐
- I'm not going to school after high school ☐
- Don't know ☐

43. What do the following people think is the most important thing for you to do right after high school?

✔ CHECK ALL THAT APPLY IN EACH ROW



44. Which one of the categories below comes closest to describing the job or occupation that you expect or plan to have right after high school? Even if you are not sure, check your best guess.

✓ CHECK ONLY ONE

- Will be in college or vocational school ☐
- Office worker such as data entry clerk, bank teller, bookkeeper, secretary, word processor, mail carrier, ticket agent ☐
- Military such as career officer or enlisted person in the Armed Forces ☐
- Technical such as computer technician, medical or dental technician, draftsperson ☐
- Sales such as sales representative, advertising or insurance agent, real estate broker ☐
- Computer-related such as computer programmer, web-page developer ☐
- Service worker such as hair stylist, practical nurse, child care worker, waiter, domestic, janitor ☐
- Trades-person such as auto mechanic, housepainter, plumber, phone/cable installer, carpenter ☐
- Protective service such as police officer, firefighter, detective, sheriff, security guard ☐
- Full-time homemaker ☐
- Laborer such as construction worker, car washer, landscaper, garbage/trash collector, farm worker ☐
- Operator of machines or tools, such as meat cutter, assembler, welder, taxicab/bus/truck driver ☐
- Owner of a small business or restaurant, contractor ☐
- Farmer, farm manager ☐
- Not planning to work ☐
- Other ☐

45. Which one of the categories below comes closest to describing the job or occupation that you expect or plan to have when you are 30 years old? Even if you are not sure, check your best guess.

✓ CHECK ONLY ONE

- ☐ Will be in college or vocational school
- ☐ Office worker such as data entry clerk, bank teller, bookkeeper, secretary, word processor, mail carrier, ticket agent
- ☐ Military such as career officer or enlisted person in the Armed Forces
- ☐ Professional such as accountant, registered nurse, engineer, computer programmer, banker, librarian, writer, social worker, actor, athlete, artist, politician, elementary or high school teacher
- ☐ Professional such as minister, dentist, doctor, lawyer, scientist, college teacher
- ☐ Technical such as computer technician, medical or dental technician, draftsperson
- ☐ Sales such as sales representative, advertising or insurance agent, real estate broker
- ☐ Computer-related such as computer programmer, web-page developer
- ☐ Service worker such as hair stylist, practical nurse, child care worker, waiter, domestic, janitor
- ☐ Trades-person such as banker, auto mechanic, house-painter, plumber, phone/cable installer, carpenter
- ☐ Protective service such as police officer, firefighter, detective, sheriff, security guard
- ☐ Full-time homemaker
- ☐ Laborer such as construction worker, car washer, garbage collector, farm worker
- ☐ Manager such as sales manager, office manager, school administrator, retail buyer, restaurant manager, government administrator
- ☐ Operator of machines or tools, such as meat cutter, assembler, welder, taxicab/bus/truck driver
- ☐ Owner of a small business or restaurant, contractor
- ☐ Farmer, farm manager
- ☐ Not planning to work
- ☐ Other

46. How much education do you think you need to get that kind of job when you are 30 years old?

✓ CHECK ONLY ONE

- Less than high school ☐
- High school ☐
- Certificate from a vocational, trade, or business school (less than 2-year program) ☐
- A 2-year degree from a community college or an associate's (A.A.) degree ☐
- A 4-5 year degree from a college or university or a bachelor's (B.A.) degree ☐
- A graduate or professional degree such as a master's (M.A.) or doctorate (Ph.D.), law (J.D.) or medical (M.D.) degree ☐
- Not planning to work ☐
- Don't know ☐

C. YOUR FAMILY AND HOME

47. Did any of the following people in your family go to college?

✓ CHECK ONE BOX IN EACH ROW

	Yes	No	Don't know
Mother or female guardian	☐	☐	☐
Father or male guardian	☐	☐	☐
An older brother or sister	☐	☐	☐
A grandparent	☐	☐	☐

48. In the past month, how often did you talk about the following with either or both of your parents or guardians?

✓ CHECK ONE BOX IN EACH ROW

	Frequently	A few times	Never
School activities or events of particular interest to you	☐	☐	☐
Things you've studied in class	☐	☐	☐
Your grades	☐	☐	☐
Community, national, and world events	☐	☐	☐
Things that were bothering you	☐	☐	☐

49. Does your mother or female guardian attend school activities or events?

✔ CHECK ONLY ONE

- Yes, often ☐
- Yes, sometimes ☐
- No, never ☐
- I don't have a mother or female guardian ☐

50. Does your father or male guardian attend school activities or events?

✔ CHECK ONLY ONE

- Yes, often ☐
- Yes, sometimes ☐
- No, never ☐
- I don't have a father or male guardian ☐

51. Do you have a computer at home?

- Yes ☐
- No ☐

52. How often do you use the Internet each week?

✔ CHECK ONLY ONE

- Do not have access to the Internet ☐
- Do not use the Internet ☐
- Every day or almost every day ☐
- 1 or 2 times a week ☐
- 3 or 4 times a week ☐

D. YOUR BACKGROUND

53. What is today's date?

Month - Day - Year

54. Are you...

- Male
- Female

55. When were you born?

Month - Day - Year

56. Do you consider yourself Hispanic/Latino?

- Yes
- No

57. How do you describe yourself?

✓ CHECK ALL THAT APPLY

- American Indian or Alaska Native
- Asian
- Black or African American
- White
- Native Hawaiian or Other Pacific Islander

58. Was English the first language you learned to speak at home?

- Yes
  (➨ GO TO QUESTION 60)
- No
  (➨ CONTINUE WITH QUESTION 59)

59. How often do you use your first language with...

✔ CHECK ONE BOX IN EACH ROW

	Always or most of the time	About half of the time	Sometimes	Never
Your mother or female guardian?	☐	☐	☐	☐
Your father or male guardian?	☐	☐	☐	☐
Your brothers or sisters?	☐	☐	☐	☐
Your friends?	☐	☐	☐	☐
Other family members?	☐	☐	☐	☐

60. Is your family planning on moving within the next year?

- ☐ Yes
- ☐ No
- ☐ Don't know

61. What is the name of the school you will attend next year?

✎ WRITE THE NAME OF THE SCHOOL IN THE BOX

✎ _____

☐ I don't know

62. Counting the school you are in now, how many different schools have you attended since 1st grade?

✔ CHECK ONLY ONE

- ☐ One
- ☐ Two
- ☐ Three
- ☐ Four or more

➲ END

Thank you for completing this survey.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB number. The valid OMB control number of this information collection is 1875-0191. The time required to complete this information collection is estimated to average 30 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection.

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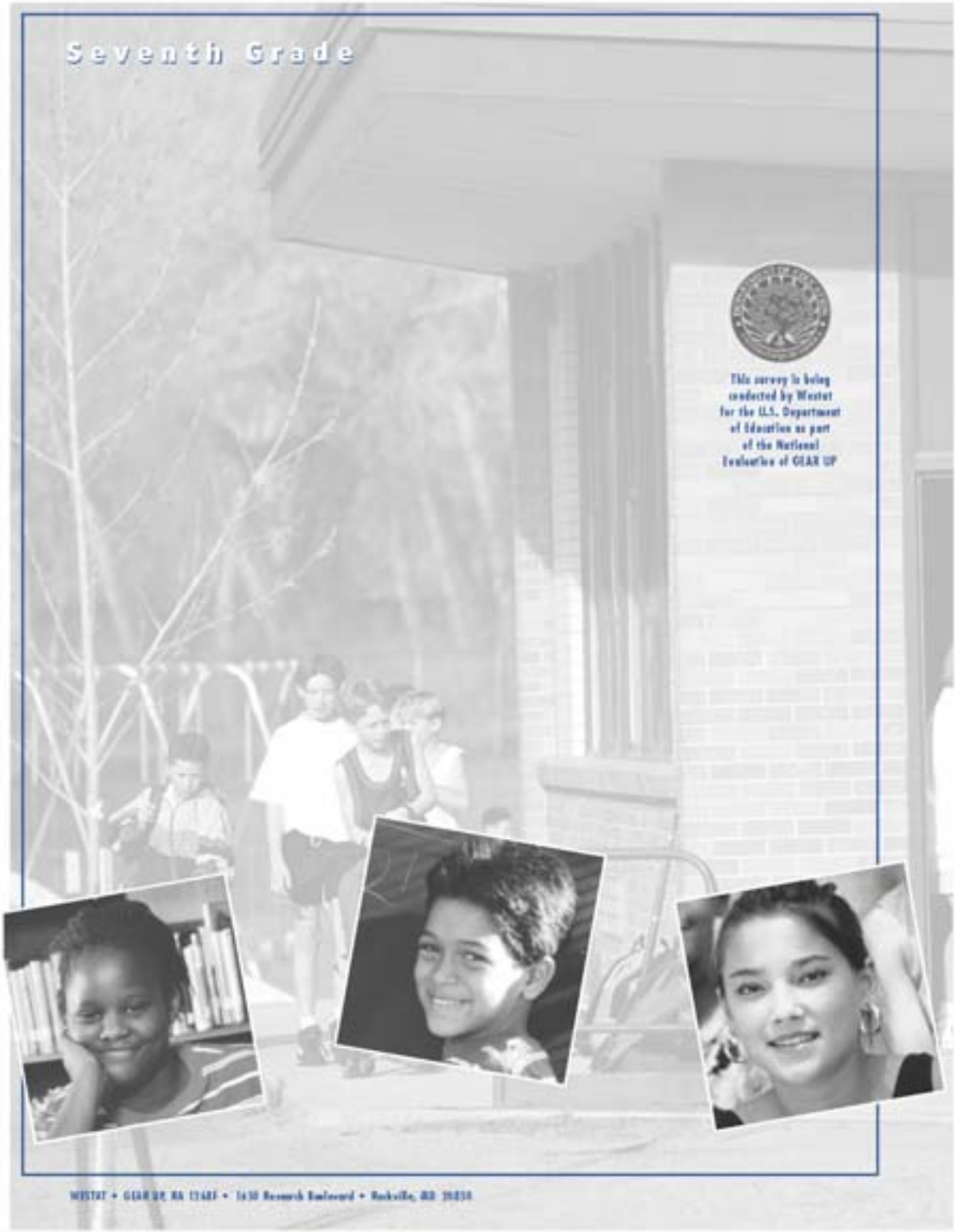
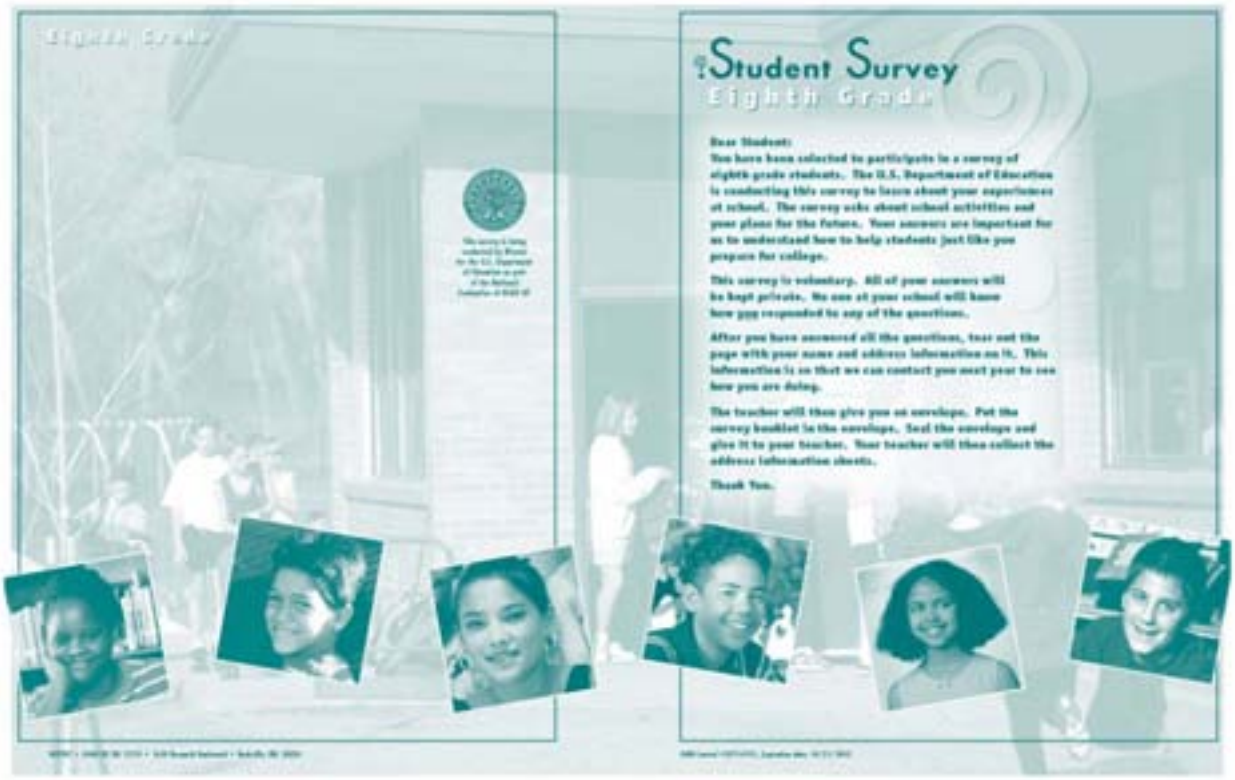

Seventh Grade
This survey is being conducted by Westat for the U.S. Department of Education as part of the National Evaluation of GEAR UP

Eighth-Grade Student Survey


Eighth Grade
Student Survey
Eighth Grade
Dear Student:
You have been selected to participate in a survey of eighth grade students. The U.S. Department of Education is conducting this survey to learn about your experiences at school. The survey asks about school activities and your plans for the future. Your answers are important for us to understand how to help students just like you prepare for college.
This survey is voluntary. All of your answers will be kept private. No one at your school will know how you responded to any of the questions.
After you have answered all the questions, tear out the page with your name and address information on it. This information is so that we can contact you next year to see how you are doing.
The teacher will then give you an envelope. Put the survey booklet in the envelope. Seal the envelope and give it to your teacher. Your teacher will then collect the address information sheets.
Thank You.

Student Survey Eighth Grade

ADDRESS INFORMATION

The first few questions ask for information about how to reach you and your family.
After you have completed this information, remove this page by tearing along the perforation.

1. Please print your name, address, and telephone number:

Name: _____ _____ _____
First Middle Initial Last

Address: _____ _____ _____
Number Street Name Apt. #

_____ _____ _____
City State Zip Code

Telephone: ( ) ☐ I do not have a telephone

WHEN WE SAY ADULT GUARDIAN, ANSWER FOR THE PARENT (MOTHER OR FATHER), GUARDIAN, OR STEPPARENT WITH WHOM YOU LIVE MOST OF THE TIME.

2. Please fill in name and phone number of the adult guardian(s) with whom you live most of the time. If you live with only one adult, fill in that person's name in only one place.

1st Person: _____ _____
First Last

2nd Person: _____ _____
First Last

Telephone: ( ) ☐ Do not have a telephone

3. Please write in the name, address, and telephone number of a relative or close friend who does not live with you and who will know how to contact you.

Name: _____ _____ _____
First Middle Initial Last

Address: _____ _____ _____
Number Street Name Apt. #

_____ _____ _____
City State Zip Code

Telephone: ( ) ☐ He/She does not have a telephone

Student Survey Seventh Grade

A. SCHOOL AND SCHOOL ACTIVITIES

The next several questions ask you about what you are doing in school this year.

1. Compared with other students, how hard do you think you work in school?

✔ CHECK ONLY ONE

- Much harder ☐ 1
- Harder ☐ 2
- About the same ☐ 3
- Not as hard ☐ 4
- Much less hard ☐ 5

2. How good a student do you think you are?

✔ CHECK ONLY ONE

- Excellent ☐ 1
- Good ☐ 2
- Fair ☐ 3
- Poor ☐ 4

3. How important do you think it is to work hard in school?

✔ CHECK ONLY ONE

- Very important ☐ 1
- Important ☐ 2
- Not too important ☐ 3
- Not important at all ☐ 4

4. About how much time do you spend on homework each *WEEK*? Include the time you spend both in and out of school.

✓ CHECK ONE BOX IN EACH ROW

Subject	None	Less than 1 hour	Between 1 and 2 hours	Between 3 and 6 hours	7 hours or more
Math	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
English/ Language Arts	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
Science	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
All other subjects combined	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

5. Does your mother or female guardian help you with your homework?

✓ CHECK ONLY ONE

- ☐ 1 I never need help
- ☐ 2 Yes, whenever I need help
- ☐ 3 Yes, but not as often as I need help
- ☐ 4 No, I never get help when I need it
- ☐ 5 I don't have a mother or female guardian at home

6. Does your father or male guardian help you with your homework?

✓ CHECK ONLY ONE

- ☐ 1 I never need help
- ☐ 2 Yes, whenever I need help
- ☐ 3 Yes, but not as often as I need help
- ☐ 4 No, I never get help when I need it
- ☐ 5 I don't have a father or male guardian at home

7. Do any of the following people help you with your homework?

✔ CHECK ONE BOX IN EACH ROW

	Yes	No
A teacher at your school	☐ 1	☐ 2
Someone at your school other than a teacher	☐ 1	☐ 2
An adult in your home other than your parents or guardians	☐ 1	☐ 2
Your brother or sister	☐ 1	☐ 2
A classmate or friend	☐ 1	☐ 2
Some other person Who?	☐ 1	☐ 2

8. How many hours each week do you spend reading that is not part of your homework?

✔ CHECK ONLY ONE

- None ☐ 1
- 1 hour or less a week ☐ 2
- Between 2 and 3 hours a week ☐ 3
- Between 4 and 5 hours a week ☐ 4
- Between 6 and 7 hours a week ☐ 5
- 8 or more hours a week ☐ 6

9. How many hours each week do you spend babysitting younger siblings?

✔ CHECK ONLY ONE

- None ☐ 1
- 1 hour or less a week ☐ 2
- Between 2 and 3 hours a week ☐ 3
- Between 4 and 5 hours a week ☐ 4
- Between 6 and 7 hours a week ☐ 5
- 8 or more hours a week ☐ 6

10. Not including weekends, how many hours a day do you *USUALLY* watch TV?

✔ CHECK ONLY ONE

- Do not watch TV ☐ 1
- 1 hour or less a day ☐ 2
- Between 2 and 3 hours a day ☐ 3
- Between 3 and 4 hours a day ☐ 4
- Between 4 and 5 hours a day ☐ 5
- 5 or more hours a day ☐ 6

11. Not including weekends, how many hours a day do you *USUALLY* play video games?

✔ CHECK ONLY ONE

- Do not play video games ☐ 1
- 1 hour or less a day ☐ 2
- Between 2 and 3 hours a day ☐ 3
- Between 3 and 4 hours a day ☐ 4
- Between 4 and 5 hours a day ☐ 5
- 5 or more hours a day ☐ 6

12. Have you been in any of the following school activities this school year?

✓ CHECK ONE BOX IN EACH ROW

	Yes	No	School does not have
A team sport such as soccer, basketball, baseball, football, field hockey, etc.	☐ 1	☐ 2	☐ 3
An individual sport such as cross-country, gymnastics, golf, swimming, tennis, track, wrestling, etc.	☐ 1	☐ 2	☐ 3
Band, orchestra, chorus, choir, or other music group	☐ 1	☐ 2	☐ 3
Drama club, school play or musical	☐ 1	☐ 2	☐ 3
Student government	☐ 1	☐ 2	☐ 3
Cheerleading, pom squad, drill team, dance team	☐ 1	☐ 2	☐ 3
School yearbook, newspaper, or literary magazine	☐ 1	☐ 2	☐ 3
Academic clubs, such as Art, Computer, Math, Engineering, Science, Debate/Forensics, Foreign languages, Philosophy)	☐ 1	☐ 2	☐ 3
Hobby clubs, such as photography and chess	☐ 1	☐ 2	☐ 3
Future Teachers of America, Future Homemakers of America, Future Farmers of America or other vocational education or professional clubs	☐ 1	☐ 2	☐ 3

13. Were you an officer or leader in any of the activities listed above?

- Yes ☐ 1
- No ☐ 2
- Did not participate in any clubs ☐ 3

14. Most weeks, how much time do you spend on all activities (such as, sports, clubs, or other activities) at your school?

✔ CHECK ONLY ONE

- None 1
- Less than 1 hour a week 2
- 1 to 4 hours a week 3
- 5 to 9 hours a week 4
- 10 hours or more a week 5

15. How often do you spend time on the following activities outside of school?

✔ CHECK ONE BOX IN EACH ROW

	Never or almost never	Once or twice a month	Once or twice a week	Every day or almost every day
Using a personal computer, not including school-related work	1	2	3	4
Participating in religious activities	1	2	3	4
Doing volunteer or community service beyond any requirements for high school graduation	1	2	3	4
Doing things with your friends	1	2	3	4
Doing things with your mother, father, or guardian(s)	1	2	3	4
Doing things with other adults	1	2	3	4

16. Do you spend time doing any of the following activities?

✔ CHECK ONE BOX IN EACH ROW

	Yes	No
Working on hobbies, arts, or crafts on your own	☐ 1	☐ 2
Taking classes (music, art, language, dance) that are not at your school	☐ 1	☐ 2
Participating in sports or taking sports lessons that are not at your school	☐ 1	☐ 2
Attending plays or other performances at a theater	☐ 1	☐ 2

17. Thinking about last school year, how would you describe your grades?

✔ CHECK ONLY ONE

- ☐ 1 Mostly A's
- ☐ 2 A's and B's
- ☐ 3 Mostly B's
- ☐ 4 B's and C's
- ☐ 5 Mostly C's
- ☐ 6 C's and D's
- ☐ 7 Mostly D's or below

18. How important to you is what the following people think you should do about your education?

✓ CHECK ONE BOX IN EACH ROW

	Not important	Somewhat important	Very important	Do not know this person
Your father or male guardian	☐ 1	☐ 2	☐ 3	☐ 4
Your mother or female guardian	☐ 1	☐ 2	☐ 3	☐ 4
Your friends	☐ 1	☐ 2	☐ 3	☐ 4
A relative whose advice you value	☐ 1	☐ 2	☐ 3	☐ 4
School counselor	☐ 1	☐ 2	☐ 3	☐ 4
Your favorite teacher	☐ 1	☐ 2	☐ 3	☐ 4
Coach	☐ 1	☐ 2	☐ 3	☐ 4
Some other person Who?	☐ 1	☐ 2	☐ 3	☐ 4

B. SCHOOLWORK

The next questions are about this school year. They ask you about any extra help you may be getting at school.

19a. Since the beginning of the school year, did you get homework help from someone other than your family?

✔ CHECK ONLY ONE

- Never or almost never 1
- Every day 2
- Almost every day 3
- 1 to 2 times a week 4
- 1 to 2 times a month 5

19b. Why did you get help?

✔ CHECK ALL THAT APPLY

- I did not get homework help 1
- My school required it 2
- My parents made me 3
- I wanted the extra help 4
- My friends were going 5
- It was something to do 6
- Some other reason 7
  What reason?

19c. How helpful was it?

✔ CHECK ONLY ONE

- I did not get homework help 1
- Very helpful 2
- Somewhat helpful 3
- Not very helpful 4
- Not helpful at all 5

20a. Since the beginning of the school year, how often did you get math tutoring from someone other than your family?

✔ CHECK ONLY ONE

- Never or almost never 1
- Every day 2
- Almost every day 3
- 1 to 2 times a week 4
- 1 to 2 times a month 5

20b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not get tutoring 1
- My school required it 2
- My parents made me 3
- I wanted the extra help 4
- My friends were going 5
- It was something to do 6
- Some other reason 7
  What reason?

20c. How helpful was it?

✔ CHECK ONLY ONE

- I did not get tutoring 1
- Very helpful 2
- Somewhat helpful 3
- Not very helpful 4
- Not helpful at all 5

21a. Since the beginning of the school year, how often did you get English or Language Arts tutoring from someone other than your family?

✔ CHECK ONLY ONE

- Never or almost never ☐ 1
- Every day ☐ 2
- Almost every day ☐ 3
- 1 to 2 times a week ☐ 4
- 1 to 2 times a month ☐ 5

21b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not get tutoring ☐ 1
- My school required it ☐ 2
- My parents made me ☐ 3
- I wanted the extra help ☐ 4
- My friends were going ☐ 5
- It was something to do ☐ 6
- Some other reason ☐ 7

What reason?

21c. How helpful was it?

✔ CHECK ONLY ONE

- I did not get tutoring ☐ 1
- Very helpful ☐ 2
- Somewhat helpful ☐ 3
- Not very helpful ☐ 4
- Not helpful at all ☐ 5

22a. Since the beginning of the school year, how often did you get science tutoring from someone other than your family?

✔ CHECK ONLY ONE

- Never or almost never ☐ 1
- Every day ☐ 2
- Almost every day ☐ 3
- 1 to 2 times a week ☐ 4
- 1 to 2 times a month ☐ 5

22b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not get tutoring ☐ 1
- My school required it ☐ 2
- My parents made me ☐ 3
- I wanted the extra help ☐ 4
- My friends were going ☐ 5
- It was something to do ☐ 6
- Some other reason ☐ 7

What reason?

22c. How helpful was it?

✔ CHECK ONLY ONE

- I did not get tutoring ☐ 1
- Very helpful ☐ 2
- Somewhat helpful ☐ 3
- Not very helpful ☐ 4
- Not helpful at all ☐ 5

23a. Since the beginning of the school year, how often have you met with an adult mentor such as a Big Brother or Big Sister?

✔ CHECK ONLY ONE

- Do not have one . . . 1
- Never or almost never . . . 2
- Every day . . . 3
- Almost every day . . . 4
- 1 to 2 times a week . . . 5
- 1 to 2 times a month . . . 6

23b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not have an adult mentor . . . 1
- My school required it . . . 2
- My parents made me . . . 3
- My friends were going . . . 4
- It was something to do . . . 5
- Some other reason . . . 6
  What reason?

23c. How helpful was it?

✔ CHECK ONLY ONE

- I did not have an adult mentor . . . 1
- Very helpful . . . 2
- Somewhat helpful . . . 3
- Not very helpful . . . 4
- Not helpful at all . . . 5

24a. Since the beginning of the school year, have you had a one-on-one counseling or advising session about getting ready for high school?

- No . . . 1
- Yes . . . 2

24b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not have a counseling or advising session . . . 1
- My school required it . . . 2
- My parents made me . . . 3
- I wanted the extra help . . . 4
- My friends were going . . . 5
- It was something to do . . . 6
- Some other reason . . . 7
  What reason?

24c. How helpful was it?

✔ CHECK ONLY ONE

- I did not have a counseling or advising session . . . 1
- Very helpful . . . 2
- Somewhat helpful . . . 3
- Not very helpful . . . 4
- Not helpful at all . . . 5

25a. Since the beginning of the school year, have you had a one-on-one counseling or advising session about getting ready for college?

- No ☐ 1
- Yes ☐ 2

25b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not have a counseling or advising session ☐ 1
- My school required it ☐ 2
- My parents made me ☐ 3
- I wanted the extra help ☐ 4
- My friends were going ☐ 5
- It was something to do ☐ 6
- Some other reason ☐ 7
  What reason?

25c. How helpful was it?

✔ CHECK ONLY ONE

- I did not have a counseling or advising session ☐ 1
- Very helpful ☐ 2
- Somewhat helpful ☐ 3
- Not very helpful ☐ 4
- Not helpful at all ☐ 5

26a. Since the beginning of the school year, have you attended a class or meeting about getting ready for college?

- No ☐ 1
- Yes ☐ 2

26b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not attend a class or meeting about getting ready for college ☐ 1
- My school required it ☐ 2
- My parents made me ☐ 3
- I wanted the extra help ☐ 4
- My friends were going ☐ 5
- It was something to do ☐ 6
- Some other reason ☐ 7
  What reason?

26c. How helpful was it?

✔ CHECK ONLY ONE

- I did not attend a class or meeting about getting ready for college ☐ 1
- Very helpful ☐ 2
- Somewhat helpful ☐ 3
- Not very helpful ☐ 4
- Not helpful at all ☐ 5

27a. Since the beginning of the school year, have you attended a class or meeting about how to study better?

- No ☐ 1
- Yes ☐ 2

27b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not attend a class or meeting about how to study better ☐ 1
- My school required it ☐ 2
- My parents made me ☐ 3
- I wanted the extra help ☐ 4
- My friends were going ☐ 5
- It was something to do ☐ 6
- Some other reason ☐ 7

What reason?

27c. How helpful was it?

✔ CHECK ONLY ONE

- I did not attend a class or meeting about how to study better ☐ 1
- Very helpful ☐ 2
- Somewhat helpful ☐ 3
- Not very helpful ☐ 4
- Not helpful at all ☐ 5

28a. Since the beginning of the school year, have you attended a class or meeting about possible careers after you finish school?

- No ☐ 1
- Yes ☐ 2

28b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not attend a class or meeting about possible careers ☐ 1
- My school required it ☐ 2
- My parents made me ☐ 3
- I wanted the extra help ☐ 4
- My friends were going ☐ 5
- It was something to do ☐ 6
- Some other reason ☐ 7

What reason?

28c. How helpful was it?

✔ CHECK ONLY ONE

- I did not attend a class or meeting about possible careers ☐ 1
- Very helpful ☐ 2
- Somewhat helpful ☐ 3
- Not very helpful ☐ 4
- Not helpful at all ☐ 5

29a. Since the beginning of the school year, have you visited a college campus?

- No ☐ 1
- Yes ☐ 2

29b. Why did you go?

✔ CHECK ALL THAT APPLY

- I did not visit a college campus ☐ 1
- My school required it ☐ 2
- My parents made me ☐ 3
- I wanted the extra information ☐ 4
- My friends were going ☐ 5
- It was something to do ☐ 6
- Some other reason ☐ 7

What reason?

29c. How helpful was it?

✔ CHECK ONLY ONE

- I did not visit a college campus ☐ 1
- Very helpful ☐ 2
- Somewhat helpful ☐ 3
- Not very helpful ☐ 4
- Not helpful at all ☐ 5

30a. Since the beginning of the school year, have you visited a job site or talked with someone about their job?

- No ☐ 1
- Yes ☐ 2

30b. Why did you do this?

✔ CHECK ALL THAT APPLY

- I did not visit a job site or talk with someone about their job ☐ 1
- My school required it ☐ 2
- My parents made me ☐ 3
- I was interested in their job ☐ 4
- My friends were going ☐ 5
- It was something to do ☐ 6
- Some other reason ☐ 7

What reason?

30c. How helpful was it?

✔ CHECK ONLY ONE

- I did not visit a job site or talk with someone about their job ☐ 1
- Very helpful ☐ 2
- Somewhat helpful ☐ 3
- Not very helpful ☐ 4
- Not helpful at all ☐ 5

31. During the past month, how many days were you absent from school?

✔ CHECK ONLY ONE

- None 1
- 1 or 2 2
- 3 or 4 3
- 5 or more 4
- Don't remember 5

32. *IF YOU MISSED SCHOOL ONE OR MORE DAYS,* why were you usually absent from school?

✔ CHECK ALL THAT APPLY

- I haven't missed any school 1
- I was sick 2
- I had to take care of a member of my family or a close friend 3
- I had a doctor's or dentist's appointment 4
- I didn't feel like going to school . . 5
- I wasn't ready for a test or hadn't finished my homework 6
- I wanted to spend time with my friends who are not in school 7
- I was out of town with my family . . 8
- Some other reason 9

What reason?

33. During the past month, how many classes did you skip or cut?

✔ CHECK ONLY ONE

- None 1
- 1 or 2 2
- 3 or 4 3
- 5 or more 4

C. PLANS FOR THE FUTURE

34. Have you talked with your school counselor or someone else at your school about the classes you need:

✔ CHECK ONE BOX IN EACH ROW

	Yes	No
to graduate from high school?	1	2
to get into college?	1	2

35. Since the beginning of the school year, have you talked with any adults in your house about the classes you need to take to get into college?

- Yes 1
- No 2

36. Have you heard of the following types of schools?

✔ CHECK ONE BOX IN EACH ROW

	Yes	No
2-year or community college	1	2
4-year college or university	1	2
Vocational, trade, or business school	1	2

37. Who do you talk to about continuing your education after high school?

✔ CHECK ALL THAT APPLY

- Parent(s) or guardian(s) 1
- Brother(s) or sister(s) 2
- Guidance counselor 3
- Teacher(s) 4
- Principal or assistant principal 5
- Religious leader (minister, priest, rabbi, etc.) 6
- Friend(s) 7
- Someone else 8
  Who?
- No one 9

38. In general, do you think a person who finishes college makes more money in a year than a person who does not finish college?

✔ CHECK ONLY ONE

- Definitely 1
- Probably 2
- I doubt it 3
- Definitely not 4
- Don't know 8

39. If you do *NOT* continue your education after high school, what would the reasons be?

✔ CHECK ALL THAT APPLY

- It costs too much 1
- I need or want to work 2
- My grades are not good enough . . . 3
- I'm just not interested 4
- I want to join the military service . . 5
- I want to start a family or I need to take care of my family . . . 6
- Some other reason 7
  What reason?

40. How likely are you to go to college?

✔ CHECK ONLY ONE

- I will definitely go to college 1
- I will probably go to college 2
- I may go to college 3
- I will probably not go to college . . . 4
- I will definitely not go to college . . . 5
- I have not decided yet 6

41. How important is it for you to go to college?

✔ CHECK ONLY ONE

- Very important 1
- Somewhat important 2
- Not very important 3
- Not important at all 4

42. How far in school do you think you will get after high school?

✔ CHECK ONLY ONE

- A certificate from a vocational, trade, or business school (less than 2-year program) 1
- A 2-year degree from a community college or an associate's (AA) degree 2
- A 4 – 5 year degree from a college or university or bachelor's (BA) degree 3
- A graduate or professional degree such as a master's (MA), doctorate (Ph.D.), law (JD), or medical (MD) degree 4
- I'm not going to school after high school 5
- Don't know 8

43. What do the following people think is the most important thing for you to do right after high school?

✔ CHECK ALL THAT APPLY IN EACH ROW

	Does not apply	Go to college	Get a full-time job	Go to a trade school or be an apprentice	Enter military service	Get married	Do what I want	Doesn't care	I don't know
Your father or male guardian	1	2	3	4	5	6	7	8	9
Your mother or female guardian	1	2	3	4	5	6	7	8	9
Your friends	1	2	3	4	5	6	7	8	9
A relative whose advice you value	1	2	3	4	5	6	7	8	9
School counselor	1	2	3	4	5	6	7	8	9
Your favorite teacher	1	2	3	4	5	6	7	8	9
Coach	1	2	3	4	5	6	7	8	9

44. Which one of the categories below comes closest to describing the job or occupation that you expect or plan to have right after high school? Even if you are not sure, check your best guess.

✓ CHECK ONLY ONE

- Will be in college or vocational school ☐ 1
- Office worker such as data entry clerk, bank teller, bookkeeper, secretary, word processor, mail carrier, ticket agent ☐ 2
- Military such as career officer or enlisted person in the Armed Forces ☐ 3
- Technical such as computer technician, medical or dental technician, draftsperson ☐ 4
- Sales such as sales representative, advertising or insurance agent, real estate broker ☐ 5
- Computer-related such as computer programmer, web-page developer ☐ 6
- Service worker such as hair stylist, practical nurse, child care worker, waiter, domestic, janitor ☐ 7
- Trades-person such as auto mechanic, housepainter, plumber, phone/cable installer, carpenter ☐ 8
- Protective service such as police officer, firefighter, detective, sheriff, security guard ☐ 9
- Full-time homemaker ☐ 10
- Laborer such as construction worker, car washer, landscaper, garbage/trash collector, farm worker ☐ 11
- Operator of machines or tools, such as meat cutter, assembler, welder, taxicab/bus/truck driver ☐ 12
- Owner of a small business or restaurant, contractor ☐ 13
- Farmer, farm manager ☐ 14
- Not planning to work ☐ 15
- Other ☐ 16

45. Which one of the categories below comes closest to describing the job or occupation that you expect or plan to have when you are 30 years old? Even if you are not sure, check your best guess.

✓ CHECK ONLY ONE

- ☐ 1 Will be in college or vocational school
- ☐ 2 Office worker such as data entry clerk, bank teller, bookkeeper, secretary, word processor, mail carrier, ticket agent
- ☐ 3 Military such as career officer or enlisted person in the Armed Forces
- ☐ 4 Professional such as accountant, registered nurse, engineer, computer programmer, banker, librarian, writer, social worker, actor, athlete, artist, politician, elementary or high school teacher
- ☐ 5 Professional such as minister, dentist, doctor, lawyer, scientist, college teacher
- ☐ 6 Technical such as computer technician, medical or dental technician, draftsperson
- ☐ 7 Sales such as sales representative, advertising or insurance agent, real estate broker
- ☐ 8 Computer-related such as computer programmer, web-page developer
- ☐ 9 Service worker such as hair stylist, practical nurse, child care worker, waiter, domestic, janitor
- ☐ 10 Trades-person such as banker, auto mechanic, house-painter, plumber, phone/cable installer, carpenter
- ☐ 11 Protective service such as police officer, firefighter, detective, sheriff, security guard
- ☐ 12 Full-time homemaker
- ☐ 13 Laborer such as construction worker, car washer, garbage collector, farm worker
- ☐ 14 Manager such as sales manager, office manager, school administrator, retail buyer, restaurant manager, government administrator
- ☐ 15 Operator of machines or tools, such as meat cutter, assembler, welder, taxicab/bus/truck driver
- ☐ 16 Owner of a small business or restaurant, contractor
- ☐ 17 Farmer, farm manager
- ☐ 18 Not planning to work
- ☐ 19 Other

46. How much education do you think you need to get that kind of job when you are 30 years old?

✓ CHECK ONLY ONE

- Less than high school . . . . . ☐ 1
- High school . . . . . ☐ 2
- Certificate from a vocational, trade, or business school (less than 2-year program) . . . . . ☐ 3
- A 2-year degree from a community college or an associate's (A.A.) degree . . . . ☐ 4
- A 4-5 year degree from a college or university or a bachelor's (B.A.) degree . . . . . ☐ 5
- A graduate or professional degree such as a master's (M.A.) or doctorate (Ph.D.), law (J.D.) or medical (M.D.) degree . . . . . ☐ 6
- Not planning to work . . . . . ☐ 7
- Don't know . . . . . ☐ 8

C. YOUR FAMILY AND HOME

47. Did any of the following people in your family go to college?

✔ CHECK ONE BOX IN EACH ROW

	Yes	No	Don't know
Mother or female guardian	1	2	3
Father or male guardian	1	2	3
An older brother or sister	1	2	3
A grandparent	1	2	3

48. In the past month, how often did you talk about the following with either or both of your parents or guardians?

✔ CHECK ONE BOX IN EACH ROW

	Frequently	A few times	Never
School activities or events of particular interest to you	1	2	3
Things you've studied in class	1	2	3
Your grades	1	2	3
Community, national, and world events	1	2	3
Things that were bothering you	1	2	3

49. Does your mother or female guardian attend school activities or events?

✔ CHECK ONLY ONE

- Yes, often ☐ 1
- Yes, sometimes ☐ 2
- No, never ☐ 3
- I don't have a mother or female guardian ☐ 4

50. Does your father or male guardian attend school activities or events?

✔ CHECK ONLY ONE

- Yes, often ☐ 1
- Yes, sometimes ☐ 2
- No, never ☐ 3
- I don't have a father or male guardian ☐ 4

51. Do you have a computer at home?

- Yes ☐ 1
- No ☐ 2

52. How often do you use the Internet each week?

✔ CHECK ONLY ONE

- Do not have access to the Internet ☐ 1
- Do not use the Internet ☐ 2
- Every day or almost every day ☐ 3
- 1 or 2 times a week ☐ 4
- 3 or 4 times a week ☐ 5

D. YOUR BACKGROUND

53. What is today's date?

Month - Day - Year

54. Are you...

- Male ... 1
- Female ... 2

55. When were you born?

Month - Day - Year

56. Do you consider yourself Hispanic/Latino?

- Yes ... 1
- No ... 2

57. How do you describe yourself?

✔ CHECK ALL THAT APPLY

- American Indian or Alaska Native ... 1
- Asian ... 2
- Black or African American ... 3
- White ... 4
- Native Hawaiian or Other Pacific Islander ... 5

58. Was English the first language you learned to speak at home?

- Yes ... 1
  (➨ GO TO QUESTION 60)
- No ... 2
  (➨ CONTINUE WITH QUESTION 59)

59. How often do you use your first language with...

✓ CHECK ONE BOX IN EACH ROW

	Always or most of the time	About half of the time	Sometimes	Never
Your mother or female guardian?	1	2	3	4
Your father or male guardian?	1	2	3	4
Your brothers or sisters?	1	2	3	4
Your friends?	1	2	3	4
Other family members?	1	2	3	4

60. Is your family planning on moving within the next year?

- Yes 1
- No 2
- Don't know 8

61. What is the name of the school you will attend next year?

✎ WRITE THE NAME OF THE SCHOOL IN THE BOX

✎

- I don't know 8

62. Counting the school you are in now, how many different schools have you attended since 1st grade?

✓ CHECK ONLY ONE

- One 1
- Two 2
- Three 3
- Four or more 4

⛔ END

Thank you for completing this survey.


Eighth Grade

Seventh-Grade Parent Interview

National Evaluation of GEAR UP
Parent Survey

INTRODUCTION

I-1. [Hello, My name is (INTERVIEWER) and I'm calling about a research study that your child's school is participating in sponsored by the United States Department of Education.]

May I speak to the person who is most knowledgeable about [CHILD] and (his/her) activities?

[WHEN PARENT/GUARDIAN OR MOST KNOWLEDGEABLE ADULT IS ON THE LINE:] The U.S. Department of Education is conducting an important study about children's educational experiences. I have some questions about [CHILD'S NAME] that will take about 30 minutes. Your participation is voluntary. Everything you say will be confidential and nothing you say will be reported individually about you, or your family. Those participating in the study will receive a telephone calling card valued at $10.

I-2. What is your relationship to [CHILD]?

MOTHER OR STEPMOTHER	1
FATHER OR STEPFATHER.....	2
GRANDMOTHER OR GRANDFATHER.	3
OTHER RELATIVE	4
GUARDIAN	5
OTHER (SPECIFY) _____	6

A. PARENTAL INVOLVEMENT

First I'm going to ask you some questions about [CHILD'S] homework.

1. Does [CHILD] receive homework?

YES	1	
NO	2	(GO TO QUESTION 8)
DON'T KNOW	8	(GO TO QUESTION 8)

2. Does [CHILD] ever do homework at home?

YES	1	
NO	2	(GO TO QUESTION 3)
DON'T KNOW	8	(GO TO QUESTION 3)

2a. How often does (he/she) do homework at home? Is it…

Less than once a week, ...	1
1 to 2 times a week, ...	2
3 to 4 times a week, or	3
5 or more times a week?.....	4
DON'T KNOW	8

3. Where does (he/she) complete (his/her) homework most often? (CIRCLE ONE)

IN SCHOOL	1	
AT HOME	2	
IN AN AFTER-SCHOOL PROGRAM	3	
OTHER (SPECIFY) _____	4	
DON'T KNOW	8	(GO TO QUESTION 7)

4. How often does (he/she) do homework at a place other than home…

Less than once a week,	1
1 to 2 times a week,	2
3 to 4 times a week,	3
5 or more times a week, or	4
Only does it at home?	5
DON'T KNOW	8

5. Including at home, in school, during after-school programs, or any other place that [CHILD] does (his/her) homework, how much time does [CHILD] spend doing homework per week on average? Would you say…

None,	1
Less than 2 hours,	2
2-3 hours,	3
4-6 hours,	4
over 6 hours,	5
DON'T KNOW	8

6. Does (he/she) seem to understand (his/her) homework? Would you say…

Always,	1
Sometimes,	2
Rarely,	3
Never,	4
DON'T KNOW	8

7. How often do you help (him/her)with homework? Would you say…

Never,	1
Less than once a week,	2
1 to 2 times a week,	3
3 to 4 times a week, or	4
5 or more times a week	5

Now I have a few questions about [CHILD'S] teacher.

8. **Since the beginning of the school year**, have you met with any of [CHILD'S] teachers?

YES	1	
NO	2	(GO TO QUESTION 11)
DON'T KNOW	8	(GO TO QUESTION 11)

9. **Since the beginning of the school year**, how many meetings have you had with [CHILD'S] teachers? Would you say…

One,	1
A few,	2
Several, or	3
I regularly meet with my child's teacher(s)	4

10. In general, what was the purpose of the meeting(s)? Was it… (CIRCLE ONE ON EACH LINE)

		YES	NO	DON'T KNOW
a.	To discuss a problem with a specific homework assignment?	1	2	8
b.	To discuss behavioral problems?	1	2	8
c.	To discuss overall academic performance/progress?	1	2	8
d.	Some other reason (SPECIFY)?_____	1	2	8

11. **Since the beginning of the school year**, has [CHILD] participated in the following activities:

∏ (IF YES) How helpful was the activity? Was it very helpful, helpful, not too helpful, or not helpful at all?

	ACTIVITIES	**YES**	**NO**	**DON'T KNOW**	∏	**Very Helpful**	**Helpful**	**Not too Helpful**	**Not Helpful At All**
a.	Tutoring	1	2	8	∏	1	2	3	4
b.	Mentoring	1	2	8	∏	1	2	3	4
c.	Counseling	1	2	8	∏	1	2	3	4
d.	Workshops	1	2	8	∏	1	2	3	4
e.	College campus visit	1	2	8	∏	1	2	3	4
f.	Job site visit	1	2	8	∏	1	2	3	4

(IF RESPONDENT ANSWERS NO OR DON'T KNOW TO ALL ACTIVITIES GO TO Q 13)

12. How did you learn about the activities that (he/she) is participating in? Was it … (CIRCLE ALL THAT APPLY)

From a letter or written notice?	1
[CHILD'S] teacher?	2
A phone call from someone other than [CHILD'S] teacher?	3
From [CHILD]?	4
Another parent?	5
You asked someone?	6
From some other source (SPECIFY)?_____	7

The next questions are about the types of school events you have attended this school year.

13. I am going to read a list of events you may have attended for [CHILD]. Please tell me if you have attended the event more than once, once, or never. **Since the beginning of the school year**, how often have you …

		More than once	Once	Never
a.	Attended a meeting on college preparation...	1	2	3
b.	Attended a meeting on study skills ……	1	2	3
c.	Attended some other meeting ……	1	2	3
d.	Visited a college……	1	2	3
e.	Attended class at college or university…..…	1	2	3

14. **Since the beginning of the school year**, have you participated in any of the following school activities?

		YES	NO	DON'T KNOW
a.	Back-to-school-night	1	2	8
b.	PTA meetings	1	2	8
c.	A school event, such as a play or sports event	1	2	8
d.	Attended a field trip, such as a museum or zoo	1	2	8

14a. **Since the beginning of the school year**, have you volunteered at your child's school?

YES	1
NO	2

B. PARENT'S SATISFACTION

Now I have a few questions about [CHILD'S] experiences **this** school year at (his/her) current school.

15. Thinking about [CHILD'S] school would you say you are very satisfied, somewhat satisfied, somewhat dissatisfied or very dissatisfied, with …..

		Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied
a.	(His/Her) education	1	2	3	4
b.	The school's approach towards college preparation	1	2	3	4
c.	The level of discipline maintained in the classroom by [CHILD'S] teacher	1	2	3	4
d.	The respect that teachers and students have for each other	1	2	3	4
e.	The level of discipline maintained in the school by the principal and the assistant principal	1	2	3	4
f.	The school's encouragement of family involvement	1	2	3	4

C. CHANGE IN ACADEMIC PERFORMANCE, ATTITUDE OR BEHAVIOR

16. Overall, what type of student is [CHILD]? Would you say …

Excellent,	1
Good,	2
Fair,	3
Poor?	4

17. **Since the beginning of the school year**, do you think [CHILD] has done excellent, good, fair, or poor in the following areas?

		Excellent	Good	Fair	Poor
a.	English	1	2	3	4
b.	Science	1	2	3	4
c.	Math	1	2	3	4
d.	History or social studies	1	2	3	4
e.	All other subjects	1	2	3	4

18. Parents generally learn how well their child is doing in school through a variety of ways. I'm going to read a list of ways. Please tell me if each way was very helpful, helpful, not too helpful or not helpful at all for you.

		Very Helpful	Helpful	Not too Helpful	Not Helpful at All	NOT APPLICABLE
a.	Parent/teacher conferences	1	2	3	4	5
b.	Homework sign-off	1	2	3	4	5
c.	Report cards	1	2	3	4	5
d.	Talking to my child	1	2	3	4	5
e.	Phone calls from teacher(s)	1	2	3	4	5
f.	Notes from teacher(s)	1	2	3	4	5

19. How important do **you** think it is that [CHILD] works hard in school? Would you say…

Very important,	1
Important,	2
Not too important, or	3
Not important at all?	4

20. How important does **[CHILD]** think it is to work hard in school? Would you say…

Very important,	1
Important,	2
Not too important, or	3
Not important at all?	4

D. PARENT EXPECTATIONS

Now, I am going to ask you some questions about your expectations for [CHILD].

21. **Since the beginning of the school year**, have you talked to (him/her) about attending college?

YES	1
NO	2

22. Do you think (he/she) will continue (his/her) education after high school? (CHILD DOES NOT HAVE TO CONTINUE EDUCATION RIGHT AFTER HIGH SCHOOL)

YES	1	
NO	2	(GO TO SECTION E)
DON'T KNOW	8	(GO TO SECTION E)

23. How far in school do you think [CHILD] will get? Would you say …

A certificate from a vocational, trade or business school,	1
An Associate's (AA) degree,	2
A Bachelor's (BA) degree,	3
A graduate or professional degree?	4

24. Do you think (he/she) will attend a college or other school after high school that is close to where you live now?

YES	1
NO	2
DON'T KNOW	8

E. KNOWLEDGE OF COLLEGE ENTRANCE REQUIREMENTS

Many people believe that it is never too soon to start preparing for college. I know that [CHILD] is only in the 7th grade, but I'm going to ask you the following questions about preparing for college.

25. **Since the beginning of the school year**, have you received any written information about the types of classes (he/she) should be taking now to prepare (himself/herself) for college?

YES	1
NO	2
DON'T KNOW	8

26. **Since the beginning of the school year**, have you attended any meetings that discussed the types of classes (he/she) should be taking now to prepare (himself/herself) for college?

YES	1
NO	2
DON'T KNOW	8

27. Given that [CHILD] is in the 7th grade, do you feel you have…
[IF CHILD IS NOT GOING TO COLLEGE, ASK FOR GENERAL OPINION ANYWAY]

Enough information about college entrance requirements…… 1
Some information but not enough about college entrance requirements.. 2
No information about college entrance requirements?…….. 3

F. KNOWLEDGE OF POSTSECONDARY EDUCATION COSTS

28. Do you think [CHILD] will be able to afford to attend a 4-year state college or university after high school? When answering this question please take into account your family's resources and any other financial sources such as financial aid from the government. Would you say…
[IF CHILD IS NOT GOING TO COLLEGE, ASK FOR GENERAL OPINION ANYWAY]

Definitely,..... 1
Probably, ... 2
Not sure,..... 3
I doubt it,..... 4
Definitely not? 5

29. Have you attended any workshops for parents that provided you with information about financial assistance for your child to attend college?

YES 1
NO..... 2 (GO TO QUESTION 30)

29a. How helpful was the information? Was it …

Very helpful, ... 1
Helpful, ... 2
Not too helpful, or..... 3
Not helpful at all? 4

30. How much do you think it costs today to attend each of the following types of institutions for 1 year? I'm interested in an estimate that includes the cost of room, board, and tuition for 1 year.

a. Community college or junior college? ..... $_____
b. Four-year state college or university? ..... $_____
c. Four-year private college or university? ..... $_____

G. EDUCATION BACKGROUND

Now I have a few questions about you and the other adult(s) in your household.

31. What is the highest grade or year of school that you have **completed** including college or vocational training?

UP TO 8TH GRADE	1
9TH TO 11TH GRADE	2
12TH BUT NO DIPLOMA	3
HIGH SCHOOL DIPLOMA OR EQUIVALENT	4
VOC/TECH PROGRAM AFTER HIGH SCHOOL BUT NO VOC/TECH DIPLOMA	5
VOC/TECH DIPLOMA AFTER HIGH SCHOOL	6
SOME COLLEGE BUT NO DEGREE	7
ASSOCIATE'S DEGREE	8
BACHELOR'S DEGREE	9
GRADUATE OR PROFESSIONAL SCHOOL BUT NO DEGREE	10
GRADUATE OR PROFESSIONAL SCHOOL WITH DEGREE	11
OTHER _____	12

32. Including yourself, how many adults live in your home who are 18 years of age or older?

|___|___|
OF ADULTS

(IF 1 GO TO Q34, IF GREATER THAN 1 ASK Q33.)

33. Among all of the adults in your household, other than yourself, what is the highest grade or year of school **completed** including college or vocational training?

UP TO 8TH GRADE	1
9TH TO 11TH GRADE	2
12TH BUT NO DIPLOMA	3
HIGH SCHOOL DIPLOMA OR EQUIVALENT	4
VOC/TECH PROGRAM AFTER HIGH SCHOOL BUT NO VOC/TECH DIPLOMA	5
VOC/TECH DIPLOMA AFTER HIGH SCHOOL	6
SOME COLLEGE BUT NO DEGREE	7
ASSOCIATE'S DEGREE	8
BACHELOR'S DEGREE	9
GRADUATE OR PROFESSIONAL SCHOOL BUT NO DEGREE	10
GRADUATE OR PROFESSIONAL SCHOOL WITH DEGREE	11
OTHER_____	12

Now I would like to talk about [CHILD'S] siblings.

34. Does [CHILD] have any **older** siblings? By sibling I am referring to biological, step, half, and adopted brother and/or sister.

YES	1	
NO	2	(GO TO QUESTION 38)
DON'T KNOW	8	(GO TO QUESTION 38)

35. How many older siblings does [CHILD] have?

|___|___|
OF SIBLINGS

36. What is the highest grade or year of school **completed** so far by any **older** siblings who have lived with [CHILD]? Include college or vocational training.

UP TO 8TH GRADE	1
9TH TO 11TH GRADE	2
12TH BUT NO DIPLOMA	3
HIGH SCHOOL DIPLOMA OR EQUIVALENT	4
VOC/TECH PROGRAM AFTER HIGH SCHOOL BUT NO VOC/TECH DIPLOMA	5
VOC/TECH DIPLOMA AFTER HIGH SCHOOL	6
SOME COLLEGE BUT NO DEGREE	7
ASSOCIATE'S DEGREE	8
BACHELOR'S DEGREE	9
GRADUATE OR PROFESSIONAL SCHOOL BUT NO DEGREE	10
GRADUATE OR PROFESSIONAL SCHOOL WITH DEGREE	11
OTHER _____	12

37. How old is that sibling?

|___|___|
AGE

H. BACKGROUND INFORMATION

38. Do you have a computer in your home?

YES	1
NO	2

39. Do you have internet access?

YES	1
NO	2

40. Does anyone in your household have a library card?

YES	1	
NO	2	(GO TO QUESTION 42)
DON'T KNOW	8	(GO TO QUESTION 42)

41. Does anyone in your household use their library card?

YES	1
NO	2
DON'T KNOW	8

42. In studies like this, households are sometimes grouped according to income. What was the total income of all persons in your household over the past year, including salaries or other earnings, interest, retirement, public assistance and so on for all household members?

$10,000 OR LESS	1
$10,001 TO $20,000	2
$20,001 TO $30,000	3
$30,001 TO $40,000	4
$40,001 TO $50,000	5
OVER $50,000	6
REFUSED	7
DON'T KNOW	8

43. Do you consider yourself Hispanic or Latino?

YES	1
NO	2

44. How do you describe yourself? (CIRCLE ALL THAT APPLY)

American Indian or Alaska Native	1
Asian	2
Black or African American	3
Native Hawaiian or Other Pacific Islander	4
White	5

Now I have a few questions to help us contact you again.

(PLEASE COMPLETE THE LOCATING INFORMATION THAT IS ATTACHED TO THE RESPONDENT INFORMATION SHEET)

Eighth-Grade Parent Interview

National Evaluation of GEAR UP
Parent Survey

INTRODUCTION

I-1. [Hello, My name is (INTERVIEWER) and I'm calling on behalf of the U.S. Department of Education to follow up on an important education study that we did last year.

May I speak to the person who is most knowledgeable about [CHILD] and (his/her) activities?

[WHEN PARENT/GUARDIAN OR MOST KNOWLEDGEABLE ADULT IS ON THE LINE:] The U.S. Department of Education is conducting an important study about children's educational experiences. We spoke with someone in your household last year about [CHILD]. I have some questions about [CHILD] that will take about 30 minutes. Your participation is voluntary. Everything you say will be confidential and nothing you say will be reported individually about you or your family. Those participating in the study will receive a telephone card valued at $10.

I-2. What is your relationship to [CHILD]?

MOTHER OR STEPMOTHER	1
FATHER OR STEPFATHER	2
GRANDMOTHER OR GRANDFATHER	3
OTHER RELATIVE	4
GUARDIAN	5
OTHER (SPECIFY) _____	6

A. PARENTAL INVOLVEMENT

First I'm going to ask you some questions about [CHILD'S] homework.

1. Does [CHILD] receive homework?

YES	1	
NO	2	(GO TO QUESTION 8)
DON'T KNOW	8	(GO TO QUESTION 8)

2. Does [CHILD] ever do homework at home?

YES	1	
NO	2	(GO TO QUESTION 3)
DON'T KNOW	8	(GO TO QUESTION 3)

2a. How often does (he/she) do homework at home? Is it…

Less than once a week,	1
1 to 2 times a week,	2
3 to 4 times a week, or	3
5 or more times a week?	4
DON'T KNOW	8

3. Where does (he/she) complete (his/her) homework most often? (CIRCLE ONE)

IN SCHOOL	1	
AT HOME	2	
IN AN AFTER-SCHOOL PROGRAM	3	
OTHER (SPECIFY) _____	4	
DON'T KNOW	8	(GO TO QUESTION 7)

4. How often does (he/she) do homework at a place other than home…

Less than once a week,	1
1 to 2 times a week,	2
3 to 4 times a week,	3
5 or more times a week, or	4
Only does it at home?	5
DON'T KNOW	8

5. Including at home, in school, during after-school programs, or any other place that [CHILD] does (his/her) homework, how much time does [CHILD] spend doing homework per week on average? Would you say…

None,	1
Less than 2 hours,	2
2-3 hours,	3
4-6 hours,	4
over 6 hours,	5
DON'T KNOW	8

6. Does (he/she) seem to understand (his/her) homework? Would you say…

Always,	1
Sometimes,	2
Rarely,	3
Never,	4
DON'T KNOW	8

7. How often do you help (him/her) with homework? Would you say…

Never,	1
Less than once a week,	2
1 to 2 times a week,	3
3 to 4 times a week, or	4
5 or more times a week	5

Now I have a few questions about [CHILD'S] teacher.

8. **Since the beginning of the school year**, have you met with any of [CHILD'S] teachers?

YES	1	
NO	2	(GO TO QUESTION 11)
DON'T KNOW	8	(GO TO QUESTION 11)

9. **Since the beginning of the school year**, how many meetings have you had with [CHILD'S] teachers? Would you say…

One,.....	1
A few, ...	2
Several, or.....	3
I regularly meet with my child's teacher(s).....	4

11. In general, what was the purpose of the meeting(s)? Was it… (CIRCLE ONE ON EACH LINE)

		YES	NO	DON'T KNOW
a.	To discuss a problem with a specific homework assignment?..	1	2	8
b.	To discuss behavioral problems?.....	1	2	8
c.	To discuss overall academic performance/progress?.....	1	2	8
d.	Some other reason (SPECIFY)?_____	1	2	8

11. **Since the beginning of the school year**, has [CHILD] participated in the following activities:

∏ (IF YES) How helpful was the activity? Was it very helpful, helpful, not too helpful, or not helpful at all?

	ACTIVITIES	**YES**	**NO**	**DON'T KNOW**	∏	**Very Helpful**	**Helpful**	**Not too Helpful**	**Not Helpful At All**
a.	Tutoring	1	2	8	∏	1	2	3	4
b.	Mentoring	1	2	8	∏	1	2	3	4
c.	Counseling	1	2	8	∏	1	2	3	4
d.	Workshops	1	2	8	∏	1	2	3	4
e.	College campus visit	1	2	8	∏	1	2	3	4
f.	Job site visit	1	2	8	∏	1	2	3	4

(IF RESPONDENT ANSWERS NO OR DON'T KNOW TO ALL ACTIVITIES GO TO Q 13)

12. How did you learn about the activities that (he/she) is participating in? Was it … (CIRCLE ALL THAT APPLY)

From a letter or written notice?.....	1
[CHILD'S] teacher?.....	2
A phone call from someone other than [CHILD'S] teacher?	3
From [CHILD]?.....	4
Another parent?.....	5
You asked someone?.....	6
From some other source (SPECIFY)?_____	7

The next questions are about the types of school events you have attended this school year.

13. I am going to read a list of events you may have attended for [CHILD]. Please tell me if you have attended the event more than once, once, or never. **Since the beginning of the school year**, how often have you …

		More than once	Once	Never
a.	Attended a meeting on college preparation...	1	2	3
b.	Attended a meeting on study skills ……	1	2	3
c.	Attended some other meeting ……	1	2	3
d.	Visited a college……	1	2	3
e.	Attended class at college or university…..…	1	2	3

14. **Since the beginning of the school year**, have you participated in any of the following school activities?

		YES	NO	DON'T KNOW
a.	Back-to-school-night	1	2	8
b.	PTA meetings	1	2	8
c.	A school event, such as a play or sports event	1	2	8
d.	Attended a field trip, such as a museum or zoo	1	2	8

14a. **Since the beginning of the school year**, have you volunteered at your child's school?

YES	1
NO	2

B. PARENT'S SATISFACTION

Now I have a few questions about [CHILD'S] experiences **this** school year at (his/her) current school.

15. Thinking about [CHILD'S] school would you say you are very satisfied, somewhat satisfied, somewhat dissatisfied or very dissatisfied, with …..

		Very Satisfied	Somewhat Satisfied	Somewhat Dissatisfied	Very Dissatisfied
a.	(His/Her) education	1	2	3	4
b.	The school's approach towards college preparation	1	2	3	4
c.	The level of discipline maintained in the classroom by [CHILD'S] teacher	1	2	3	4
d.	The respect that teachers and students have for each other	1	2	3	4
e.	The level of discipline maintained in the school by the principal and the assistant principal	1	2	3	4
f.	The school's encouragement of family involvement	1	2	3	4

C. CHANGE IN ACADEMIC PERFORMANCE, ATTITUDE OR BEHAVIOR

16. Overall, what type of student is [CHILD]? Would you say …

Excellent,	1
Good,	2
Fair,	3
Poor?	4

17. **Since the beginning of the school year**, do you think [CHILD] has done excellent, good, fair, or poor in the following areas?

		Excellent	Good	Fair	Poor
a.	English	1	2	3	4
b.	Science	1	2	3	4
c.	Math	1	2	3	4
d.	History or social studies	1	2	3	4
e.	All other subjects	1	2	3	4

18. Parents generally learn how well their child is doing in school through a variety of ways. I'm going to read a list of ways. Please tell me if each way was very helpful, helpful, not too helpful or not helpful at all for you.

		Very Helpful	Helpful	Not too Helpful	Not Helpful at All	NOT APPLICABLE
a.	Parent/teacher conferences.....	1	2	3	4	5
b.	Homework sign-off	1	2	3	4	5
c.	Report cards.....	1	2	3	4	5
d.	Talking to my child.....	1	2	3	4	5
e.	Phone calls from teacher(s)	1	2	3	4	5
f.	Notes from teacher(s)	1	2	3	4	5

19. How important do **you** think it is that [CHILD] works hard in school? Would you say…

Very important, ...	1
Important,.....	2
Not too important, or.....	3
Not important at all?	4

20. How important does **[CHILD]** think it is to work hard in school? Would you say…

Very important, ...	1
Important,.....	2
Not too important, or.....	3
Not important at all?	4

D. PARENT EXPECTATIONS

Now, I am going to ask you some questions about your expectations for [CHILD].

21. **Since the beginning of the school year**, have you talked to (him/her) about attending college?

YES.....	1
NO	2

22. Do you think (he/she) will continue (his/her) education after high school? (CHILD DOES NOT HAVE TO CONTINUE EDUCATION RIGHT AFTER HIGH SCHOOL)

YES.....	1	
NO	2	(GO TO SECTION E)
DON'T KNOW	8	(GO TO SECTION E)

23. How far in school do you think [CHILD] will get? Would you say …

A certificate from a vocational, trade or business school, ...	1
An Associate's (AA) degree,.....	2
A Bachelor's (BA) degree, ...	3
A graduate or professional degree?	4

24. Do you think (he/she) will attend a college or other school after high school that is close to where you live now?

YES 1
NO 2
DON'T KNOW 8

E. KNOWLEDGE OF COLLEGE ENTRANCE REQUIREMENTS

Many people believe that it is never too soon to start preparing for college. I know that [CHILD] is only in the 8th grade, but I'm going to ask you the following questions about preparing for college.

25. **Since the beginning of the school year**, have you received any written information about the types of classes (he/she) should be taking now to prepare (himself/herself) for college?

YES 1
NO 2
DON'T KNOW 8

26. **Since the beginning of the school year**, have you attended any meetings that discussed the types of classes (he/she) should be taking now to prepare (himself/herself) for college?

YES 1
NO 2
DON'T KNOW 8

27. Given that [CHILD] is in the 8th grade, do you feel you have…
[IF CHILD IS NOT GOING TO COLLEGE, ASK FOR GENERAL OPINION ANYWAY]

Enough information about college entrance requirements…… 1
Some information but not enough about college entrance requirements.. 2
No information about college entrance requirements?…….. 3

F. KNOWLEDGE OF POSTSECONDARY EDUCATION COSTS

28. Do you think [CHILD] will be able to afford to attend a 4-year state college or university after high school? When answering this question please take into account your family's resources and any other financial sources such as financial aid from the government. Would you say…
[IF CHILD IS NOT GOING TO COLLEGE, ASK FOR GENERAL OPINION ANYWAY]

Definitely,..... 1
Probably, ... 2
Not sure,..... 3
I doubt it,..... 4
Definitely not? 5

29. Have you attended any workshops for parents that provided you with information about financial assistance for your child to attend college?

YES 1
NO ..... 2 (GO TO QUESTION 30)

29a. How helpful was the information? Was it …

Very helpful,.....	1
Helpful,.....	2
Not too helpful, or	3
Not helpful at all?.....	4

30. How much do you think it costs today to attend each of the following types of institutions for 1 year? I'm interested in an estimate that includes the cost of room, board, and tuition for 1 year.

a.	Community college or junior college?.....	$_____
b.	Four-year state college or university?.....	$_____
c.	Four-year private college or university?	$_____

G. EDUCATION BACKGROUND

Now I have a few questions about you and the other adult(s) in your household.

31. What is the highest grade or year of school that you have **completed** including college or vocational training?

UP TO 8TH GRADE.....	1
9TH TO 11TH GRADE.....	2
12TH BUT NO DIPLOMA.....	3
HIGH SCHOOL DIPLOMA OR EQUIVALENT.....	4
VOC/TECH PROGRAM AFTER HIGH SCHOOL BUT NO VOC/TECH DIPLOMA.....	5
VOC/TECH DIPLOMA AFTER HIGH SCHOOL.....	6
SOME COLLEGE BUT NO DEGREE	7
ASSOCIATE'S DEGREE.....	8
BACHELOR'S DEGREE	9
GRADUATE OR PROFESSIONAL SCHOOL BUT NO DEGREE	10
GRADUATE OR PROFESSIONAL SCHOOL WITH DEGREE	11
OTHER _____.....	12

32. Including yourself, how many adults live in your home who are 18 years of age or older?

|___|___|
OF ADULTS

(IF 1 GO TO Q34, IF GREATER THAN 1 ASK Q33.)

33. Among all of the adults in your household, other than yourself, what is the highest grade or year of school **completed** including college or vocational training?

UP TO 8TH GRADE	1
9TH TO 11TH GRADE	2
12TH BUT NO DIPLOMA	3
HIGH SCHOOL DIPLOMA OR EQUIVALENT	4
VOC/TECH PROGRAM AFTER HIGH SCHOOL BUT NO VOC/TECH DIPLOMA	5
VOC/TECH DIPLOMA AFTER HIGH SCHOOL	6
SOME COLLEGE BUT NO DEGREE	7
ASSOCIATE'S DEGREE	8
BACHELOR'S DEGREE	9
GRADUATE OR PROFESSIONAL SCHOOL BUT NO DEGREE	10
GRADUATE OR PROFESSIONAL SCHOOL WITH DEGREE	11
OTHER_____	12

Now I would like to talk about [CHILD'S] siblings.

34N. Does [CHILD] have **any** siblings? By sibling I am referring to biological, step, half, and adopted brother and/or sister.

YES	1	
NO	2	(GO TO QUESTION 38)
DON'T KNOW	8	(GO TO QUESTION 38)

35a. How many younger siblings does [CHILD] have? By younger siblings I am referring to brothers or sisters who are the same age or younger.

|___|___|
OF SIBLINGS

35. How many older siblings does [CHILD] have?

|___|___|
OF SIBLINGS

36. What is the highest grade or year of school **completed** so far by this/these **older** siblings? We are only interested in siblings who liven with [CHILD]. Include college or vocational training.

UP TO 8TH GRADE	1
9TH TO 11TH GRADE	2
12TH BUT NO DIPLOMA	3
HIGH SCHOOL DIPLOMA OR EQUIVALENT	4
VOC/TECH PROGRAM AFTER HIGH SCHOOL BUT NO VOC/TECH DIPLOMA	5
VOC/TECH DIPLOMA AFTER HIGH SCHOOL	6
SOME COLLEGE BUT NO DEGREE	7
ASSOCIATE'S DEGREE	8
BACHELOR'S DEGREE	9
GRADUATE OR PROFESSIONAL SCHOOL BUT NO DEGREE	10
GRADUATE OR PROFESSIONAL SCHOOL WITH DEGREE	11
OTHER _____	12

37. How old is that sibling?

|___|___|
AGE

H. BACKGROUND INFORMATION

38. Do you have a computer in your home?

YES	1	
NO	2	

39. Do you have internet access?

YES	1	
NO	2	

40. Does anyone in your household have a library card?

YES	1	
NO	2	(GO TO QUESTION 42)
DON'T KNOW	8	(GO TO QUESTION 42)

41. Does anyone in your household use their library card?

YES	1
NO	2
DON'T KNOW	8

42. In studies like this, households are sometimes grouped according to income. What was the total income of all persons in your household over the past year, including salaries or other earnings, interest, retirement, public assistance and so on for all household members?

$10,000 OR LESS	1
$10,001 TO $20,000	2
$20,001 TO $30,000	3
$30,001 TO $40,000	4
$40,001 TO $50,000	5
OVER $50,000	6
REFUSED	7
DON'T KNOW	8

43. Do you consider yourself Hispanic or Latino?

YES	1
NO	2

44. How do you describe yourself? (CIRCLE ALL THAT APPLY)

American Indian or Alaska Native	1
Asian	2
Black or African American	3
Native Hawaiian or Other Pacific Islander	4
White	5

Now I have a few questions to help us contact you again.

(PLEASE COMPLETE THE LOCATING INFORMATION THAT IS ATTACHED TO THE RESPONDENT INFORMATION SHEET)

Student Information Matrix

(Administrative Records Data)

SIM:

The National Evaluation of GEAR UP

Student Information Matrix

School Name: Main Street Middle School

School ID: 99-9

School Year: 2000-2001

Grade Level: 7

Individual(s) completing SIM: _____

Date: _____

CONFIDENTIAL

Student ID	Student Name	Survey ID	Birth Date	Gender			Race/Ethnicity							Individualized Education Plan?			Limited-English proficient?			Enrollment in special programs during the current school year: Free/Reduced-Price lunch?			Honors/ G&T / AP?			ESL or bilingual?			Most recent date of enrollment	Attendance during the current school year: Absences			Tardies			Disciplinary Actions					Awards/ Honors Received			Currently at this school			If no longer at school, reason for leaving			
			MM/DD/YYYY	MALE	FEMALE	NOT AVAILABLE	AMERICAN INDIAN OR ALASKA NATIVE	ASIAN	BLACK OR AFRICAN AMERICAN	HISPANIC OR LATINO	WHITE	NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER	NOT AVAILABLE	YES	NO	NOT AVAILABLE	YES	NO	NOT AVAILABLE	YES	NO	NOT AVAILABLE	YES	NO	NOT AVAILABLE	YES	NO	NOT AVAILABLE	MM/DD/YYYY	# OF EXCUSED ABSENCES	# OF UNEXCUSED ABSENCES	TOTAL # OF ABSENCES	# OF EXCUSED TARDIES	# OF UNEXCUSED TARDIES	TOTAL # OF TARDIES	# OF IN-SCHOOL SUSPENSIONS	# OF OUT-OF-SCHOOL SUSPENSIONS	# OF TRUANCIES	# OF EXPULSIONS	TOTAL # OF DISCIPLINARY ACTIONS	YES	NO	NOT AVAILABLE	YES	NO	NOT AVAILABLE	TRANSFERRED	DROPPED OUT	EXPELLED	NOT AVAILABLE
1234567890	Firstname MI Lastname	99-9-001	01/03/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
1234567891	Firstname MI Lastname	99-9-002	02/03/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
1234537890	Firstname MI Lastname	99-9-003	01/07/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
0125567890	Firstname MI Lastname	99-9-004	11/12/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
1234507890	Firstname MI Lastname	99-9-005	10/03/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
1834567890	Firstname MI Lastname	99-9-006	01/28/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
9234567890	Firstname MI Lastname	99-9-007	03/09/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
1234567290	Firstname MI Lastname	99-9-008	09/22/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
1230567890	Firstname MI Lastname	99-9-009	12/03/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8
1234567830	Firstname MI Lastname	99-9-010	06/18/1987	1	2	8	1	2	3	4	5	6	8	1	2	8	1	2	8	1	2	8	1	2	8	1	2	8													1	2	8	1	2	8	1	2	3	8

Activity Records Forms

One-On-One Scheduled Student Activities:

GEAR UP

National Evaluation of GEAR UP:
One-on-one Scheduled Student Activities

Page 1 of 24

Project Name: **Grantee name**

Week Beginning: ☐☐/☐☐/☐☐

Activity:
a. Careers
b. Academic
c. Mentoring
d. Shadowing
e. Tutoring
f. College preparation
g. College financial assistance
h. Other (SPECIFY) _____
_____

When:
i. Before school
j. During school
k. After school
l. Weekend
m. Summer Intercession

Lead Provider:
n. Classroom teacher
o. Paraprofessional
p. School counselor
q. Other school professional
r. Project staff
s. College faculty
t. College student
u. Parent volunteer
v. Business volunteer
w. Community volunteer
x. Other (SPECIFY)_____

	STUDENT	Hours this week (hrs/min)	Service(s) (Mark all that apply - codes above)	Timing-(Mark all that apply-codes above)	Lead instructor (codes above)
1	Lastname Last Firstname M.I. First M.I. Student GEAR UP ID StudentID StudentID Birthdate Date of Birth	☐☐:☐☐	a b c d e f g h O O O O O O O O	i j k l m O O O O O	n o p q r s t u v w x O O O O O O O O O O O O
2	Lastname Last Firstname M.I. First M.I. Student GEAR UP ID StudentID StudentID Birthdate Date of Birth	☐☐:☐☐	a b c d e f g h O O O O O O O O	i j k l m O O O O O	n o p q r s t u v w x O O O O O O O O O O O O
3	Lastname Last Firstname M.I. First M.I. Student GEAR UP ID StudentID StudentID Birthdate Date of Birth	☐☐:☐☐	a b c d e f g h O O O O O O O O	i j k l m O O O O O	n o p q r s t u v w x O O O O O O O O O O O O
4	Lastname Last Firstname M.I. First M.I. Student GEAR UP ID StudentID StudentID Birthdate Date of Birth	☐☐:☐☐	a b c d e f g h O O O O O O O O	i j k l m O O O O O	n o p q r s t u v w x O O O O O O O O O O O O
5	Lastname Last Firstname M.I. First M.I. Student GEAR UP ID StudentID StudentID Birthdate Date of Birth	☐☐:☐☐	a b c d e f g h O O O O O O O O	i j k l m O O O O O	n o p q r s t u v w x O O O O O O O O O O O O

Student Group Activity Attendance Form:

gear Up

National Evaluation of GEAR UP:
Student Group Activity Attendance Form

Project Name: **Grantee name**

Page 1 of 8

Date of Activity: ☐☐/☐☐/☐☐

Total Number of Participants: ☐☐☐

Name of Activity: ____________________

Activity lasted: ☐☐ hours and ☐☐ minutes

Type: (mark one)	Subject: (mark all that apply)		Timing: (mark one)	Lead instructor: (mark one)	
O Tutoring/Supplemental instruction	O English	O College Preparation	O Before school	O Classroom teacher	O College student
O Computer-assisted lab	O Math	O Study Skills	O During school	O Paraprofessional	O Parent Volunteer
O Workshop	O Science	O Careers	O After school (afternoon)	O School counselor	O Business volunteer
O Field Trips	O Other Academic Subject	O Other	O After school (evening)	O Other school professional	O Community volunteer
O Other ______	O Test Preparation for School-Required Standardized Test		O Weekend	O Project Staff	O Other ______
	O Test Preparation for College Entrance Exam		O Summer Intercession	O College faculty	

STUDENT		STUDENT		STUDENT	
1 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	6 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	11 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth
2 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	7 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	12 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth
3 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	8 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	13 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth
4 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	9 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	14 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth
5 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	10 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth	15 FILL IF PRESENT O **Lastname** Last **Firstname** **M.I.** First M.I.	Student GEAR UP ID **Student ID** Student ID **Birthdate** Date of Birth

National Evaluation of GEAR UP: Parent Group Activity Attendance Form

Project Name: **Grantee Name**

Date of Activity: ☐☐/☐☐/☐☐

Total Number of Participants: ☐☐☐

Name of Activity: _____

Activity lasted: ☐☐ hours and ☐☐ minutes

Type: (mark one)	Subject: (mark all that apply)	Timing: (mark one)		Lead instructor: (mark one)	
○ Workshop	○ College preparation	○ Before school	○ Weekend	○ Classroom teacher	○ College student
○ Classroom instruction	○ College financial assistance	○ During school	○ Summer intercession	○ Paraprofessional	○ Parent volunteer
○ Computer-assisted lab	○ Other _____	○ After school (afternoon)		○ School counselor	○ Business volunteer
○ Other		○ After school (evening)		○ Other school professional	○ Community volunteer
				○ College faculty	○ Other _____

STUDENT		STUDENT		STUDENT	
1 FILL IF PRESENT ○		6 FILL IF PRESENT ○		11 FILL IF PRESENT ○	
Lastname	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**
Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**
First M.I.	Date of Birth	First M.I.	Date of Birth	First M.I.	Date of Birth
2 FILL IF PRESENT ○		7 FILL IF PRESENT ○		12 FILL IF PRESENT ○	
Lastname	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**
Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**
First M.I.	Date of Birth	First M.I.	Date of Birth	First M.I.	Date of Birth
3 FILL IF PRESENT ○		8 FILL IF PRESENT ○		13 FILL IF PRESENT ○	
Lastname	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**
Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**
First M.I.	Date of Birth	First M.I.	Date of Birth	First M.I.	Date of Birth
4 FILL IF PRESENT ○		9 FILL IF PRESENT ○		14 FILL IF PRESENT ○	
Lastname	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**
Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**
First M.I.	Date of Birth	First M.I.	Date of Birth	First M.I.	Date of Birth
5 FILL IF PRESENT ○		10 FILL IF PRESENT ○		15 FILL IF PRESENT ○	
Lastname	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**	**Lastname**	Student GEAR UP ID **Student ID**
Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**	Last **Firstname** **M.I.**	Student ID **Birthdate**
First M.I.	Date of Birth	First M.I.	Date of Birth	First M.I.	Date of Birth

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