ABSTRACT
                From 1985-86, the National Assessment of Educational
Progress (NAEP) conducted a special survey of reading and mathematics
performance of language minority Asian American, Hispanic American,
and Native American children to determine the progress of these
children at grades 3, 7, and 11. The study also sought to identify
whether the differences in achievement within and among the groups
could be at least partially explained by differences in demographic
background, language use and competence, attitudes and school-related
behaviors, and school experiences. Three achievement measures were
examined, including: (1) academic performance as measured by seventh-
and eleventh-grade students' self-report of grades in school; (2)
NAEP reading scores for seventh-graders; and (3) NAEP math scores for
third-, seventh-, and eleventh-grade students. Factors relating to
the students' self-reports of high grades and to students' tested
reading and math scores indicated that (1) frequency of second
language use in the home had a significant positive relationship to
grades in the total sample, as did English competence; and (2) locus
of control, English competency, and positive attitudes toward reading
tended to be important explanatory variables of reading performance,
but that frequency of second language use in home had little or no
relationship to reading performance. Sample NAEP reading and math
test items are appended. (Author/DJD)

THE EDUCATIONAL PROGRESS OF LANGUAGE
MINORITY CHILDREN: FINDINGS FROM
THE NAEP 1985-86 SPECIAL STUDY

naep

Reading
Math
Science

*National
Assessment of
Educational
Progress* (ETS)

The Nation's Report Card

THE EDUCATIONAL PROGRESS OF LANGUAGE
MINORITY CHILDREN: FINDINGS FROM
THE NAEP 1985-86 SPECIAL STUDY

Joan Baratz-Snowden
Donald Rock
Judith Pollack
Gita Wilder

National Assessment of Educational Progress/
Educational Testing Service
Princeton, New Jersey

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3

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EXECUTIVE SUMMARY

In 1985-86, as a supplement to its regular assessment activities, the National Assessment of Educational Progress (NAEP) conducted a special survey of reading and mathematics performance of language minority children. The purpose of this special study was to assess the achievement of these children at grades 3, 7 and 11. In addition, we wished to explore whether identified differences in achievement among the groups might be at least partially explained by differences in demographic backgrounds, language use and competence, attitudes and school·related behaviors, and school experiences.

We administered NAEP reading and math assessment items to a nationally representative sample of Asian American students and a representative sample of Mexican American, Puerto Rican, Cuban and Other Hispanic students attending schools with a high concentration of Hispanic pupils. Students also responded to a survey instrument containing items relating to the students' personal characteristics, their language use and competence, school experiences and school attitudes and behaviors. Students judged by school personnel to be limited in English proficiency were excluded from the study.

How do the groups compare in achievement? Three achievement measures were examined -- academic performance as measured by seventh and eleventh grade students self-report of grades in school; NAEP reading scores for seventh graders; and NAEP math scores for third, seventh and eleventh grade students.

Asian students report receiving higher grades than do Hispanic students. Furthermore, the NAEP math scores confirm findings from previous studies regarding the high mathematics achievement of Asian students. Asian students also demonstrate higher performance in reading at grade 7 than do the Hispanic students.

The achievement results of the various Hispanic groups do not reveal a consistent pattern of performance among the groups. There were no differences among Cubans, Mexican Americans, Puerto Ricans and Other Hispanics on academic grades received at the seventh grade level, but at eleventh grade, Mexican American students were more likely than Cuban and Other Hispanic students to receive C's or C's and D's. At grade 3 and 7, there are no differences in math performance among the Cubans, Mexican Americans, Puerto Rican

and Other Hispanic groups, but at grade 11, the Other Hispanic and Cuban students out perform the Mexican American and Puerto Rican students. Seventh grade reading achievement results indicate no differences in performance among the Hispanic groups.

Because there were significant differences in background characteristics and school related behaviors among the groups participating in this study, we used a path analyses to examine the relationship of these differences to self reported academic grades, reading scores and mathematics scores. After statistically controlling for differences in: (1) background demographics and language variables, (2) home educational support systems, (3) attitudes towards schooling, (4) school behaviors such as courses taken and amount of homework, and (5) characteristics of school attended, significant differences in self-reported academic grades and reading and math NAEP scores remained favoring Asians.

We examined the factors related to students' self-reports of high grades, and to their reading and math scores and found that:

o Asians still reported better grades, after controlling for background, language use, school attitudes and school characteristics. The frequency of second language use in the home had a significant positive relationship with grades in the total sample as did English competence. Positive attitudes towards schooling and amount of homework done showed relatively consistent positive relationships with grades.

o locus of control, English competency and positive attitudes toward reading tended to be important explanatory variables of reading performance in almost all groups, but frequency of second language usage in the home had little or no relationship with reading performance. After controlling for other factors identified in the study, Asians still performed significantly better than the Hispanic groups on the reading items.

o at grades 3 and 7 the Asian students performed significantly better on the NAEP math items than all the Hispanic groups after holding other significant variables constant. The results at grade 11 were quite similar with the exception that the differential in favor of the Asian students was only significant when contrasted with

ii

Mexican Americans, Puerto Ricans and Other
Hispanics, but not with Cubans. Mathematics
achievement is significantly related to literacy
items in the home at alll three grades. Other
important explanatory variables were locus of
control at both the seventh and the eleventh grade
and school behaviors such as courses taken and
homework done at the eleventh grade.

When controlling for all the background variables, we
found little consistency in the performance differences among
the Hispanic groups at grades three and seven. The one
exception was that the Puerto Rican students performed less
well in reading and mathematics than did the Mexican American
students at grade seven. At grade 11, the Cuban students
showed significantly better math performance than the Puerto
Rican group after controlling on other factors.

What have we learned about the relationship between
language use and competence and achievement? There is little
or no consistent relationship between any of the achievement
outcomes and frequency of use of a non-English language in
the home. Competency in English, however, shows positive
relationships with academic grades and also with important
mediating variables such as locus of control. It also showed
significant positive relationships with mathematics
achievement at grades 7 and 11. It would appear that whether
or not one comes from a home where a second language is
frequently spoken is not the critical issue, but rather the
central question is whether or not one is competent in
English.

The question of whether or not differences between the
high achieving Asians and the remaining groups can be
explained by differences in the background and process
variables used in this study can for the most part be
answered "no." Controlling for those background and process
variables reduces the initial differences in mathematics
achievement by about a half at grades 3 and 7. The reduction
in difference is more marked at grade 11, but selection
factors such as differential dropout rates may also be
operating here. The variables that explained the largest
proportion of the differential favoring the Asians were
having positive school related attitudes, doing more homework
and taking more rigorous coursework.

One must be cautious in overgeneralizing from the data to policy. Nonetheless, some of the results are consistent and confirmatory of previous research and should not be ignored. In particular,

o The findings here, as elsewhere, indicate the important relationship between courses taken and achievement. Although there are many reasons why students are not enrolled in more rigorous, academic courses at the high school level -- previous academic performance in the subject area, lack of interest, poor counseling, unavailable teaching personnel, to name a few -- it is important to prepare and encourage Hispanic students to enroll in these courses.

o Locus of control appears to be an important factor in achievement. This may be an area where schools can intervene to make a difference. Schools could develop policies and activities that build confidence in one's ability to make a difference, teach values that stress self-efficacy and the relationship between effort and success, reward effort and assure that unfair institutional barriers are not present.

o English competence is important. It is related in this study to factors that directly predict achievement. While the methodology employed in this study did not permit us to identify effective practices for teaching English to language minority students, the findings do illustrate the importance of learning English to academic success.

iv

TABLE OF CONTENTS

Appendices

    A. Special NAEP Assessment Sample Design
    B. NAEP Mathematics and Reading Items
    C. Variables Used in the Study

TABLE OF TABLES

11

CHAPTER ONE

Introduction

The National Assessment of Educational Progress (NAEP) is an ongoing, Congressionally-mandated project established to conduct national surveys of the educational attainment of young Americans. It is funded by the Department of Education and administered by Educational Testing Service.

Since 1969, NAEP has assessed the performance of 9 year olds, 13 year olds and 17 year olds. The subject areas assessed have included reading, writing, mathematics, science, and social studies, as well as citizenship, literature, art, music and career development. In 1983-84 NAEP began sampling students by grade as well as age. While NAEP sampling procedures yield accurate estimates for these three age groups and for the national student population in grades 3, 7 and 11, as well as reliable estimates for White and Black students at those grades, the sample of other significant groups of students — Hispanics, Asians and Native Americans — has tended to be small and of limited value for analyses of variables associated with performance for these subgroups.

But the proportion of Hispanic and Asian elementary and secondary students has increased in recent years and population projections indicate that these groups are the fastest growing sector in the population (Hodgkinson, 1985). Indeed, population forecasts for the year 2020 indicate that more than a third of the school children in the United States will come from racial/ethnic minority households. Hispanic youngsters will represent approximately 17%, Asian and Native American children about 5% and Black children, 19% of the school age population (Spencer, 1986). Research has demonstrated considerable diversity in academic performance among the various racial and ethnic minorities, with most groups showing a deficit in performance when compared to White students.

Purpose of this Study

Baratz-Snowden and Duran (1987) used data from the 1983-84 National Assessment to report on the educational progress of language minority Hispanic and Asian students. That study was limited for a number of reasons including the fact that the NAEP assessment had only two questions relating to language use, the sample of Asians was very small, and although the Hispanic sample was adequate for general discussion, the subgroup sample sizes were too small to allow analysis by distinct Hispanic ethnic groups.

In order to redress these limitations, and to report more reliable
national performance data for the growing Asian and Hispanic populations,
NAEP conducted a special study in 1985-86. The purpose of this special
study is to:

o investigate differences in both tested and self-reported school
achievement of various ethnic groups at three grade levels, and to

o explore whether those differences in achievement can be at least
partially explained by differences in: 1. demographic
characteristics, 2. home educational support systems, 3. language
use and competence in both English and students' non-English
language, 4. attitudes toward schooling, and 5. school behaviors.

The NAEP data base with its supplemental samples of selected ethnic
groups is unique in that it is probably the only nationally representative
source of achievement data on such a diverse set of ethnic groups at three
grade levels. This is not to say that there does not remain both sampling
coverage problems and other potential sources of bias. These limitations
are discussed in some detail further on in the report.

Organization of the Report

Following this brief Introduction, Chapter Two reviews the literature
on reading and mathematics performance of Hispanic, Asian and Native
American students. Chapter Three discusses the methodology and the survey
instruments used in this study as well as the limitations of the study.
Chapter Four details the descriptive findings concerning differences among
the groups on the variables of interest to this study. Chapter Five
describes our model of determinants of achievement and discusses the
findings from the relational analyses. The final chapter briefly summarizes
the findings and presents our discussion and conclusions.

CHAPTER TWO

Literature Review

Below we briefly review recent literature on the achievement of
Hispanic, Asians and Native American students with particular reference to
the relationship of demographic characteristics (e.g. ethnicity, gender,
nativity, socioeconomic status), language (e.g. use of non-English language,
competence in English), home educational support systems (e.g. literacy
items in the home) school attitudes (e.g. the importance of education) and
school related behaviors (e.g. amount of homework done, type of coursework
taken) to school performance. The relationship of school characteristics to
achievement (e.g. minority enrollment) is also presented. The literature on
Hispanic students is reviewed first, followed by studies on achievement of
Asian and Native American students.

Determinants of Hispanic Achievement

The Hispanic population in the United States is a diverse group.
According to Census data, 60% of the Hispanic population in the United
States is Mexican American, 14% Puerto Rican, 20% Other Hispanic and 6%
Cuban (U.S. Bureau of the Census, 1981). In reviewing studies of Hispanic
performance it is important to remember that each of these subgroups is
unique. The groups have had different immigration and settlement histories
within this country, and are currently not homogeneous in terms of
demographic characteristics and socioeconomic status. Furthermore, within
the various groups there is considerable diversity (Ford Foundation, 1984).

Many studies document the lower achievement levels of Hispanic
students,[1] through all grades, in both reading and mathematics. Although
overall reading proficiency levels for Hispanic students aged 9, 13 and 17
have been steadily increasing since 1971, their estimated mean proficiency
levels still fall significantly below those of their White peers (NAEP,
1985). Similar results are evident from College Board data for mathematics
and verbal developed ability measures. For example, verbal scores from the
1982-83 SAT data revealed a median of 428 for all students who indicated
English was their best language, while median verbal scores for Mexican
American and Puerto Rican students who indicated English as their best

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[1] To make the text less cumbersome, we have refrained from using terms
such as "on average" or "as a group," when discussing findings related to
median or mean group differences.

4

language were 374 and 365 respectively; those whose best language was not English obtained medians of only 290 and 282 (Duran, Enright, & Rock, 1985).

In an effort to understand these results, researchers have focused on the relationship between language factors and achievement levels, addressing language variables such as extent of family members' use of Spanish, students' use of Spanish, and type of school language program in which students are enrolled. These variables have been linked to native language proficiency, English language proficiency, reading, mathematics and overall achievement levels.

By means of multiple regression techniques (and discriminant analyses in particular), several studies have examined the relative effects of various factors on levels of language proficiency, and reading and mathematics scores. When variables such as language use, family background characteristics (e.g. parents' education, income and occupation, and nativity), student attitudes, parent and teacher influence, minority status, and gender are included in the equation, variables in isolation become much less significant predictors of achievement, while interactions become more important predictors of achievement.

In an investigation of the background characteristics and achievement levels of Hispanic first through sixth grade children in a nationally representative data base, Rosenthal, Baker and Ginsburg (1983) found several significant relationships and interactions. They examined two different aspects of what has generally been considered academic achievement. The dependent variable "learning," as distinguished from a unitary achievement score, was defined as learning gains during a school year and measured as the residual gains in achievement scores at the beginning and end of a semester. Results of the study showed home background (defined as parents' education, income and occupation, and ethnicity) to be more strongly associated with status in reading and mathematics achievement than was language background (home use), but those same variables had very little explanatory power in regard to gains. Language background was found to be a significant predictor of reading achievement (accounting for just under 50% of the variance in the original difference) and a somewhat less strong, though still significant, predictor of mathematics achievement (about 25%). Among the non-language variables, socioeconomic status accounted for most of the explanatory power, though ethnicity still had some additional effect. The effect of language use on learning, though present, was much smaller than its effect on achievement.

So and Chan (1984) did a comparable study of language background, and socioeconomic influences on reading achievement, using a nationally representative sample of high school sophomores and seniors. Their conclusions were:

> Both language background and socioeconomic status have a substantial and independent impact on reading achievement scores, but socioeconomic status has more of an impact on White students than on Hispanic students (p. 27).

Only about half of the reading gap (between language minority and non-language minority students) was accounted for by removing the effect of socioeconomic status and ethnicity (p. 27).

For the English dominant Hispanic bilingual students, the medium and high socioeconomic status groups more readily convert their socioeconomic advantages into reading achievement than do their English monolingual Hispanic peers - suggesting that for high socioeconomic status Hispanics there may be educational advantages to being bilingual (p. 35).

Several other studies argue for the positive effects of bilingualism as well. Fernandez and Nielsen (1986) found that among both White and Hispanic sophomores and seniors, bilingual students have significantly higher scores on measures of reading, mathematics, vocabulary and educational expectations (except for reading among White students) than English monolingual students. In a sample of more than 17,000 White and Hispanic, English monolingual and bilingual students, the achievement bonus associated with bilingualism for Hispanic students was roughly twice that for White students, despite the fact that the bilingual students were socioeconomically disadvantaged compared to monolinguals among Hispanic, but not among White students. While proficiency in both English and another language were positively related to achievement, frequent use of a non-English language was negatively associated with achievement, as was longer residence in the United States. These results suggested to Fernandez and Nielsen that, beyond the language handicap, there was an additional handicap associated with Hispanic minority group status that appeared to increase with time in the United States.

Nielsen and Lerner (1982) had previously concluded that when controlling for English proficiency and other factors, bilingualism consti- tutes an advantage to school achievement, in grades 10 and 12, because use of Spanish language at home had a positive relationship with educational achievement and grade point average. These studies should be interpreted with care, however, because the high drop out rates of Spanish speaking students (many of whom were not high achievers prior to leaving school) may account for the results.

The importance of language proficiency or reading skills in facili- tating mathematics achievement has also been studied. Creswell's 1982 study of Black, White and Mexican American adolescents investigated the relationship between mathematics problem solving achievement and a series of distinct variables. Reading scores were found to account for the highest percentage of the variance (49.5%), followed by computation scores (14.6%). Johnstone (1981) examined the interdependence of reading and mathematics achievement scores of Mexican American, Black and White students in grades 3-8. Vocabulary scores accounted for much of the relationship between ethnicity and achievement. But one should be careful in interpreting this literature, because in controlling for language behavior with reading scores, researchers may be "over controlling" on the outcome variable, and, thereby, throwing the baby -- achievement in mathematics -- out with the bath water.

In trying to understand Mexican American school achievement, it is helpful to look to explanations beyond their limited English to account for poor academic performance. Many studies target the inferior school settir.js that many Mexican American students attend as a primary cause of their underachievement and alienation. A large percentage of Mexican American students attend segregated schools where educational facilities may be understaffed and lack basic resources (Orfield, 1987). Furthermore, for many Mexican American children, school delay through repetition of grades has lowered the probability of their completing high school. Researchers suggest that such negative school experiences lead to expectations of school failure and make job opportunities more attractive (Fligstein & Fernandez, 1985).

Analyses of the National Longitudinal Survey data by Fligstein and Fernandez (1985) found that Mexican American students in private schools experience less school delay than those in public schools, and those in schools with high concentrations of Hispanic children tend to complete high school more frequently. Having an immigrant mother also seems to predict less grade retention, as mother's education and place of birth are strongly related to educational attainment for Mexican American students. Their research also indicated that students from large families and those of foreign birth were more likely to experience delay.

Fligstein and Fernandez (1985) cited similar deterrents to achievement for Puerto Rican students. For such students, the authors assert, language difficulties seem to be the beginning of learning problems that are never effectively remedied in the poorly equipped school systems many of them attend. Consequently, Puerto Rican students have problems of grade repetition, and also have the lowest high school completion rates of any of the Hispanic groups they studied.

Although the retention of Spanish has caused Cubans to be the least linguistically assimilated of any Hispanic-American group, they are more successful than Puerto Rican and Mexican American students in terms of academic achievement, as measured by standardized tests and levels of educational attainment (Fligstein & Fernandez, 1985). As reflected in the National Longitudinal Survey data, Cuban students have higher rates of school attendance and high school completion than do their Mexican American and Puerto Rican peers. Cuban parents have educational levels nearly equal to those of White parents, while all other Hispanic parents average less education. Cuban students also have the fewest numbers of siblings. Overall, Cuban students and those in the category of "Other Hispanics" appear demographically most similar to White students; while Mexican American and Puerto Rican students seem least similar (Fligstein & Fernandez, 1985).

When Fligstein and Fernandez (1985) analyzed data from aggregate groupings of Hispanic students, they found the results to be of limited use because the groups were too diverse. They reported that overall the differences in achievement between Mexican American and White students seemed to be the greatest, reflecting the disadvantages of foreign birth, use of Spanish, and lower educational attainment of Mexican American

parents. They indicated that other Hispanic subgroup analyses displayed similar patterns, but to a lesser extent. In general those Hispanics who finish high school are more likely than White students to attend college (with the exception of Puerto Rican high school graduates), suggesting that "those Hispanics who survive to finish high school are a highly select, motivated group" (p. 128).

O'Malley (1987) examined factors relating to academic growth in Hispanic students from the Sophomore to the Senior year. He found that all subgroups exhibited academic growth and that the differences among the groups were not practically significant. While the major contributor to the differences in academic growth between the two years was student performance at the Sophomore level, other variables examined by O'Malley included, academic credits, sex, educational aspirations, and home language background. According to this research, academic credits was an important factor relating to achievement growth, but overall, academic credits, SES and language background, independent of the other variables, explained only a small percent of grade 12 achievement.

Much of the research concerning explanatory variables relating to achievement of Hispanic youngsters discusses school related factors. The report of the Hispanic Policy Development Project (National Commission on Secondary Education for Hispanics, 1984) included the following information on school level variables and Hispanic students:

o Conditions vary greatly, but often the schools Hispanic children attend are overcrowded, poorly equipped, and have lower per-pupil budgets than other schools in their areas.

o More than two-thirds of all Hispanic youngsters attend schools where over 50% of the students are minorities.

o Many Hispanic students are not in strong academic programs. They are clustered in general or vocational educational programs. The courses they take are not consistent with the high aspirations they report when they enter school.

o The rate of Hispanic high school graduates who enrolled in college following graduation was 43% in 1982, compared to 46% in 1972. The White rate was 52% in 1982.

o 39% of Hispanic students in the 1980 sophomore class, including those whose dominant or only language was English, were enrolled in supplemental reading and writing classes. Thirty-five percent of the entire 1980 sophomore class were in remedial classes as well.

o Ratios of guidance counselors to students are as high as 1:700, even though the recommended ratio is 1:250, and some schools with predominantly Hispanic student bodies do not have counselors who speak Spanish.

Determinants of Asian Achievement

Many different groups make up the Asian American population. The Bureau of the Census (1981) includes more than 20 different Asian groups in its Asian American population estimates, with Chinese, Filipino, Japanese, Asian Indian, Korean, and Vietnamese groups making up the largest segment of the population. As with the Hispanic population, Asian Americans are a diverse population that differs in terms of such factors as ethnicity, degree of acculturation, regional loyalties, educational attainment, economic status, language and dialect, and immigration history (Gardner, Robey, & Smith, 1985; Hsai, 1988; US Commission on Civil Rights, 1980).

In contrast to the abundance of studies on Hispanic achievement is the scarcity of similar research directed at other ethnic minority groups in the United States. In the case of Asian American students, this relative neglect has often been justified by the claim that Asian American student achievement is generally equal to or above that of Anglo American students, specifically in the fields of mathematics and science. But Tsang and Wing (1985) suggest that this documented success of Asian American youngsters in mathematically oriented fields may well have resulted in their lower achievement in language-related areas being overlooked in both research and educational programs. Much of the research on achievement among Asian American students has focused on factors leading to their academic success rather than on those areas in which they fall below the norm (Lee, 1984; Schneider & Lee, 1986; Tsang, 1983).

Reports summarizing research on the Asian students in United States schools consistently criticize the work for the same shortcomings: an inadequate investigation of low achievement patterns; an insufficient attention to language factors related to achievement; a tendency to generalization across diverse subgroups (e.g., Chinese, Japanese, Koreans, Filipinos, Vietnamese, etc.) without differentiation and examination of unique cultural characteristics and patterns among the diverse Asian ethnic groups; and finally the lack of a complex explanatory model that encompasses a sufficient range of influential factors, from individual family and school characteristics to general cultural and sociopolitical variables (Schneider & Lee, 1986).

Most data available on general achievement scores have substantiated the disparity between Asian American students' mathematics and verbal abilities (Hsia, 1983; Matthews, 1979; Tsang & Wing, 1985). Studies reviewed by Hsia (1988) report that for Asians mathematics and verbal skills are more highly differentiated than for other ethnic groups, indicating that their higher mathematics ability is less related to high verbal ability than is the case for other groups.

Those studies that address the consistently lower reading and language achievement of the Asian American population have isolated some of the related factors, including recency of immigration; use of non-English language in the home; generational differences in how education is valued;

the choice of students whose first language is not English to concentrate in fields that are less dependent on English, such as mathematics and science; and finally the school's inattention to the Asian students' language deficits -- a substantial proportion of Asian limited English proficient students do not receive any special language assistance (Hsia, 1983; Matthews, 1979; Tsang, 1983; Tsang & Wing, 1985).

Existing studies reveal the following about the academic trends of Asian Americans:

o Mathematics achievement studies indicate that Asian Americans are generally achieving at the same level or higher than Whites--often even when the Asian students come from lower socioeconomic backgrounds (Caplan, Whitmore, Bui & Trautmann, 1986; Schneider & Lee, 1986) or from limited English backgrounds (Hsia, 1983)

o SAT scores and high school grades to be more predictive of college grade point average for White and Asian college students than for other minority students, with Asian students attaining grade point averages slightly higher than predicted (Hsia, 1983)

o There are interaction effects between bilingualism, socioeconomic status and school achievement, suggesting that socioeconomic status disadvantages and dominant ethnic mother tongue may be negatively associated with verbal achievement (Hsia, 1983). These interactions result in bimodal frequency distributions with Asian American students falling at both the upper and the lower ends of school achievement scales.

Cultural factors related to high achievement include high expectations of parents and teachers, and a home learning structure that is perceived to be supportive of academic success (Caplan et al., 1986). Asian American parents place a high value on education for self-improvement and family honor. These high expectations are transmitted to children and further to teachers. Teachers' high expectations are reinforced because they have positive attitudes towards Asian cultural characteristics, which in turn reciprocally reinforces children's expectations and performance (Lee, 1984).

Schneider and Lee (1986) claim their results "clearly link the academic success of East Asians to the values and expectations of their parents and to the home learning activities they participate in as a family" (p. 1). Lee (1984) notes that "East Asian parents tend to be more successful than Anglo parents in controlling their children's use of time because of the close family ties and strong authority of parents emphasized in East Asian culture" (p. 37). Furthermore, their emphasis on "quiet, industrious orderly behavior" (p. 37) is rewarded at school. Other studies note greater time spent on learning (Tsang & Wing, 1985) and cooperative study (Marlowe & Culler, 1987) as correlates of the high valuation of education which actually make the difference in achievement.

Another explanation for the superior achievement of Asian students relates to socioeconomic and sociopolitical factors. Tsang (1983) indicates

that there is considerable anecdotal evidence that Asians see an investment
in education as an effective strategy to offset discrimination and achieve
upward social mobility. Additional factors, beyond cultural and social
factors, that have been shown to be related to Asian educational achievement
in general are: generational status, length of United States residency,
particular ethnicity (ethnic subgroup), geographical location (city vs.
suburb), socioeconomic status, grade level and school (Lee, 1984; Tsang &
Wing, 1985).[2]

Determinants of Native American Achievement

Even more striking than the scarcity of research on Asian American
academic achievement is the near absence of comprehensive material on Native
American students. As with the other populations of interest in this
report, Native American students are a diverse group. As Bradley (1984)
observed: there is a "great variety in Indian life. Indian students can be
found in widely different settings: the Havasupai, in the Grand Canyon
basin; the Eskimo, in a tiny North Slope village of Alaska; and urban
Indians in Minneapolis apartments and Brooklyn tenements" (p. 97). Studies
are generally limited to a particular geographic area or to the academic
performance of small samples.

Witthuhn (1984) asserts that although achievement deficits and low
enrollment in mathematics classes of Native American students is well
documented, little research has been done on any large scale to either
investigate or ameliorate these problems. Evaluation studies on particular
bilingual education programs have documented the low reading levels of
limited English proficient Native American students (McLaughlin, et al.,
1983; Rosier & Holm, 1980).

According to a report by Witthuhn (1982):

three-quarters of all Indian children are at least one grade level
behind for their age; over one-half of Indian students drop out of
school; and, on the average, Indian students fall further and
further behind as they progress through school until finally they
are three-to-four years behind in school achievement by graduation
(p. 1).

Witthuhn's (1982) study of Native American enrollment and performance
in Minnesota school districts revealed that:

o In the Minneapolis public schools 50% of all Native American
students had very low test scores in reading and mathematics.

c Drop-out rates and bad attendance records are a problem among
the Native American student population in Minneapolis.

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[2] For comprehensive reviews of data and available research on Asian
achievement, see, Hsia (1983, 1988) and Tsang and Wing (1985).

o Only 5.9% of the Native American students had high reading test scores and fewer than 8.4% had high scores in mathematics.

o Only 62% of the Native American high school graduates as compared to 68% of the White graduates and 77% of the Black graduates, indicated that they planned to go on to college, trade or technical school.

Furthermore, Witthuhn found that school districts across Minnesota lacked consistency in identifying Native American students; exhibited higher dropout rates among their identified Native American students; and failed to enroll Indian students in mathematics courses as they progressed through school -- 100% enrollment in grades 7-9 to 33% for grades 10-12. Furthermore, even with these reduced enrollments, Indian females were proportionately underrepresented in mathematics classes relative to Indian males.

In addition to suggesting that the failure to take mathematics in high school on the part of Native American students might in large measure be due to the fact that such courses are not mandatory in the state, Witthuhn offered the following factors as possible explanations for the poor performance and underenrollment of Native American students in mathematics: Native American cultural values, particularly in terms of interaction with adults or in new situations, may cause Indian students to appear reluctant and withdrawn in school settings that require volunteering, asking, or answering questions; attitudes of parents, teachers and counselors may not encourage mathematics participation and achievement -- this is particularly true for girls, where the socialization process identifies mathematics as a male domain; the lack of role models who are successful in mathematics-related careers; the failure of mathematics instruction practices to recognize differences in learning styles; and Native American students' low self-esteem due to lack of previous successful educational experiences.

One primary determinant of low mathematics scores among Native American students appears to be avoidance of mathematics classes (Green, 1978). Leap (1982) studied mathematics avoidance among Native American elementary school students. Contrary to some of Witthuhn's findings, Leap found that degree of traditionality and sex of students were not as important predictors of student mathematics attainment or interest in mathematics as were such variables as perceived conflicts between school and home regarding the function and purpose of education, social organization of mathematics lessons, incompatibility of classroom management styles, student-preferred patterns of self-dependence, and familiarity with the tribe's traditional enumeration system. What emerged from the study was not a listing of factors relating to these students' mathematics avoidance, but rather a configuration of behavioral and attitudinal dimensions working together to encourage or inhibit mathematics learning. Cheek (1984) in a review of the literature relevant to strategies to increase Native Americans mathematics achievement, indicated that it was essential to raise expectations both of Native American students' parents and their teachers.

Witthuhn (1984) conducted a study of mathematics performance of Native American, Black, White, Asian and Hispanic students in kindergarten through grade 4. She examined differences in scores by racial/ethnic group, gender, socioeconomic status and type of mathematical skill assessed. At every grade level, Witthuhn found significant differences by group, and by socioeconomic status, but no significant differences by gender. These three variables account for an increasing proportion of the variability in mathematics performance as students progressed from kindergarten to fourth grade.

A General Accounting Office Report (1977) found that the proportion of Native American students with special needs in mathematics increases as the students progress through elementary school. Witthuhn (1984) found that these needs are not uniform throughout all parts of the mathematics curriculum. In particular, she noted that Native American and Black students demonstrate strength on the geometry segment of the mathematics curriculum, in contrast to the relative weakness of other ethnic groups in this area. Conversely, Native American and Black students seem to demonstrate special difficulties with numeration, an area that Witthuhn (1984) believes is more basic to other components of the mathematics curriculum and may account for decreased mathematics performance overall.

Summary of Determinants of Achievement Research

Comparisons of academic achievement of minority groups yield divergent patterns of strengths and weaknesses in reading, mathematics and related skills. While many of the factors associated with academic performance seem to be interrelated and equally influential across groups (e.g. attitude and motivation, class enrollment and attendance, study habits and quality of educational instruction), these factors have been found to be related to background characteristics including: family socioeconomic status and sociocultural mobility; gender; language background; nativity and duration of residency in the United States; availability of educational materials and activities in the home; parent influence; and minority-group status (Baratz-Snowden & Duran, 1987; Fernandez & Nielsen, 1986; Fligstein & Fernandez, 1985; Nielsen & Lerner, 1982; O'Malley, 1987; Ortiz, 1986; Rock, Hilton, Pollack, Ekstrom & Goertz, 1985).

The interaction patterns between and within ethnic groups are complex Conventional studies assessing one or several demographic variables, such as ethnicity, language background, socioeconomic status, or gender can arrive at only limited conclusions about the range of factors involved in shaping achievement (Fernandez & Nielsen, 1986). More recent studies have attempted to remedy this limitation by conducting investigations that attempt to deal with a broader range of variables, and to take into account their relative impacts and interactions (Schneider & Lee, 1986). While broader based studies avoid overgeneralized and over-simplified conclusions, their greater specificity, large numbers of variables, and increasingly complex explanatory frameworks make it more difficult to summarize findings without resorting to precise details of demographic, cultural, sociopolitical, educational and cognitive characteristics of the groups in question.

Comparative studies of determinants of behavior are currently limited by the quantity and quality of the information on the different ethnic groups. For instance, while much research has focused on the achievement of Hispanic students, little parallel work has been done on the academic achievement of Asian and Native American students. Furthermore, research has tended either to make broad generalizations (about all Hispanic, Asian or Native American students) without taking into account the variations between ethnic subgroups, or to focus specifically on one subgroup, such as Mexican American, Japanese, or Minnesota Native American students. Even studies that focus on "the same" ethnic group often examine different age groups, and separate populations, with distinct ethnic backgrounds. In addition, studies may use different definitions of ethnic group membership -- e.g. Census definition, exclusion on non-citizens, self-report, school records or other source of identification.

Briefly stated, although the literature is not always consistent, the research tends to indicate the following in regard to determinants of achievement in reading and mathematics for Hispanic, Asian and Native American students:

o Both socioeconomic status variables and language variables influence achievement for the groups studied but the findings on importance of these variables for achievement differ for different groups -- i.e., Puerto Rican students are negatively affected as compared to Cuban students in regard to frequency of use of Spanish in the home and achievement; the effect of bilingualism on achievement appears to differ both within ethnic group (it is positive for Hispanic children from middle and high socioeconomic groups, but negative for low socioeconomic Hispanic children) and between groups depending on the achievement being measured (bilingualism appears to be adversely associated with verbal achievement for Asian students).

o Socioeconomic and language variables generally show different distributions among the various Hispanic groups. Cuban students tend to come from homes with higher socioeconomic status than do their Puerto Rican and Mexican American peers. Cuban students tend to use the non-English language more frequently than do Mexican American and Puerto Rican students.

o Ethnicity is an important predictor of achievement. Asian students outperform other groups in mathematics. The research also suggests that Cuban students tend to out perform other Hispanic groups.

o Distinct cultural factors have been identified as being related to performance of various ethnic groups. Asian cultural values such as high value placed on education, and high expectations have been positively associated with achievement. Native American cultural patterns relating to learning styles and family belief

14

systems regarding the importance of education have been associated
with lower achievement in mathematics.

o School factors, particularly for Hispanics, have been found to
be associated with achievement. Although some research indicates
that attendance at schools with large proportions of minority
students negatively affects achievement for Hispanic students,
other data indicate that high concentrations of Hispanic students
is positively r̲ ₂ted to graduation rates for these children.

CHAPTER THREE

Description of the 1985-86 NAEP Special Assessment

In 1985-86 the National Assessment of Educational Progress (NAEP) conducted a special probe to assess the reading and mathematics skills of Asian, Native American and Hispanic students. In this chapter we describe the procedures used to select the sample, administer the assessment and score the data. Next we define the variables used in the analyses and finally we discuss the limitations of the study.

Procedures

Sample

In order to develop a nationally representative sample of children 9, 13 and 17 years old and/or in grades three, seven and eleven, NAEP employed a stratified three-stage sampling design. The first stage of sampling entailed defining primary sampling units (PSUs) -- typically counties, but sometimes aggregates of small counties, classifying them into strata defined by region and community type, and randomly selecting among them. For each age and grade level, the second stage entailed enumerating, stratifying and randomly selecting schools, both public and private, within each PSU chosen in the first stage. Selection at the first two stages was with probabilities proportional to size. The third stage involved randomly selecting students within a school for participation.[3]

The special NAEP sample used in this study consists of respondents from two sets of schools:

1. those schools selected in the second stage sampling of the regular NAEP and

2. schools, in the first stage NAEP PSUs but not selected for inclusion in the regular NAEP second stage sample.

Students in these sets of schools were selected for the special NAEP sample as follows: one half of the third-stage regular NAEP sample students identified by school personnel as Native American or Asian were administered

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[3]For a more complete description of NAEP sampling procedures see: Johnson, E., Kline, D., Norris, N. and Rogers, A., *National Assessment of Educational Progress 1985-86 Public Use Tapes Version 1, Users' Guide*, NAEP/ETS, Princeton, NJ, 1987.

the special NAEP booklets; school identified Hispanic and Asian students remaining in sufficient numbers after the regular assessment in a NAEP school were given the special NAEP booklet; and, eligible students in schools meeting enrollment specifications for Asian and Hispanic students that were situated in NAEP PSUs but not selected for NAEP were also administered the special study booklets.[4]

This design produced a small but representative sample of Native American students at all grade levels, a small sample of Asian children at the third grade and a large national sample of Asians at grades seven and eleven, as well as of Hispanics at all three grade levels who attended large schools and/or schools with a high concentration of Hispanics.

Students who took the National Assessment test had been judged by their schools to have sufficient knowledge of English and to be free of any behavioral or handicapping conditions that would interfere with their ability to participate in the assessment. School personnel were instructed to list all students who met the age/grade criteria to be included in NAEP. After a NAEP test administrator sampled the list of eligible students, school personnel were instructed to identify and line through "Non-English speaking students - Those who do not read or speak English and would be unable to overcome the language barrier in the test situation." Such a procedure eliminates from the sample those students that the school deems to be of "limited English proficiency." In the special study sample, 10.1% of the Hispanic students in grade 3, 6.7% in grade 7 and 3.2% in grade 11 were excluded from participating in the assessment because of limited English proficiency; 8.2% of the Asian students in grade 3, 11.9% in grade 7, and 14.1% in grade 11 were so excluded; and 8.7% of the Native American students in grade 3; 4.9% in grade 7 and 2.3% in grade 11 were excluded from the assessment due to limited English proficiency.

Table 1 presents the total number of completed cases of respondents who were administered the 1985-86 NAEP special supplement booklets. Four Hispanic groups are included—Mexican American, Puerto Rican, Cuban, and Other Hispanic (e.g. students from the Caribbean Basin and Central and South America) — as well as Asian and Native American groups. In the analyses, these cases were weighted according to the reciprocals of their respective selection rates, adjusted for non-response.

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[4] For a complete description of the sampling and weighting procedures for the special study, see Appendix A.

Table 1

NAEP 1985-86 SPECIAL STUDY ASSESSED SAMPLE

	Grade		
	3	7	11
Mexican American	1260	1651	1033
Puerto Rican	634	647	461
Cuban	298	355	573
Other Hispanic	730	696	567
Asian	272	617	772
Native American	135	167	125
TOTAL	3329	4133	3531

Content of the Assessment

The special assessment took approximately fifty minutes to administer. Each student received a booklet containing four blocks. Block one contained background items relating to the student's personal characteristics (e.g., ethnicity, parents' education); school experiences (e.g., attendance in preschool, enrollment in particular subjects), and school attitudes and behaviors (e.g., like reading, homework demands). This block was identical to the background items that children received who were a part of the regular NAEP administration.

Block two contained background and attitude items of particular interest to a study of Asian, Hispanic and Native American students — for example, questions concerning use of English and non-English language, self-assessments of competence in English and non-English language, presence of materials in the home in non-English language.

The third block contained reading passages developed by NAEP to conform with sets of objectives identified by nationally representative panels of reading specialists, educators, and concerned citizens.[5] The major categories of objectives for the development of reading items in the 1985-86 assessment were: comprehends what is read, extends comprehension, manages the reading experience and values reading. The students were asked to read prose passages drawn from a variety of genres and to answer questions about them. The questions about the passages included a range of multiple-choice items that required students to locate specific information, to make

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[5] For more details on the development of the items used in the assessment of reading and mathematics, see, Johnson, et al., 1987, Chapter 3.

inferences based on information in two or more parts of a passage, and to recognize the main idea.

The final block contained mathematics items that were developed by NAEP to meet objectives and specifications of a national panel of mathematics specialists and educators. The items for the 1985-86 assessment were organized into seven content areas: mathematical methods, discrete mathematics, data organization and interpretation, measurement, geometry, relations, functions and algebraic expressions, and numbers and operations.[6] Both the reading and mathematics sections were intact blocks as administered to nationally representative groups in the NAEP main assessment. This feature of the special assessment design was included to allow for comparison of achievement results for the special assessment groups with those of their grade-level peers.

Data Collection/Scoring

A well-trained, professional data collection staff under the direction of WESTAT, Inc. administered both the main NAEP and this special assessment. Students were administered the special study booklets in groups of 20 to 30, depending on the age of students receiving the assessment. The booklets were designed so that responses were "readable" by a computerized scanning device. Open-ended items were scored by professionally trained readers. After scoring, data were weighted in accordance with the population estimates and adjusted for nonresponse (i.e., students absent from testing and make-up sessions).

Reading proficiency estimates were computed using item response theory (IRT) technology. IRT defines the probability of answering an item correctly as a mathematical function of proficiency level or skill. Using IRT analysis enables us to compare the performance level of the NAEP special study sample with the general NAEP sample for 1985-86.

NAEP estimates of means and distributions describing national and group reading proficiency were imputed as expected values of the scores that would have been obtained had individual proficiencies been observed, given the data that were in fact observed -- that is, responses to a block of reading exercises and background items.[7] Because students responded to more mathematics items than reading items, the mathematics scores were

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[6] In the third grade the reading block was identical to block 9R3 in the regular NAEP assessment; in the seventh and eleventh grades the reading block was identical to block 13R1 in the regular assessment. For mathematics the matching blocks with the regular NAEP assessment were: in grade three, block 9M4; in grade seven, block 13M7; and, in grade 11, block 17M8. The test items used in this study are included in Appendix B.

[7] For theoretical justification of the procedures employed, see the ETS Research Bulletin, Mislevy, R. (1985). For computational details in the application, see Beaton, A., NAEP 1983-84: A Technical Report, 1986.

sufficiently reliable so as not to require imputations. Thus, mathematics scores were computed as number of correct answers.

Estimating Variability in Proficiency Measures

The standard error, computed using a jackknife replication procedure, provides an estimate of sampling reliability for NAEP proficiency measures. It is composed of sampling error and other random error associated with the assessment of a specific item or set of items. Random error includes all possible nonsystematic error associated with administering specific items to specific students in specific situations (Beaton, 1986).

Student Variables Used in this Study

The student variables used in this study were those that previous research had indicated to be related to achievement. The variables were divided into the following categories: demographic characteristics; language status; home support variables; educational experiences and related behaviors; and school related attitudes.[8]

Demographic Characteristics

The demographic characteristics used in this study are racial/ethnic identification; gender; place of birth; length of residency in the United States; parent education; mother (or stepmother) living in home; and living in a single parent family.

Racial/Ethnic Identification

This report focuses on six student groups: Mexican American, Puerto Rican, Cuban, Other Hispanic, Asian and Native American. Students were so identified by self-report in answer to the following questions:

Which best describes you?

o White
o Black
o Hispanic (Mexican, Mexican American, Puerto Rican, Cuban, or other Spanish or Hispanic background)
o Asian or Pacific Islander
o American Indian or Alaskan Native
o Other (What?)

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[8] Appendix C contains the survey questions used in this report. The survey instrument included items previously used in NAEP and other large scale studies related to language minority children, e.g. the special High School and Beyond Study done by Nielson, Fernandes and Veltman, as well as items developed specifically for this study.

If you are Hispanic, what is your Hispanic background?

o I am not Hispanic.
o Mexican, Mexican American, or Chicano
o Puerto Rican
o Cuban
o Other Spanish or Hispanic background

Gender

Test administrators determined the gender of students from school records, prior to the administration of the assessment.

Place of Birth

Place of birth was determined by student responses to the following question:

Where were you born?

o In the United States
o In Puerto Rico
o Somewhere else [Where]_____
o I don't know

Length of Residency in the United States

Students responded to a question concerning the number of years they had lived in the United States. Depending on the age of the child being assessed, possible responses extended from less than one year to more than ten years.

Parent Education

Students were asked in two separate questions to indicate the amount of education that their mother and their father had received. The response choices to the question "How far in school did your mother/father go?" included: did not finish high school; graduated from high school; had some education after high school; graduated from college; and, I don't know.

The information was combined into one parental education measure in the following manner:

If a student indicated the extent of education for only one parent, that level was included in the data. If a student indicated the extent of education for both parents, the higher of the two levels was included in the data. If a student indicated that he or she did not know the level of education for both parents or indicated that he or she did not know the level of education for one parent and did not respond for the other, the

parental education level was classified as unknown. If the student did not respond for both parents, the student was recorded as having provided no response (Johnson, et al., 1987, p. 74).

Mother or Stepmother Living in the Home

Students were asked to indicate if they lived with their mother or stepmother.

Single Parent Household

The single parent family variable was developed by merging the student's responses to the following questions: "Does either your mother or your stepmother live at home with you?" and "Does either your father or your stepfather live at home with you?"

Language Status

In a previous NAEP study of Asian and Hispanic children (Baratz-Snowden and Duran, 1987), language minority status was determined on the basis of student responses to a single item: "How often do the people in your home speak a language other than English?" This classification was done because there were no other indicators of non-English exposure of the child in the data base. Such a definition of language status is insufficient in that it includes students with diverse language skills and exposure to a non-English language, encompassing students who may be bilingual, those who may be monolingual English speakers, and those whose knowledge of English may be quite limited. Furthermore, it is not always reliable. For example, students may respond "never" to the question, "How often do the people in your house speak a language other than English?", but on a subsequent question related to language use may indicate that their mother uses a non-English language when speaking to them.

The survey instrument in the 1985-86 NAEP special study permitted us to be more precise in our specification of language status. Using the responses to the language background questions, we created several language composite variables. These were developed in the following manner. First we ran a correlation matrix to identify related variables; next we determined the underlying constructs in those related variables. Then, in order to deal with differing item response scales and response patterns, we constructed factors by standardizing (using Z transformations) the responses to items in each composite variable. THe composite variable scores were obtained by summing Z scores across contributing items.

22

Six language composite variables were developed:[9]

o minority language use in the home

o minority language use outside the home

o English language competence

o other language competence

o exposure to minority language in electronic media, and

o exposure to minority language through print media.

Minority Language Use in the Home

This composite variable included responses to questions about how often a language other than English was spoken in the home by the student and others. In particular, we probed the language use of the child when speaking to his parents and relatives, the language his parents and other relatives used when speaking to each other, and the language his parents and relatives used when speaking to him. Eight questions contributed to the composite in grades 7 and 11, while six questions were included in grade 3.

Minority Language Use Outside the Home

This composite variable was similar to the language use inside the home, but instead addressed the language that students in grades 7 and 11 were most likely to use with students in class, with students in the halls, with their teacher, and in stores. Only the last three questions were asked in grade 3.

English Language Competence

This composite variable for students in grades 7 and eleven was developed from their self-assessment (on a four point scale ranging from "very well" to "not at all") of their ability to understand, speak, read and write English.

Other Language Competence

This composite variable, at the seventh and eleventh grade, was similar to the English competence variable, but reflected self-assessed competence in understanding, speaking, reading and writing the non-English language.

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[9] Appendix C presents the questions that make up each of the composite variables used in this study as well as the internal consistency reliability coefficients (split halves) for the composite variable scores.

Exposure to Minority Language in Electronic·Media

This composite variable contained three items relating to how often the student listened to radio programs, to TV programs, and to records or tapes in a language other than English.

Exposure to Minority Language in Print Media

This composite variable for seventh and eleventh graders was composed of three items relating to whether or not there were newspapers, magazines and books in a language other than English in the home.

Home Educational Support Variables

The variables here include the presence of literacy related items in the home, and for seventh and eleventh graders, two parent education involvement variables -- asking the student about schoolwork and educational aspirations for the child.

Literacy Related Items in the Home

Five items make up the home literacy support composite variable. They are the child's "yes" or "no" response to whether or not: 1. the family gets a newspaper regularly; 2. there is a dictionary in the house; 3. there is an encyclopedia in the house; 4. there are more than 25 books in the house; and 5. whether the family gets any magazines regularly.

Ask About School Work

Students responded to a single question about how often someone in their family inquired about their school work. Responses were on a four point scale ranging from "Daily" to "Never."

Parental Aspirations

This was a two item variable relating to parental desires for the child in terms of high school graduation and subsequent attendance in college. The same procedures were employed in creating this composite variable as were used in the construction of the language composite variables.

Educational Experiences and School Related Behaviors

The variables included under educational experiences relate to whether or not the students went to preschool; what kind of coursework they have taken in mathematics, science and computer science; the nature of their high school program; and the kind of English class they are currently taking. In addition to these curriculum related items, we also asked students about their experiences with grade retention, the kinds of grades they were receiving, and how much homework they did.

Preschool Experience

Students were asked if they had attended preschool.

Coursework

Seventh graders were asked about the type of math course they were taking (no math, regular, pre-algebra, algebra or other). Eleventh graders were asked about the mathematics courses (general, business or consumer mathematics through to calculus) and the science courses (general science, biology, chemistry, physics) they had taken. They were also asked what kind of English course they were enrolled in — advanced placement or honors, college preparatory, general or remedial. Finally, students indicated if they were currently enrolled in a computer course, a United States history course, a math course or a science course.

Type of High School Program

High school students were asked which best described their curriculum -- general; academic or college preparatory; or vocational or technical.

Grade Retention

Students were asked if they had ever been left back in school, and if so, to identify the grade(s) they repeated.

Grades

Students were asked about their report cards, and the grades that they had received. Responses ranged from "mostly A" to "mostly below D."

Homework

Third graders were asked how much time they usually spent each day on homework. Possible responses included: none, 15 minutes, half an hour, one hour, and more than one hour. Seventh and eleventh graders were asked the same question with the following possible responses: I don't usually have homework assigned; I have homework but I don't usually do it; half an hour or less, one hour, two hours and more than two hours.

School Related Attitudes

Three attitude composite variables are included here — attitudes toward school; attitudes toward reading; and, feelings concerning locus of control related to educational achievement. The factors were developed similarly to those described above.[10]

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[10] See Appendix C for the items used in each factor and the Internal Consistency Reliability Coefficients of factor scores.

Attitude toward School

In grade 3 no composite variable was developed, but children responded "yes" or "no" to a question concerning whether they liked to go to school. In grades 7 and 11, however, a composite variable was developed based on five items. Two items related to attitudes towards school and to behaviors expected in school, that is, whether the student liked to go to school, and whether homework was completed on time. The other three variables relate to beliefs and attitudes concerning success in school: doing well on a test is related to studying hard or luck; my teacher likes the way I read; and teachers control your life in school.

Attitudes toward Reading

Again, in the third grade there was no composite variable, but children responded "yes" or "no" to a question concerning whether they liked to read. In seventh and eleventh grade, the reading composite variable included responses to the following items: I read on my own outside of school; I like to read; I think reading is a waste of time; and, my teacher likes the way I read.

Locus of Control Related to Educational Achievement

For seventh and eleventh graders three items were used in the development of this composite variable. They consisted of one item relating to whether doing well in school is a matter of luck or hard work; another concerning whether you could do something about achievement, if you weren't born smart; and an item concerning whether teachers controlled students' lives by being hard or easy on them.

School Variables Used in this Study

In addition to the student background data, NAEP collected demographic and education-related information from school personnel. The school principal filled out a questionnaire about such factors as: whether the school was public or private; the racial/ethnic composition of the student body; the numbers of students who received free lunch; and the availability of ESL and bilingual personnel.

Governance

Schools were divided into four categories: public, Catholic, private but not Catholic, and Bureau of Indian Affairs schools.

Minority Enrollment

In the descriptive analysis school enrollment data were divided into the following categories concerning minority status: those with 20% or less minority enrollment; those with 21% to 79% minority enrollment; and those with 80% or more minority enrollment. In the relational analysis, schools

26

were classified as majority-minority if their student minority enrollments exceeded 50%.

Poverty Level

The poverty level of the school was determined by the proportion of students receiving free lunch. Based on the distribution, schools were divided into groups in the following manner: less than 20% free lunch, between 20 and 89% free lunch, and 90% or more free lunch.

ESL and Bilingual School Personnel

School principals indicated the number of ESL or bilingual specialists working in the school.

Limitations of the Data

There are a number of significant limitations of the data used in these analyses that must be understood. First, the data are self-reported and, especially for third graders, we are not overly confident about the accuracy of the responses. Because we interviewed a small set of Asian and Hispanic parents and asked some questions similar to those posed to their children, we were able to check the agreement of third, seventh and eleventh grade responses to questions regarding parent education, and language use.[11]

A second limitation is the absence of good data regarding the students' parental education level. More than half (55.8%) of the third graders and more than one quarter (27.5%) of the seventh graders did not answer the question. Furthermore, the agreement between parents and students who did answer the education question was not good for third graders and only fair for other students.[12]

A third limitation concerns the absence of direct measures of the students' knowledge of the non-English language. We have no measures of knowledge of the non-English language for third graders. For seventh and eleventh graders, we only have self-reports of competence to read, write, speak or comprehend the non-English language. Therefore this report does

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[11]Findings from that study indicate a reasonable agreement between students and parents on language use -- frequency of use with various family members had percentage agreements in the high 60's and the question about whether a non-English language was used in the home had agreement rates of 94% for third graders, and 95% for seventh graders and eleventh graders.

[12] At the third grade only 41% exactly matched on mothers' education and 40% on fathers'; at grade seven there was a 59% match for mothers' education and 56% for fathers'; at grade eleven the match was 64% and 63% respectively. Children tended to overstate their parents' education; the problem of overestimation being most severe at grade 3.

not address issues relating to the relationship between native language and English proficiency of students whose first language is not English.

A fourth limitation is that reading scores can only be examined at the seventh grade. The reading block in grade 11 was too easy for this age group and produced a ceiling effect.[13] The grade three reading block had the opposite problem, a floor effect.[14] Due to these problems, this report only analyzes the reading results obtained from seventh graders.

A fifth limitation concerns the fact that the mathematics test was administered only in English. It may be that this procedure underestimates mathematics performance for some students who are not native speakers of English. However, when we examined the relationship between mathematics performance of White native English speakers in the regular NAEP sample and each of the ethnic groups in the special NAEP sample using the Differential Item Functioning (DIF) procedure,[15] only a very few of the mathematics items showed statistically significant differences, and those differences were small.[16]

A final but nonetheless critical limitation relates to the small number of Native American students in our NAEP special study analyses. The data concerning this group should be interpreted with extreme caution because the standard errors are poorly estimated. For this reason, we include these data in the analyses, but do not discuss the results in the text.

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[13] Eight of the 11 multiple-choice items in the block were answered correctly by 84% of more of the students. The average raw score for the block was 8.9. Without harder items, there is no way to distinguish among the 72% of the students with perfect or nearly perfect scores. Performance on this block in the regular NAEP, where it was also used, was consistent with our results.

[14] Six of the nine items were answered correctly by between 15% and 32% of the students: not far different from the 20% who could be expected to get a 5-choice item correct by random guessing. These items were too difficult for these students. The percent correct for the other three items ranged from 40% to 52%. If students had answered all nine items entirely by random guessing an average score of 1.8 would be expected. The average score of 3.1 actually observed contains only slightly more information. Nearly half the students (49%) received a score of 2 or less.

[15] For more information on this procedure, see: Holland, P. & Thayer, D. (1986). _Differential Item Performance and the Mantel-Haenzsel Procedure_. Paper presented at AERA, San Francisco.

[16] For more information on these analyses see: Rock, Donald & Chan, Kaling (1988) "A Differential Item Functioning analysis of math performance of Hispanic, Asian and White NAEP Respondents." National Assessment of Educational Progress.

CHAPTER FOUR

Findings from the Descriptive Analysis

This chapter presents information about the students in the NAEP special study and the schools they attend. Part one addresses the question, "What are the similarities and differences in demographic characteristics of Hispanic and Asian students?" Part two looks more closely at the patterns of language use, competence and exposure of the various groups. Part three addresses the question, "What are the educational experiences and school related attitudes of these children?" and "How do those experiences and attitudes differ among the various ethnic groups of interest here?" Part four looks at characteristics of the schools that these students attend and, finally, part five briefly describes their achievement as reflected in their grades and their performance on the NAEP mathematics and reading items.

In describing results, we note statistically significant (p < .05) differences in data that compare weighted percentages. For data concerning mean differences we require that the differences be both statistically significant and yield an "effect size" equal to or greater than 20% of a pooled standard deviation. This latter criterion insures that we do not interpret as important relationships that may achieve statistical significance based on large sample size, but are not practically different. Cohen (1977), in a survey of the social science literature suggests that an effect size of 20% of a pooled standard deviation is a small but practically important effect.

Who Are the Children?

This section of the report presents the findings concerning the demographic characteristics of the students. The variables that we examined were: gender, parents' education, place of birth, and whether students were living with their mother (or stepmother).

Gender

Table 2 presents the data for each ethnic group at each grade. For all of the groups studied, both within and across grades, there were no significant differences in the proportions of males and females.

Place of Birth

Third graders were more likely than their older peers to respond "I don't know" to the question "Where were you born?" (Table 3). Mexican

Table 2

GENDER

Ethnic Group		Male	Female
	N	%* (SE)**	% (SE)
Grade 3			
Mexican American	1260	51.6 (1.4)	48.4 (1.4)
Puerto Rican	634	47.5 (2.6)	52.5 (2.6)
Cuban	298	45.8 (3.1)	54.2 (3.1)
Other Hispanic	733	49.1 (2.7)	50.9 (2.7)
Asian	272	50.8 (5.2)	49.2 (5.2)
Native American[1]	135	53.0 (7.2)	47.0 (7.2)
TOTAL[2]	3518	51.1 (1.2)	48.9 (1.2)
Grade 7			
Mexican American	1651	49.7 (2.0)	50.3 (2.0)
Puerto Rican	647	48.7 (3.6)	51.3 (3.6)
Cuban	355	44.0 (7.0)	56.0 (7.0)
Other Hispanic	696	44.0 (3.2)	56.0 (3.2)
Asian	617	53.0 (3.9)	47.0 (3.9)
Native American[1]	167	57.7 (5.2)	42.3 (5.2)
TOTAL	4305	50.2 (1.3)	49.8 (1.3)
Grade 11			
Mexican American	1033	48.8 (1.8)	51.2 (1.8)
Puerto Rican	461	47.5 (2.9)	52.5 (2.9)
Cuban	573	52.0 (4.7)	48.0 (4.7)
Other Hispanic	567	53.5 (4.5)	46.5 (4.5)
Asian	772	48.6 (3.2)	51.4 (3.2)
Native American[1]	125	53.5 (4.5)	46.5 (4.5)
TOTAL	3582	49.8 (1.1)	50.2 (1.1)

 *Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who
identified themselves either as Asian, Native American or
Hispanic. It includes Hispanic informants who did not identify
their Hispanic subgroup.

Tablé 3

PLACE OF BIRTH

Ethnic Group	N	In U.S. % *(SE)**	Puerto Rico % (SE)	Other % (SE)	I Don't Know % (SE)
Grade 3					
Mexican American	1238	74.8 (2.3)	0.5 (0.2)	13.8 (1.5)	11.0 (1.5)
Puerto Rican	620	58.4 (3.4)	26.4 (2.8)	7.6 (2.2)	7.7 (1.9)
Cuban	286	54.3 (3.9)	2.3 (1.5)	36.2 (4.9)	7.1 (2.7)
Other Hispanic	710	65.4 (5.0)	1.4 (1.1)	23.7 (4.7)	9.4 (2.1)
Asian	261	51.6 (6.6)	0.0 (0.0)	42.3 (6.1)	6.2 (1.6)
Native American[1]	134	65.0 (11.0)	1.1 (1.0)	13.8 (2.4)	20.1 (11.0)
TOTAL[2]	3424	66.9 (2.6)	3.1 (0.7)	18.9 (1.8)	11.0 (1.3)
Grade 7					
Mexican American	1616	84.4 (2.2)	0.7 (0.5)	13.2 (1.9)	1.6 (0.5)
Puerto Rican	639	71.0 (3.0)	22.6 (3.0)	5.7 (2.4)	0.7 (0.5)
Cuban	338	63.1 (7.5)	0.6 (0.1)	35.4 (7.8)	0.8 (0.5)
Other Hispanic	649	69.2 (4.5)	0.5 (0.3)	28.3 (4.3)	2.0 (1.4)
Asian	566	41.1 (3.7)	0.0 (0.0)	58.3 (3.7)	0.6 (0.4)
Native American[1]	165	89.5 (4.4)	0.0 (0.0)	7.7 (6.4)	2.7 (2.7)
TOTAL	4138	73.7 (2.3)	2.2 (0.5)	22.7 (2.2)	1.4 (0.2)
Grade 1					
Mexican American	1006	81.6 (3.0)	0.0 (0.0)	18.2 (3.1)	0.2 (0.2)
Puerto Rican	460	80.6 (2.1)	16.6 (2.0)	2.7 (1.0)	0.1 (0.1)
Cuban	570	58.6 (7.6)	1.7 (0.8)	38.5 (7.8)	1.3 (1.4)
Other Hispanic	551	58.2 (9.0)	1.0 (1.0)	39.8 (8.9)	1.1 (0.2)
Asian	734	29.9 (3.1)	0.1 (0.1)	69.9 (3.1)	0.1 (0.1)
Native American[1]	122	93.0 (1.9)	2.8 (2.9)	4.2 (1.6)	0.0 (0.0)
TOTAL	3489	62.7 (3.2)	2.3 (0.5)	34.7 (3.1)	0.3 (0.1)

*Percentages are weighted to yield population estimates

**Standard errors in parentheses

[1] Interpret with caution, standard errors are poorly estimated.

2 Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

American pupils in grade 3 were more likely·to report being born in the United States than were Puerto Rican, Cuban, or Asian students.

At grade 7, Asian students were less likely to report being born in America than were other groups. As in grade 3, Mexican American students were more likely to be born here than was the case for the other Hispanic subgroups and Asian students.

The proportion of Asian eleventh graders who reported being born in the United States is smaller than the corresponding proportions of Asian students in grades 3 and 7. Similarly, a small proportion of Puerto Rican eleventh graders reported being born in Puerto Rico than was the case in grade 3. At the eleventh grade, Asians were less likely to be born in the United States than were their classmates. Puerto Rican and Mexican American students were more likely than their Cuban and Other Hispanic peers to report being born in the United States.

Length of United States Residency

Table 4 presents data concerning the number of years students report they have resided in the United States. The overwhelming majority of third graders reported living in this county five years or more. At grade 3, Puerto Rican students were more likely to have lived less than one year in the United States than were other groups and also less likely to have resided here for five or more years than were Asian or Mexican American students.

As with third graders, the vast majority of seventh graders report having lived in this country five or more years. At grade 7, only Asian pupils were significantly more likely than Mexican American students to report having resided in the United States for less than one year. Asian students were also less likely to indicate they had resided here 10 or more years with the exception of Cubans, than was the case with other groups. Mexican American students were significantly more likely than Cuban, Other H spanic, and Asian students to have been in this country 10 years or more.

The data at grade 11 present a similar picture to that of the seventh graders. Depending on the group reporting, between 67.7% and 90% of the students indicate they have lived in the United States for five or more years. Asian eleventh graders are more likely to report less than one year's residence than other groups and also along with Cuban students less likely than Mexican American students and Puerto Rican students to have lived here 10 years or more.

There is a good deal of variability in the·results reported for the three middle residency categories. However, in both grades 7 and 11, Asian students were more likely to report each of these categories than were either their Puerto Rican or Mexican American peers.

32

Table 4

LENGTH OF U.S. RESIDENCY

Ethnic Group	N	<1 yr. %*(SE)**	1 to <3 %(SE)	3 to <5 %(SE)	5 or + (% SE)
Grade 3					
Mexican American	1253	2.5(0.6)	4.1(0.7)	6.5(0.9)	86.9(1.2)
Puerto Rican	613	11.5(2.3)	6.0(1.1)	9.8(1.3)	72.7(2.2)
Cuban	294	2.4(0.7)	3.4(0.8)	14.4(4.1)	79.8(4.3)
Other Hispanic	719	4.2(1.4)	7.4(2.1)	8.7(1.9)	77.7(4.3)
Asian	271	3.0(1.7)	5.5(1.8)	8.4(2.1)	83.1(3.2)
Native American[1]	133	2.9(1.2)	5.0(2.8)	6.2(3.2)	85.9(5.8)
TOTAL[2]	3462	3.7(0.6)	5.0(0.8)	7.4(0.7)	83.9(1.~)

Ethnic Group	N	<1 yr. %*(SE)**	1 to <3 %(SE)	3 to <5 %(SE)	5 to 10 (% SE)	10 + Yrs. (% SE)
Grade 7						
Mexican American	1640	0.2(0.1)	1.6(0.5)	2.4(0.6)	8.5(1.1)	87.3(1.7)
Puerto Rican	641	1.5(0.8)	0.9(0.5)	4.6(1.2)	13.6(4.2)	79.4(5.9)
Cuban	351	1.7(1.0)	5.4(1.2)	2.5(1.7)	27.6(7.0)	62.8(6.2)
Other Hispanic	691	1.7(0.6)	6.8(1.9)	9.4(2.3)	13.9(2.5)	68.2(5.0)
Asian	614	2.1(0.7)	6.4(1.2)	9.7(1.7)	27.7(3.0)	54.1(3.8)
Native American[1]	156	0.4(0.6)	0.0(0.1)	0.6(0.6)	2.0(2.3)	97.0(3.0)
TOTAL	4272	0.9(0.2)	3.0(0.5)	4.5(0.3)	13.1(1.5)	78.4(2.4)
Grade 11						
Mexican American	1025	0.2(0.1)	2.3(0.7)	2.9(0.9)	4.6(0.9)	90.0(2.0)
Puerto Rican	461	1.1(0.7)	1.8(0.9)	2.5(0.8)	7.5(1.8)	87.2(2.1)
Cuban	572	0.9(0.9)	4.9(0.9)	6.9(2.1)	19.6(6.3)	67.7(6.1)
Other Hispanic	567	1.6(0.8)	6.1(2.2)	7.6(2.7)	12.1(3.2)	72.6(7.1)
Asian	768	4.5(1.1)	8.3(1.3)	10.0(2.2)	19.1(1.9)	58.1(4.1)
Native American[1]	123	0.0(0.0)	0.0(0.0)	0.0(0.0)	0.7(0.7)	99.3(0.7)
TOTAL	3543	1.9(0.4)	4.6(0.5)	5.6(0.9)	10.7(1.2)	77.2(2.2)

*Percentages are weighted to yield population estimates

**Standard errors in parentheses

[1] Interpret with caution, standard errors are poorly estimated.

2 Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Parent Education

Table 5 presents the data on parental education. These data must be interpreted with care, given the large proportions of missing data, particularly at grade three, and the fact that the agreement between parent and child on amount of parental education was only 41% at grade three, and no higher than 64% at grade 11. Furthermore, the data, especially of third graders, seem unbelievable -- i.e. at least 40% of the students reported that their parents were college graduates.[17]

The data indicate that at seventh and eleventh grade, Asian parents were less likely to have graduated from high school than was the case for other groups with the exception of Cuban parents of students in grade 11. Asian parents are also more likely to have graduated from college than were the parents of other groups of students. At grade 7 Mexican American and Puerto Rican parents were less likely than Cuban and Other Hispanic parents to have graduated from college. At grade 11 Mexican American students report that their parents were less likely to be college graduates than all other groups save Puerto Rican parents. With the exception of Mexican American students, Puerto Rican students were more likely than any of the other groups to report that their parents had less than a high school education. Mexican American students were more likely than Other Hispanics, Cuban, and Asian students to report that their parents had not graduated from high school.

Mother (or Stepmother) Living in Home

The great majority of students report living in homes with their mother or stepmother. Table 6 indicates that Mexican American, Puerto Rican and Asian students at the seventh grade and all but other Hispanic students at the eleventh grade are more likely to report a mother living in their home than are their ethnic peers in the third grade. At grade eleven, Cuban students were more likely than Mexican American, Other Hispanic, and Asian students to report living with their mother or stepmother.

Type of Household

The data in Table 7 indicate that Mexican American and Cuban students in seventh and eleventh grades are more likely to report living with both parents than are their ethnic peers in grade 3.

In grade three Puerto Rican and Cuban children are more likely than Other Hispanic; and Asian children to report living with only one parent. In grade 7, Puerto Ricans were more likely than Mexican Americans, Cubans and Asians to report living in one parent families. Other Hispanic students were more likely to report being in one parent families than Mexican American and Asian students. In grade 11, Puerto Rican students were most

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[17] For more information on parent education data and agreement between parent and child see: Baratz-Snowden, Joan, Pollack, Judith and Rock, Donald, *Quality of responses of selected items on NAEP special study student survey*. National Assessment of Educational Progress, 1988.

Table 5

PARENTS' EDUCATION

Ethnic Group		Not H.S.	Grad.H.S.	Post H.S.	Grad.Coll.
	N	%* (SE)**	% (SE)	% (SE)	% (SE)
Grade 3					
Mexican American	593	16.1 (1.9)	30.9 (2.2)	10.0 (1.5)	43.0 (2.6)
Puerto Rican	290	17.4 (2.7)	28.7 (4.0)	11.2 (3.1)	42.7 (4.5)
Cuban	110	15.7 (8.1)	35.8 (5.2)	5.2 (1.9)	43.4 (7.2)
Other Hispanic	302	13.3 (2.2)	26.0 (4.2)	9.8 (2.7)	50.9 (6.1)
Asian	93	2.9 (1.4)	13.5 (6.2)	6.2 (3.3)	77.4 (7.0)
Native American[1]	69	11.4 (5.3)	19.6 (4.2)	13.7 (2.6)	55.2 (2.9)
TOTAL[2]	1530	13.8 (1.2)	27.3 (2.2)	9.5 (0.9)	49.4 (2.0)
Grade 7					
Mexican American	1238	27.2 (2.8)	39.8 (2.2)	15 5 (1.5)	17.5 (1.8)
Puerto Rican	450	30.1 (7.7)	30.0 (5.3)	18.1 (2.3)	21.9 (3.1)
Cuban	258	20.8 (4.6)	22.3 (3.5)	15.2 (2.2)	41.6 (8.4)
Other Hispanic	514	17.8 (3.5)	26.2 (4.3)	16.5 (1.8)	39.5 (4.2)
Asian	406	6.7 (1.9)	12.3 (2.2)	12.8 (3.0)	68.2 (4.2)
Native American[1]	132	16.9 (8.6)	30.0 (7.3)	19.5 (7.7)	33.6 (7.3)
TOTAL	3103	21.4 (2.0)	31.4 (1.8)	15.5 (1.0)	31.7 (2.3)
Grade 11					
Mexican American	929	34.4 (3.8)	30.9 (2.4)	23.2 (1.8)	11.5 (1.4)
Puerto Rican	405	41.2 (6.3)	30.1 (7.0)	12.8 (2.5)	15.9 (3.1)
Cuban	530	13.3 (3.9)	22.9 (2.8)	20.7 (2.7)	43.0 (6.3)
Other Hispanic	510	16.6 (2.4)	31.8 (4.5)	19.9 (2.7)	31.6 (4.2)
Asian	692	5.4 (1.3)	13.8 (1.4)	15.5 (2.5)	65.3 (4.4)
Native American[1]	119	24.0 (4.0)	27.8 (3.5)	26.6 (3.9)	21.7 (5.8)
TOTAL	3224	22.4 (1.5)	25.1 (1.6)	19.2 (1.5)	33.2 (2.1)

*Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table 6

MOTHER OR STEPMOTHER LIVING AT HOME

Ethnic Group	N	%*(SE)**
Grade 3		
Mexican Americans	1246	83.5(1.2)
Puerto Ricans	615	82.5(3.0)
Cubans	293	83.0(5.7)
Other Hispanics	719	86.4(2.1)
Asians	266	82.6(3.4)
Native Americans[1]	134	75.0(4.6)
TOTAL[2]	3453	82.7(1.4)
Grade 7		
Mexican Americans	1319	92.7(1.0)
Puerto Ricans	528	94.4(2.0)
Cubans	296	93.5(2.2)
Other Hispanics	564	89.7(3.4)
Asians	539	92.4(2.6)
Native Americans[1]	130	86.3(5.8)
TOTAL	3503	92.0(1.1)
Grade 11		
Mexican Americans	823	92.0(1.5)
Puerto Ricans	364	92.8(3.2)
Cubans	492	97.7(1.1)
Other Hispanics	445	89.7(3.2)
Asians	638	91.7(1.5)
Native Americans[1]	95	94.6(2.2)
TOTAL	2894	92.0(0.8)

* Percentages are weighted to yield population estimates.
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
2 Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did nct identify their Hispanic subgroup.

Table 7

TYPE OF HOUSEHOLD

Ethnic Group	N	Both %* (SE)**	One Parent % (SE)	Neither % (SE)
Grade 3				
Mexican American	1240	69.9 (1.3)	16.9 (1.0)	13.3 (1.2)
Puerto Rican	609	58.9 (2.8)	27.4 (2.7)	13.7 (2.9)
Cuban	288	59.1 (4.0)	26.7 (5.0)	14.2 (5.3)
Other Hispanic	716	76.0 (2.6)	14.1 (1.4)	9.9 (2.0)
Asian	266	74.4 (4.1)	11.1 (3.1)	14.6 (3.0)
Native American[1]	134	55.4 (10.0)	27.4 (9.0)	17.2 (2.6)
TOTAL[2]	3432	68.5 (1.7)	17.8 (1.2)	13.6 (1.1)
Grade 7				
Mexican American	1294	78.2 (1.8)	17.9 (1.5)	3.9 (0.8)
Puerto Rican	514	57.9 (4.2)	37.9 (5.0)	4.2 (1.6)
Cuban	284	79.1 (8.2)	15.2 (7.1)	5.7 (1.9)
Other Hispanic	549	65.1 (5.2)	30.9 (5.3)	4.0 (2.0)
Asian	526	83.2 (2.7)	12.3 (2.1)	4.5 (1.9)
Native American1	126	68.6 (3.3)	23.6 (2.2)	7.8 (3.1)
TOTAL	3417	75.5 (1.8)	20.3 (1.6)	4.3 (0.7)
Grade 11				
Mexican American	807	76.8 (1.4)	19.7 (1.6)	3.5 (0.6)
Puerto Rican	358	58.9 (3.8)	35.6 (3.6)	5.4 (2.8)
Cuban	482	79.6 (8.9)	18.3 (8.0)	2.1 (0.9)
Other Hispanic	438	69.9 (3.0)	21.5 (3.3)	8.6 (3.1)
Asian	625	80.2 (2.0)	14.6 (1.7)	5.1 (0.9)
Native American[1]	93	72.1 (5.0)	26.3 (5.1)	1.6 (0.9)
TOTAL	2836	74.9 (1.2)	20.3 (1.1)	4.9 (0.6)

*Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
2 Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

likely to report one parent families. Asian students were less likely than all groups, save Cuban and Other Hispanic students, to report living in a single parent household.

Summary of Demographic Findings

While there is variation in the student-reported demographic findings by grade and by ethnic group, overall our findings are similar to those of previous studies.

o The parents of Asian and Cuban students have generally attained higher education levels than the parents of Puerto Rican and Mexican American students, although the differences do not always achieve statistical significance. However, it must be kept in mind that more than half of the third graders and more than one-fourth of the seventh graders did not respond to the questions concerning parental educational level and that the percent agreement between parents' and students' reports were between 40% and 65%. Moreover, students tended to over estimate their parents' education levels, particularly in grade 3.

o As might be expected, the data indicate that in general Mexican American students were more likely than were their peers in this study to report being born in the United States. Asian students by and large, were less likely than other groups to report being born in this country.

o The vast majority of students report that they have lived in the United States five years or more.

o Although the great majority of study participants reported living with their mother or stepmother, within each group seventh and eleventh graders were more likely to report a mother living in the home than were third graders.

o In general, Puerto Rican students were more likely to report living in one parent families than were other grou.   For Cuban and Mexican American students, seventh and eleventh graders were more likely to report living with both parents than were their third grade ethnic group peers.

<div align="center">

What do we know about the language use and exposure
of Hispanic and Asian children?

</div>

This section of the report presents the data concerning the differences among the various ethnic groups on the language variables described in Chapter Three.

Minority Language Use in the Home

In grade 3, as Table 8 shows, Cuban students are more likely to report that they use the minority language in the home than are their classmates. There are no differences among the other groups in amount of non-English language used in the home.

The data in grades 7 and 11 also indicate that Cuban students are more likely than other groups to use the minority language in the home. Puerto Rican students in grades 7 and 11 are more likely to report using a minority language in their homes than are Mexican American students.

Minority Language Use Outside the Home

In grade three, (Table 9) Cuban and Puerto Rican pupils are more likely to use their minority language outside the home than are the other student groups. In grade seven, Asian students are less likely than all other groups to use a language other than English outside the home, while Cuban and Puerto Rican students are more likely than Mexican American youngsters to use a non-English language outside the home. In the eleventh grade, we find that Cuban students are more likely and Asian students less likely to use a minority language at school and in shops as compared with reports of their classmates.

English Competence

Table 10 indicates that at both the seventh and eleventh grades, Asian students rate their competence in English lower than do Mexican American and Puerto Rican students.

Minority Language Competence

Cuban respondents in both the seventh and eleventh grade rate themselves highest of all groups on their ability to understand, read, write, and speak the non-English language spoken in their home (Table 11). Puerto Rican students in both 7 and 11 grades report higher minority language competence than do Mexican American students.

Exposure to Minority Language in Electronic Media

Asian students in the third grade were the least likely, with the exception of Cuban students, to report that they listened to TV, radio, or records and tapes in another language. (Table 12) Puerto Rican youngsters reported more likelihood of listening to non-English media than did Cuban pupils.

In the seventh grade, Cuban and Puerto Rican students reported significantly more exposure than Mexican American and Asian students to electronic media in a language other than English. Asian students reported the least amount of all groups in their frequency of media listening in a language other than English.

Table 8

MINORITY LANGUAGE USE IN THE HOME

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native Americans[1]	20% Pooled SD
Grade 3	-0.53*(.19)**	-0.53(.22)	1.25(.30)	-0.34(.31)	-0.31(.31)	-2.63(.68)	
(SD)	3.50	3.04	3.36	3.39	3.47	3.02	0.67
N	1256	618	295	724	267	131	
Grade 7	-1.74(.38)	0.20(.61)	4.20(.72)	-0.36(.81)	-0.56(.51)	-3.29(3.52)	
(SD)	6.07	5.53	4.94	5.97	6.32	6.50	1.20
N	1617	625	349	676	609	166	
Grade 11	-1.82(.49)	0.56(.45)	4.41(.41)	-0.59(1.11)	-0.82(.57)	-6.48(1.84)	
(SD)	6.35	5.54	4.05	6.76	6.94	6.60	1.24
N	1012	448	566	555	764	122	

* Weighted Means of sums of standardized item responses: High positive score signifies frequent use of minority language.

** Standard Errors in parentheses

[1] Interpret with caution, standard errors are poorly estimated.

5○

Table 9

MINORITY LANGUAGE USE OUTSIDE THE HOME

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native Americans[1]	20% Pooled SD
Grade 3	-0.23*(.08)**	0.51(.17)	0.79(.32)	-0.30(.09)	-0.63(.13)	-0.11(.28)	0.43
(SD)	2.01	2.56	2.76	1.84	1.68	2.35	
N	1256	620	297	725	271	131	
Grade 7	-0.50(.14)	0.28(.27)	0.91(.19)	0.25(.48)	-1.35(.09)	1.83(2.70)	
(SD)	2.65	2.82	3.25	3.89	1.73	4.72	0.59
N	1642	644	351	688	612	166	
Grade 11	-0.42(.27)	0.00(.19)	1.66(.65)	-0.05(.15)	-1.27(.10)	0.21(.89)	
(SD)	2.87	2.49	3.98	3.30	1.69	3.63	0.59
N	1030	457	573	565	772	123	

* Weighted means of sums of standardized item response; positive score high minority language use.
** Standard Errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.

53

Table 10

ENGLISH COMPETENCE

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native Americans[1]	20% Pooled SD
Grade 7	0.38*(.15)**	0.41(.15)	0.18(.29)	-0.34(.39)	-0.51(.25)	-0.36(.81)	
(SD)	2.99	2.76	3.28	3.93	3.81	3.28	0.65
N	1642	641	353	692	616	166	
Grade 11	0.38(.15)	0.46(.18)	0.13(.39)	-0.22(.37)	-0.46(.37)	0.42(.23)	
(SD)	2.97	2.74	3.23	3.73	3.84	2.66	0.66
N	1031	459	571	566	770	123	

* Weighted means of sums of standardized item response; high positive score means high English fluency use.
** Standard Errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.

Table 11

COMPETENCE IN MINORITY LANGAUGE

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native Americans[1]	20% Pooled SD
Grade 7	-0.59*(.16)**	0.40(.24)	2.25(.42)	-0.20(.33)	-0.86(.21)	-2.07(1.05)	
(SD)	3.17	2.98	3.16	3.42	2.90	2.80	0.63
N	1641	640	352	692	616	167	
Grade 11	-0.64(.27)	0.79(.13)	1.90(.25)	0.26(.42)	-0.59(.16)	-3.20(.22)	
(SD)	3.34	2.91	2.67	3.49	3.23	3.11	0.64
N	1031	459	571	566	771	122	

*Weighted means of s'ms of standardized item response; high positive score indicates high fluency in non-English language.

**Standard Errors in parentheses.

[1] Interpret with caution, standard errors are poorly estimated.

Table 12

EXPOSURE TO MINORITY LANGUAGE IN ELECTRONIC MEDIA

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native American[1]	20% Pooled SD
Grade 3	-0.06*(.07)**	0.15(.17)	-0.36(.17)	-0.08(.12)	-0.83(.22)	-0.41(.21)	
(SD)	2.40	2.21	2.14	2.28	2.29	2.18	0.46
N	1256	618	294	726	271	133	
Grade 7	-0.18(.13)	0.58(.22)	0.54(.23)	0.42(.28)	-1.06(.12)	-0.50(.93)	
(SD)	2.48	2.63	2.74	2.64	1.82	2.34	0.49
N	1640	640	352	690	616	164	
Grade 11	-0.04(.14)	0.55(.20)	0.57(.33)	0.05(.14)	-0.78(.16)	-1.35(.41)	
(SD)	2.53	2.59	2.73	2.66	2.00	1.9ż	0.50
N	1029	457	572	561	771	123	

* Weighted means of sums of standardized item response; high positive score means high English fluency use.

** Standard Errors in parentheses

[1] Interpret with caution, standard errors are poorly estimated.

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In the eleventh grade, Puerto Rican and Cuban students listened to more electronic media in their minority language than did all other groups (except for no difference between Cuban and Other Hispanic students). Asian students were least likely to listen to programs in a language other than English.

Exposure to Minority Language in Print Media

In both grades 7 and 11 (Table 13), Asian and Cuban students were more likely than the other groups to report that they had newspapers, magazines and books in the home that were written in a language other than English. Compared to Puerto Rican students, Mexican American students in the eleventh grade were less likely to report non-English print material at home.

Summary of Language Factor Findings

The findings vary by grade and ethnic group, but generally the trends in the data reveal:

o Cuban students report using a non-English language more frequently at home than do other groups. Puerto Rican students report using the home language more frequently than Mexican American students.

o While the differences among groups do not always reach statistical significance, generally, Cuban and Puerto Rican students also appear to use their non-English language outside the home more frequently than other groups.

o For the most part, in rating their competence in reading, writing, speaking and understanding both English and their non-English home language, Asian students were less likely than Hispanic students to give themselves high ratings. It may be that this difference in self-reported competence is an artifact of the subjective meaning that these different groups bring to a rating scale of "very well" to "not at all." As the data further on in this chapter reveal, in an objective (test score) measure of ability to read English, Asian students scored significantly better than did all other groups measured.

o The data on exposure to electronic media in a non-English language indicate that Cuban and Puerto Rican students tend to use electronic media in their non-English language relatively more and Asian students relatively less. This is consistent both with their more frequent use of their non-English language in and outside the home, and may also be related to the fact that, in many areas of the country with large concentrations of Spanish speakers, there are radio and tv programs broadcast in that language. There is, consequently, more opportunity for Hispanic students to listen to TV and radio programs in Spanish than there is for Asian students to listen to such programs in their non-English language.

Table 13

EXPOSURE TO MINORITY LANGUAGE IN PRINT MEDIA

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanic	Asians	Native Americans[1]	20% Pooled SD
Grade 7	-0.52*(.08)**	-0.15(.11)	0.88(.16)	-0.09(.17)	0.93(.26)	-0.56(.14)	
(SD)	1.83	2.02	2.41	2.16	2.63	1.91	0.42
N	1619	635	347	684	610	163	
Grade 11	-0.93(.07)	-0.33(.15)	1.09(.27)	-0.36(.30)	9.52(.12)	-1.53(.13)	
(SD)	1.83	2.06	2.47	2.20	2.38	1.56	0.43
N	1018	453	570	555	761	121	

* Weighted means of sums of standardized item response; high positive score means high exposure of print media.
** Standard Errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.

o Non-English print material is more frequently reported to be
available in the homes of Cuban and Asian students, than is the
case for the other Hispanic groups. This may in part reflect the
higher levels of education of those students' parents and, for
Asian students as we shall see in the data on home educational
support systems, the greater frequency of literacy related items
in the homes.

What are the educational supports in the home?

Literacy Related Items in the Home

Table 14 indicates the literacy related items in students' homes.
Hispanic students in grade 3 were less likely than their ethnic peers in
grades 7 and 11 to report the five items — dictionary, encyclopedia, 25
books or more, newspapers and magazines — in their homes.

Puerto Rican pupils in third grade were more likely than other Hispanic
and Asian children to report three or fewer literacy related items in the
home. Asian pupils were less likely to report so few items and were more
likely to report all five items. In grade 7, Asian students were less
likely than Mexican American students to have three or fewer literacy
related objects in the home. In grade 11, Puerto Rican students were the
most likely, except for Cuban students, to report three or fewer literacy
support items in the home, and less likely than Other Hispanic and Asian
students to report five such items in their homes.

Someone at Home Asks about Schoolwork

Table 15 presents students' reports of how often someone at home asks
them about their schoolwork. At grade three, more than fifty percent of all
ethnic groups reports that someone at home inquires about schoolwork on a
daily basis, and there were no significant differences among the groups.
There were very few statistically significant differences between groups in
the weekly, monthly, or never categories. Cuban students reported fewer
weekly inquiries than Other Hispanic and Asian pupils.

At the seventh grade, like the third grade, more than fifty percent of
all groups reported that they were asked about their work daily. Puerto
Rican seventh graders were, however, more likely than all other groups, save
Cuban students, to be asked on a daily basis. Puerto Rican students were
also less likely than Mexican American, Cuban and Asian students to report
being asked only monthly. Asian students were more likely than Mexican
American, Puerto Rican and Other Hispanic students to report being asked
about schoolwork on a monthly basis. Asian seventh graders were more likely
to report being asked about their schoolwork on a weekly basis than were
their Hispanic peers.

At grade 11, approximately half of the students in each group reported
that someone at home asks about their schoolwork daily. Unlike the reports

Table 14

LITERACY RELATED ITEMS IN THE HOME

Ethnic Group		0-3	4	5
	N	%*(SE)**	%(SE)	%(SE)
Grade 3				
Mexican American	1249	67.1(3.6)	21.9(2.2)	11.1(2.0)
Puerto Rican	628	74.8(5.0)	17.0(3.9)	8.2(2.0)
Cuban	296	70.7(4.3)	17.7(3.0)	11.6(2.2)
Other Hispanics	717	61.6(3.1)	23.2(2.8)	15.2(2.0)
Asian	258	46.0(3.8)	28.9(4.3)	25.1(4.1)
Native American[1]	132	59.1(5.0)	24.4(8.4)	16.5(7.5)
TOTAL[2]	3457	63.2(2.7)	23.1(1.7)	13.7(1.4)
Grade 7				
Mexican American	1641	47.6 (2.7)	25.5(1.5)	26.8 (2.1)
Puerto Rican	644	40.0 (3.7)	28.5(3.7)	31.5 (3.6)
Cuban	354	41.9 (3.7)	35.9(3.1)	22.3 (3.3)
Other Hispanics	691	41.4 (4.6)	27.5(3.2)	31.1 (4.3)
Asian	614	35.3 (3.1)	30.1(3.1)	34.6 (3.5)
Native American[1]	165	54.5(13.6)	20.6(3.8)	24.9(11.0)
TOTAL	4109	44.4 (2.2)	27.0(1.2)	28.6 (1.8)
Grade 11				
Mexican American	1030	31.3(2.3)	34.2(2.1)	34.5(1.9)
Puerto Rican	459	38.4(2.7)	33.5(4.0)	28.2(2.8)
Cuban	570	28.7(4.2)	27.5(7.9)	43.8(8.7)
Other Hispanics	567	29.2(3.8)	28.5(3.3)	42.3(6.0)
Asian	768	23.1(3.2)	31.4(3.9)	45.5(3.7)
Native Amer. [1]	122	23.0(4.4)	36.9(7.2)	40.1(8.3)
TOTAL	3516	28.7(1.4)	32.3(1.7)	39.0(1.5)

* Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who
identified themselves either as Asian, Native American or Hispanic. It
includes Hispanic informants who did not identify their Hispanic
subgroup.

Table 15

HOW OFTEN SOMEONE AT HOME ASKS CHILD
ABOUT SCHOOL WORK

Ethnic Group	N	Daily X*(SE)**	Weekly X(SE)	Monthly X(SE)	Never (X SE)
Grade 3					
Mexican American	1252	58.2(1.2)	10.8(1.9)	3.6(0.4)	27.3(1.5)
Puerto Rican	622	62.8(5.3)	10.3(1.8)	6.0(2.2)	20.9(3.1)
Cuban	297	60.6(5.5)	7.5(1.8)	5.5(2.8)	26.4(5.7)
Other Hispanic	716	60.5(3.6)	13.9(2.1)	2.7(1.2)	22.9(3.4)
Asian	257	56.6(4.6)	16.2(2.9)	3.2(2.1)	24.0(3.8)
Native American[1]	132	67.8(5.0)	10.0(4.3)	5.2(3.2)	17.1(3.3)
TOTAL[2]	3452	60.0(1.3)	11.6(1.3)	3.7(0.7)	24.6(1.1)
Grade 7					
Mexican American	1622	66.8(1.6)	14.4(1.6)	3.5(0.5)	15.4(1.9)
Puerto Rican	633	77.3(3.7)	11.7(2.2)	1.6(0.7)	9.3(2.6)
Cuban	347	68.1(5.6)	14.8(1.0)	4.5(1.3)	12.7(4.4)
Other Hispanic	677	66.2(4.0)	16.7(3.2)	2.0(0.6)	15.1(3.0)
Asian	612	54.5(3.8)	26.5(3.1)	8.1(1.5)	11.0(1.8)
Native American[1]	165	51.7(5.3)	26.2(4.5)	5.3(2.6)	16.8(2.7)
TOTAL	4219	63.9(1.5)	17.6(1.3)	4.3(0.5)	14.3(1.2)
Grade 11					
Mexican American	1028	53.2(2.5)	21.8(1.0)	8.8(1.6)	16.2(1.7)
Puerto Rican	456	51.4(4.6)	19.7(3.1)	6.8(2.0)	22.2(2.8)
Cuban	569	54.3(6.0)	23.7(4.9)	8.3(2.8)	13.6(2.8)
Other Hispanic	562	51.1(4.4)	25.0(4.4)	4.5(0.9)	19.4(2.8)
Asian	765	48.5(3.1)	22.9(2.2)	8.5(1.2)	20.0(1.6)
Native American[1]	123	49.2(4.8)	28.3(4.0)	5.7(2.2)	16.9(6.0)
TOTAL	3549	51.2(1.7)	22.8(1.1)	7.8(0.7)	18.2(0.8)

*Percentages are weighted to yield population estimates.
**Standard error in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

in grades 3 and 7, few significant group differences were apparent in grade 11. In fact only four were found: Other Hispanic students were less likely than were Mexican American or Asian students to be asked about schoolwork only about once a month; and, Cuban eleventh graders were less likely than their Puerto Rican or Asian peers to report never being asked about their schoolwork.

Parental Educational Aspirations

This two-item composite variable included student reports concerning parental aspirations that their children would graduate from high school, and that these seventh and eleventh graders would go on to college. The results given in Table 16 indicate that Asian and Cuban students at both grade levels report higher parental educational aspirations than do their Puerto Rican and Mexican American peers. Parents of Other Hispanic seventh graders are reported to have higher aspirations for their children than do Mexican American parents.

Summary of Home Educational Support Variables

There were few consistent differences among the groups regarding the home educational support variables; however, three findings are important:

o Although the data are not always consistent within the three grades studied, Puerto Rican and Mexican American students were more likely to report few literacy related items in the home than were their peers.

o At least half of the students in each grade report that someone in their home asks about their schoolwork.

o Asian and Cuban seventh and eleventh graders report higher parental educational aspirations than do their Puerto Rican and Mexican American classmates.

Educational Experiences and School Related Behaviors

Tables 17 through 26 describe data from the variables relating to school experiences and school related behaviors. Those variables are: enrollment in preschool; curriculum track; coursework; experience with grade repetition, and homework efforts.

Preschool Attendance

As Table 17 indicates, at the third grade Asian students were more likely than Mexican American, Puerto Rican and Other Hispanic students to report attendance in preschool programs, and Puerto Rican youngsters were less likely to have attended preschool than Cuban or Asian students.

Table 16

PARENTS' EDUCATIONAL ASPIRATIONS

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native Americans[1]	20% Pooled SD
Grade 7	-0.23*(.08)**	-0.05(.12)	0.26(.10)	0.20(.07)	0.28(.05)	0.16(.13)	
(SD)	1.96	1.38	1.13	1.09	1.07	1.31	0.30
N	1147	513	301	548	534	115	
Grade 11	-0.52(.10)	-0.04(.13)	0.34(.04)	0.12(.09)	0.26(.06)	-0.10(.16)	
(SD)	1.96	1.51	0.69	1.04	1.26	1.20	0.28
N	791	385	532	481	727	90	

* Weighted means of sums of standardized item response; positive score indicates parents have high aspirations for their children.

** Standard Errors in parentheses

[1] Interpret with caution, standard errors are poorly estimated.

Table 17

PRESCHOOL ATTENDANCE

Ethnic Group	N	Preschool % (SE)
Grade 3		
Mexican American	1255	40.0 (3.1)
Puerto Rican	620	27.9 (5.4)
Cuban	295	49.1 (3.3)
Other Hispanic	725	36.4 (3.9)
Asian	272	57.9 (5.5)
Native American[1]	133	46.1 (3.8)
TOTAL[2]	3478	41.5 (2.7)
Grade 7		
Mexican American	1600	42.9 (2.2)
Puerto Rican	624	43.9 (5.1)
Cuban	344	31.0 (5.3)
Other Hispanic	660	43.4 (3.8)
Asian	603	46.0 (2.9)
Native American[1]	160	53.9 (5.8)
TOTAL	4149	43.8 (1.4)
Grade 11		
Mexican American	1029	36.7 (2.1)
Puerto Rican	454	40.3 (6.7)
Cuban	570	29.5 (3.7)
Other Hispanic	563	39.9 (3.4)
Asian	760	45.0 (4.0)
Native American[1]	123	45.2 (4.2)
TOTAL	3545	39.9 (1.7)

*Percentages are weighted to yield population estimates.
**Standard errors in parentheses.
[1] Interpret with caution, standard errors are poorly estimated.
2 Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Puerto Rican students in the seventh grade were more likely to report preschool experiences than were third grade Puerto Rican pupils. Cuban students in grade 7 were less likely to report attending preschool than were their Mexican American and Asian gradements. The data at grade 11 were quite similar, with Cuban students less likely to report preschool experiences than Other Hispanic or Asian students.

Coursework Taken

Type of Curriculum. Table 18 presents the data concerning eleventh grade students' curriculum track -- general, academic/college preparatory or vocational/technical. The data reveal that Asians are less likely, with the exception of Other Hispanic students, to report being enrolled in a vocational/technical track than are their classmates and more likely to report enrollment in an academic/college preparatory track. Cuban students were more likely than Puerto Rican or Mexican American students to report enrollment in an academic track. Again, with regard to the general track, Asians were less likely to report being enrolled in this curriculum, and Cuban students were less likely than Mexican American pupils to be enrolled in this track.

About 60% of the Mexican American eleventh graders reported being enrolled in a general curriculum, as are some 41% to 49% of Puerto Rican, Cuban and Other Hispanic students. The corresponding academic/college preparatory enrollment percentages are in the range from 31% to 49%. In contrast, nearly 66% of Asian eleventh graders report being in an academic/college preparatory curriculum as compared with only about 30% in a general course. Roughly 10% of Mexican American, Cuban and Other Hispanic eleventh grade students report enrollment in a vocational/technical curriculum, with some 16% and 5% Puerto Rican and Asian enrollment.

Eleventh Grade Coursework. Table 19 presents the data on reported current enrollment in a class in the fields of mathematics, science, United States history, and computers. About 80% of eleventh graders in each group reported taking a United States History class, with no significant differences among the groups.

Asian and Cuban students were more likely to report being enrolled in a mathematics or science class than were their peers. However, Cuban students were more likely to report currently taking a science course than were Asian students. Mathematics and science course enrollments reflect to some extent the type of curriculum reported, and these results are quite consistent with the preceding findings.

In the computer field, Mexican American students are less likely to report taking a course than are Puerto Rican and Asian students. About one-fourth of the students in the latter four groups reported taking a computer class, and there were no significant differences among these student groups.

Mathematics Courses. When we examine the seventh grade data (Table 20), we find that Asian tracking into a strong program of mathematics preparation is already evident. Asian seventh graders are more likely than

Table 18

ELEVENTH GRADERS' TYPE OF CURRICULUM

Ethnic Group		General	Academic/ College Preparatory	Vocational/ Technical
	N			
Mexican American	1019	58.5*(3.1)**	30.5 (3.2)	11.0 (1.9)
Puerto Rican	452	48.9 (4.2)	34.7 (2.5)	16.4 (4.1)
Cuban	566	41.2 (3.6)	48.8 (4.6)	10.1 (1.9)
Other Hispanic	556	45.1 (4.5)	44.5 (3.8)	10.4 (3.2)
Asian	747	29.2 (4.0)	65.9 (3.7)	4.9 (1.1)
Native American[1]	121	58.2 (6.1)	30.0 (6.7)	11.8 (3.3)
TOTAL[2]	3507	46.1 (2.6)	44.2 (2.5)	9.6 (1.0)

*Percentages are weighted to yield population estimates.
**Standard errors in parentheses.
[1] Interpret with caution, standard errors are poorly estimated.
[2] This total represents responses of all who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table 19

CLASSES ELEVENTH GRADE STUDENTS ARE CURRENTLY TAKING

Ethnic Group		Math		Science		U.S. History		Computer
	N		N		N		N	
Mexican American	994	73.3*(2.5)**	983	56.7 (3.1)	990	82.4 (4.2)	955	17.2(2.1)
Puerto Rican	432	71.8 (4.5)	430	48.1 (3.8)	433	79.2 (5.6)	421	24.7(2.6)
Cuban	555	96.6 (0.8)	553	90.3 (2.3)	554	86.7 (5.7)	545	26.2(9.0)
Other Hispanic	529	70.2 (4.0)	519	61.0 (5.8)	521	80.3 (4.0)	495	27.2(5.8)
Asian	726	93.2 (1.7)	715	82.4 (2.9)	715	80.9 (3.3)	699	29.0(2.7)
Native American[1]	119	68.3(10.6)	115	47.2 (8.5)	116	88.3 (4.9)	117	12.8(2.9)
TOTAL[2]	3398	79.7 (1.6)	3358	65.1 (2.2)	3372	81.9 (2.3)	3273	23.0(1.7)

*Percentages are weighted to yield population estimates.

**Standard errors in parentheses.

[1] Interpret with caution, standard errors are poorly estimated.

[2] This total represents responses of all who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table 20

SEVENTH GRADERS' CURRENT MATH CLASS

Ethnic Group	N	No Math %*(SE)**	Regular % (SE)	Pre-Alg. % (SE)	Algebra % (SE)	Other % (SE)
Mexican Americans	1529	0.6(0.2)	77.5(2.6)	11.8(1.9)	3.0(0.7)	7.2(0.9)
Puerto Ricans	598	0.6(0.5)	73.5(4.8)	11.8(1.9)	4.7(1.8)	9.3(3.0)
Cubans	331	1.0(0.9)	71.5(4.2)	10.3(5.8)	4.1(1.6)	13.1(3.7)
Other Hispanics	638	0.9(0.6)	75.1(2.7)	11.4(2.3)	3.7(1.4)	8.9(1.7)
Asians	587	0.5(0.4)	58.3(3.9)	28.4(3.5)	5.3(2.3)	7.6(1.6)
Native Americans[1]	156	2.0(1.3)	77.8(7.4)	3.4(0.8)	11.6(7.7)	5.1(2.9)
TOTAL[2]	3988	0.7(0.2)	73.0(1.9)	14.2(1.5)	4.3(0.9)	7.9(0.6)

*Percentages are weighted to yield population estimates.
**Standard error in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] This total represents responses of all who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

other student groups to be enrolled in a pre-algebra course. Conversely, Asian students are less likely than are their classmates to report being enrolled in a general mathematic class. There are no significant differences among the groups in reported enrollment in algebra or "other" mathematics courses.

Table 21 indicates the highest level mathematics course reported by eleventh graders. All significant differences involve Asian students except one — Mexican American students are more likely than their Cuban peers to report pre-algebra as the highest level mathematics course taken. Asian students are less likely (except for Cuban students) to report pre-algebra as their highest mathematics course than are other student groups. Asian students are less likely than all other student groups to report algebra as their highest level course and more likely than all other student groups to report Algebra 2, pre-calculus/calculus — except for Cuban students — as their highest mathematics course. There are no significant differences among the groups in the percentages reporting having taken geometry — all of which fall within the low range from 11.3 to 17%.

Science Courses Taken. Table 22 shows the various science courses eleventh grade students report having taken. The data indicate that Cuban students are significantly more likely than Mexican American and Asian students to have taken a general science course.

The percentages of students in the various groups who report a biology course are rather tightly distributed in the range from 81% to 94.1%. The only significant differences are that Mexican American students were less likely than Puerto Rican, Cuban and Asian students to report a biology course.

Asian eleventh graders were more likely than all groups to report a chemistry course. They were also significantly more likely than Mexican American students to report a physics course.

English Course. Table 23 indicates the type of English class in which eleventh graders are currently enrolled. While well over 90% of all students are in some type of English course, of the few not enrolled, Other Hispanic students were more likely than Asian students not to be in an English class.

This table (23) also indicates what proportion of students are enrolled in an honors/advanced placement or college preparatory English course. The data are consonant with earlier findings regarding curriculum track. Asian students are more likely to report being enrolled in college preparatory courses than are any of the other groups, and Asian students are more likely than any of the other groups to be enrolled in Honors/Advanced Placement English courses (significant for all groups except Cuban students). Cuban students were more likely than Mexican American and Other Hispanic students to be enrolled in Honors/Advanced Placement English courses.

Asian students, on the other hand, were less likely to report enrollment in a general English course than were their peers. This finding

Table 21

HIGHEST LEVEL OF MATHEMATICS COURSE TAKEN BY ELEVENTH GRADERS

Ethnic Group	N	Pre-Algebra %* (SE)**	Algebra % (SE)	Geometry % (SE)	gebra 2 % (SE)	Calculus % (SE)	Something Else % (SE)
Mexican American	995	29.5 (2.4)	23.9 (2.0)	15.8 (1.8)	27.6 (1.9)	2.2 (0.5)	1.1 (0.3)
Puerto Rican	433	23.6 (4.6)	19.0 (2.0)	12.6 (3.1)	38.7 (6.1)	2.0 (0.7)	4.1 (1.9)
Cuban	555	14.3 (6.2)	18.2 (4.1)	17.0 (5.9)	37.0 (3.1)	11.7 (9.1)	1.7 (1.8)
Other Hispanic	528	22.8 (3.8)	14.9 (2.5)	15.0 (2.4)	42.9 (4.0)	3.0 (1.2)	1.5 (0.6)
Asian	721	4.2 (1.1)	7.4 (1.3)	11.3 (2.2)	57.2 (2.9)	19.4 (2.9)	0.5 (0.3)
Native American[1]	118	21.3 (4.6)	30.3 (3.9)	21.2 (4.9)	25.6 (6.7)	1.2 (0.7)	0.3 (0.3)
TOTAL[2]	3393	19.0 (1.3)	17.4 (1.3)	14.3 (1.2)	40.1 (1.8)	7.9 (1.0)	1.3 (0.3)

*Percentages are weighted to yield population estimates.
**Standard errors in parentheses.
[1] Interpret with caution, standard errors are poorly estimated.
[2] This total represents responses of all who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table·23

SCIENCE COURSES REPORTED BY ELEVENTH GRADERS

Ethnic Group	N	General Science X* (SE)**	N	Biology % (SE)	N	Chemistry % (SE)	N	Physics % (SE)
Mexican American	946	79.6 (2.0)	947	81.0 (2.1)	915	21.9 (1.6)	905	15.3 (2.1)
Puerto Rican	406	78.7 (5.5)	408	88.9 (2.7)	388	31.5 (3.0)	371	18.7 (2.4)
Cuban	535	90.1 (4.6)	539	94.1 (1.8)	527	45.7 (9.8)	506	19.3 (8.9)
Other Hispanic	496	86.6 (4.0)	499	87.9 (2.9)	478	43.1 (5.1)	462	21.1 (4.5)
Asian	684	79.1 (3.0)	693	92.8 (1.6)	679	67.4 (2.5)	646	26.4 (3.6)
Native American[1]	111	86.4 (2.4)	111	88.1 (5.5)	110	56.9 (5.7)	107	7.1 (2.2)
TOTAL[2]	3219	81.0 (1.5)	3237	87.1 (1.1)	3138	41.3 (2.0)	3038	19.3 (1.6)

* Percentages are weighted to yield population estimated.
** Standard errors in parenthesis.
[1] Interpret with caution, standard errors are poorly estimated.
[2] This total represents responses of all who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table 23·

KIND OF ENGLISH CLASS IN WHICH
ELEVENTH GRADERS ARE CURRENTLY ENROLLED

Ethnic Group	N	Not In %* (SE)**	Honors Adv. Place % (SE)	Coll. Prep % (SE)	General % (SE)	Remedial % (SE)
Mexican American	1015	3.6 (0.8)	9.1 (0.7)	16.6 (3.6)	65.5 (3.7)	5.1 (1.2)
Puerto Rican	449	2.6 (1.1)	13.3 (3.1)	17.3 (4.3)	62.5 (4.7)	4.4 (1.3)
Cuban	564	1.3 (1.4)	26.3 (6.8)	15.2 (5.8)	55.0 (5.0)	2.2 (2.7)
Other Hispanic	548	6.0 (2.1)	12.1 (1.5)	17.7 (2.9)	59.5 (6.5)	4.8 (2.8)
Asian	748	1.1 (0.4)	27.2 (4.1)	30.7 (3.2)	38.9 (5.4)	2.1 (0.7)
Native American[1]	121	2.5 (1.2)	15.0 (3.5)	12.0 (2.9)	70.4 (3.9)	0.0 (0.0)
TOTAL[2]	3490	2.9 (0.4)	16.6 (2.2)	20.0 (2.2)	56.2 (2.9)	3.7 (0.7)

*Percentages are weighted to yield population estimates.

**Standard errors in parentheses.

[1] Interpret with caution, standard errors are poorly estimated.

[2] This total represents responses of all who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

is consonant with their greater enrollment in academic or college preparatory curricula. Mexican American students were significantly more likely to be enrolled in remedial English classes than were Asian students.

Grade Retention

Across the grades, some significant differences in grade retention (Table 24) reports suggest an interesting pattern. Mexican American and Cuban third-grade pupils are more likely than their eleventh-grade ethnic peers to have repeated one or more grades. The differential retention patterns for some groups at the higher grades may reflect that some of the students who were retained in the lower grades have dropped out of school by the eleventh grade.

Asian pupils in grade 3 are less likely to report having been retained than all other groups. Again in grade 7, Asian students are less likely to report having been left back than other groups (significant for all except Cuban and Other Hispanic students); and, Puerto Rican students are more likely than Mexican American, Asian and Other Hispanic students to report having been retained. At grade 11, as in grade 3, Asian students are less likely than all groups to report being retained in a grade and Puerto Rican students are more likely than any other group to report having been left back.

Amount of Homework

Tables 25 and 26 present the data on time spent doing homework. At the third grade level, Mexican American students were more likely to report having done no homework than were pupils in the other groups and Cuban students were less likely to have done none (significant for all but Asian and Other Hispanic students). Asian and Cuban third-grade students were more likely than their Mexican American grademates to do one hour of homework.

At grade 7, Mexican American and Cuban students are more likely than Puerto Rican and Asian students to report that they had no homework. Mexican American seventh-graders were also more likely to report no homework assigned than were their Other Hispanic classmates. Mexican American and Cuban students were more likely than other Hispanic and Asian students to report having homework but not doing it. The differences for one hour of homework were insignificant, but Asian students were more likely than any other group to report doing 2 hours of homework. With the exception of Other Hispanic students, Asian seventh graders were more likely to report doing more than two hours of homework than were the other groups.

Asian and Mexican American students in the eleventh grade more frequently report spending more than two hours on homework than do such children in the seventh grade. Once again the Asian students are more likely to report doing more than 2 hours of homework than their grademates, and conversely less likely than other groups not to do homework if it had been assigned.

Table 24

GRADE RETENTION

Ethnic Group	N	%* (SE)**
Grade 3		
Mexican American	1236	25.7*(2.0)**
Puerto Rican	614	26.3 (3.2)
Cuban	292	31.1 (5.4)
Other Hispanic	719	22.6 (2.9)
Asian	270	13.6 (3.0)
Native American[1]	133	21.3 (4.8)
TOTAL[2]	3441	23.2 (1.2)
Grade 7		
Mexican American	1539	26.5 (3.2)
Puerto Rican	584	37.5 (3.9)
Cuban	325	25.6 (8.9)
Other Hispanic	626	20.8 (3.9)
Asian	595	12.3 (2.1)
Native American[1]	158	29.6 (7.1)
TOTAL	3977	24.0 (2.1)
Grade 11		
Mexican American	1009	16.5 (1.6)
Puerto Rican	445	32.9 (3.3)
Cuban	565	18.0 (2.7)
Other Hispanic	543	20.5 (2.2)
Asian	754	11.6 (1.6)
Native American[1]	120	10.8 (2.5)
TOTAL	3479	17.2 (0.9)

*Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
2 Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table 25

AMOUNT OF HOMEWORK REPORTED BY THIRD GRADERS

Ethnic Group	N	None X*(SE)**	15 Mins. %(SE)	1/2 Hr. %(SE)	1 Hour %(SE)	>1 Hour %(SE)
Mexican American	1255	6.6 (1.3)	38.2 (1.8)	26.1 (1.8)	17.2 (1.8)	11.9 (1.0)
Puerto Rican	625	3.7 (0.7)	34.1 (2.1)	22.0 (2.4)	21.4 (2.3)	18.7 (2.1)
Cuban	297	0.8 (0.6)	25.3 (4.5)	27.7 (4.2)	28.9 (4.8)	17.4 (4.5)
Other Hispanic	727	3.1 (1.1)	34.7 (2.4)	26.8 (1.8)	20.8 (2.5)	14.5 (2.4)
Asian	271	2.5 (1.4)	25.5 (3.7)	26.6 (2.8)	26.8 (4.4)	18.6 (3.3)
Native American[1]	134	17.1 (7.3)	30.6 (4.8)	20.4 (3.7)	13.5 (3.6)	18.4 (6.9)
TOTAL[2]	3486	6.4 (1.1)	34.3 (1.3)	25.0 (1.0)	19.5 (1.5)	14.8 (1.3)

*Percentages are weighted to yield population estimates.

**Standard error in parentheses.

[1] Interpret with caution, standard errors are poorly estimated.

[2] This total represents responses of all who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table 26

AMOUNT OF HOMEWORK REPORTED BY SEVENTH AND ELEVENTH GRADERS

Ethnic Group	N	Have None X*(SE)**	Don't Do X(SE)	1/2 Hour X(SE)	1 Hour X(SE)	2 Hours X(SE)	2 Hours + X(SE)
Grade 7							
Mexican American	1630	11 1 (2.4)	8.2 (1.0)	19.6 (1.7)	36.0 (2.2)	17.6 (1.4)	7.4 (0.7)
Puerto Rican	640	2.6 (0.7)	5.8 (2.7)	21.5 (2.8)	35.2 (3.1)	21.6 (2.2)	13.3 (2.8)
Cuban	348	8.5 (1.8)	13.9 (3.6)	18.7 (1.9)	29.4 (5.8)	18.6 (2.0)	11.0 (3.5)
Other Hispanic	681	4.9 (1.9)	2.7 (0.6)	17.6 (2.0)	37.2 (3.2)	19.2 (1.6)	18.3 (2.7)
Asian	613	2.2 (0.7)	2.1 (0.8)	8.3 (1.6)	32.5 (3.3)	30.0 (3.1)	25.0 (2.3)
Native American[1]	167	11.9 (7.5)	4.4 (2.0)	17.6 (6.9)	_3.2 (7.6)	21.8 (4.5)	11.1 (1.6)
TOTAL[2]	4243	8.5 (1.5)	6.0 (0.6)	17.2 (1.5)	35.0 (1.3)	20.3 (1.3)	12.9 (1.1)
Grade 11							
Mexican American	1031	8.1 (1.1)	8.8 (1.6)	16.4 (1.6)	33.1 (1.7)	21.0 (1.5)	12.5 (1.4)
Puerto Rican	457	8.2 (2.5)	8.2 (1.7)	19.6 (4.2)	32.5 (2.7)	21.1 (2.1)	10.5 (2.8)
Cuban	569	3.6 (1.1)	6.6 (1.0)	14.0 (2.3)	43.4 (10.6)	19.4 (6.2)	13.0 (2.2)
Other Hispanic	563	5.2 (1.6)	9.5 (2.3)	13.0 (2.6)	31.7 (3.6)	22.4 (2.6)	18.2 (3.1)
Asian	769	2.7 (0.6)	3.7 (0.8)	6.7 (1.2)	18.0 (1.6)	26.5 (2.5)	42.4 (2.6)
Native American[1]	122	7.6 (2.3)	10.9 (1.3)	15.1 (4.3)	36.7 (6.9)	22.7 (5.1)	7.0 (1.2)
TOTAL	3557	5 9 (0.6)	7.4 (0.6)	13.2 (1.0)	29.2 (1.1)	22.7 (1.2)	21.7 (1.4)

*Percentages are weighted to yield population estimates.
**Standard error in parentheses.
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

76

Summary of School Related Behaviors

The school related behaviors indicate important differences among the groups:

o The data for Asian students show a pattern of behaviors that, as the literature indicates, are often positively related to school success. In general, these students are more likely to be enrolled in an academic curriculum at the eleventh grade, and more likely to have been enrolled in the more rigorous coursework -- advanced ath, science, honors English -- often associated with the academic/college preparatory track. Furthermore, these students report doing more homework (this too may be related to enrollment in more academic courses).

o Some 10% more Cuban students report being enrolled in an academic curriculum than a general program, and the coursework reported by Cuban eleventh-graders is generally concomitant with precollege work. Cuban students are more likely to report more demanding coursework than are their Mexican American and Puerto Rican grademates.

o Puerto Rican students are more likely to be enrolled in a general track than in an academic/college preparatory curriculum and Puerto Rican students are more likely to report being in vocational/technical programs than are their classmates.

o Puerto Rican students at the three grade levels report having been retained in grade more often than do other students.

What are the students' school related attitudes?

In discussing results in this section, for seventh and eleventh graders, only those findings that are both statistically significant and yield an "effect size" equal to or greater than 20% of the pooled standard deviation are noted.

Attitudes toward School

At grade 3 responses represent a single item, whether the student likes to go to school, and at grades 7 and 11 responses represent a composite variable composed of five items (see Chapter Three). While the vast majority of third graders like to go to school (Table 27), Asian pupils were more positive about school than were Mexican American and Cuban students.

At grade 7 (Table 28) Asian students report more positive attitudes than Cuban, Mexican American or Other Hispanic students.

Table 27

PERCENT OF THIRD GRADERS WHO LIKE TO GO TO SCHOOL

Ethnic Group	N	% *(SE)**
Mexican Americans	1240	70.1(2.7)
Puerto Ricans	617	72.2(3.0)
Cubans	290	68.2(3.2)
Other Hispanics	717	75.0(3.0)
Asians	270	81.4(5.1)
Native Americans[1]	131	75.5(3.2)
TOTAL[2]	3443	73.4(1.9)

 *Percentages are weighted to yield population estimates.
**Standard error in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] This total represents responses of all who identified themselves
either as Asian, Native American or Hispanic. It includes
Hispanic informants who did not identify their Hispanic subgroup.

Table 28

ATTITUDES TOWARD SCHOOL

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native Americans[1]	20% Pooled SD
Grade 7	-0.32*(.14)**	0.16(.25)	-0.29(.20)	-0.03(.24)	0.60(.10)	-0.44(.31)	
(SD)	2.67·	2.28	2.20	2.51	2.07	2.31	0.49
N	1229	498	271	526	512	134	
Grade 11	0.12(.10)	-0.10(.19)	-0.53(.30)	0.27(.16)	0.26(.10)	0.15(.32)	
(SD)	2.34	2.46	2.54	2.34	2.25	2.49	0.48
N	994	427	555	528	733	118	

* Weighted means of sums of standardized item response; high score indicates positive attitudes.
** Standard Errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.

At grade 11 there are no significant differences among Asian, Other Hispanics and Mexican American students on their positive attitudes towards school. However, these groups reported more positive attitudes than Cuban students (Table 28).

Attitudes toward Reading

Table 29 indicates that at grade 3, the overwhelming majority of students report that they like to read (78.5% to 87.2%). The only statistically significant difference among the groups was that Cuban pupils were less likely to report that they like to read than were Other Hispanic students.

At grade 7 (except for the contrast between Puerto Rican and Other Hispanic students), Asian and Puerto Rican students report the most positive attitudes about reading, and indicate more positive attitudes than do Mexican American, Other Hispanic, or Cuban students.

At grade 11, as with attitudes towards school, the discrepancies among groups narrows somewhat and the attitudes expressed are generally positive. There are no significant differences among Asian, Mexican American and Puerto Rican students in their positive attitudes towards reading; however, Cuban students are less positive than all groups save Other Hispanic students, while Other Hispanic students are less positive about reading than are Puerto Rican students (Table 30).

Locus of Control Related to Educational Achievement

This composite variable related to beliefs about effort and success in school. At grade 7, Asian students are more likely than any other group to believe in their efforts being related to success. There are no significant differences among the Hispanic groups on this variables.

Once again, we find that at grade 11, attitude distinctions among the groups narrow. The only difference is that Puerto Rican students are more likely than Cuban students to express belief that their efforts are related to success in school (Table 31).

Summary of Attitude Variables

o In general, some 75% to 85% of third graders in each group report liking to go to school and liking to read.

o Asian and Puerto Rican seventh graders typically expressed more positive attitudes toward school than did their classmates.

o Asian seventh graders were more likely than were their classmates to express the belief that the amount of effort expended on schoolwork is related to school achievement.

Table 29

THIRD GRADERS WHO LIKE TO READ

Ethnic Group	N	%* (SE)**
Mexican American	1240	82.6 (1.7)
Puerto Rican	613	84.9 (2.9)
Cuban	291	78.5 (3.9)
Other Hispanic	717	87.2 (1.9)
Asian	270	86.7 (4.5)
Native American[1]	132	83.0 (2.1)
TOTAL[2]	3441	84.3 (1.1)

*Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] This total represents responses of all who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

81

ATTITUDES TOWARD READING

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native Americans[1]	20% Pooled SD
Grade 7	-0.37*(.14)**	0.54(.26)	-0.35(.15)	0.17(.24)	0.80(.09)	0.20(.18)	
(SD)	2.70	2.11	2.60	2.67	1.83	2.37	0.50
N	1293	524	296	555	503	130	
Grade 11	0.07(.12)	0.40(.16)	-0.52(.10)	-0.16(.37)	0.31(.09)	0.21(.29)	
(SD)	2.51	2.26	2.50	2.82	1.99	2.39	0.48
N	947	422	546	521	708	112	

* Weighted means of sums of standardized item responses; high score indicates positive attitudes towards reading.
** Standard Errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.

Table 31

LOCUS OF CONTROL RELATED TO EDUCATIONAL ACHIEVEMENT

	Mexican Americans	Puerto Ricans	Cubans	Other Hispanics	Asians	Native Americans[1]	20% Pooled SD
Grade 7	0.01*(.10)**	-0.13(.09)	0.08(.24)	-0.11(.21)	0.73(.06)	-0.38(.44)	
(SD)	1.59	1.62	1.53	1.62	1.00	1.76	0.31
N	996	418	244	437	.29	89	
Grade 11	0.09(.07)	0.32(.09)	0.14(.19)	-0.04(.18)	0.09(.09)	-0.08(.27)	
(SD)	1.48	1.24	1.47	1.64	1.43	1.83	0.30
N	900	406	531	479	653	100	

* Weighted means of sums of standardized item responses; high score indicates high internal locus of control.
** Standard Errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.

o The differences noted in reported attitudes at grades 3 and 7
tended t. be more narrow in grade 11, a phenomenon that may be
related to differential dropout rates of the groups studied.

Characteristics of Schools

The variables we examined here were: type of school governance;
minority enrollment; poverty level of the student population; presence of
ESL/bilingual teachers.

Governance

Table 32 presents the data on public/ Catholic/ private and Bureau of
Indian Affairs school enrollment of the various groups in this study. The
vast majority of students are enrolled in public schools. Seventh grade
Asian students were more likely to attend Catholic schools than were Cuban
students, while in grade 11, Asian students were more likely to attend
Catholic schools than were Mexican American students. In grade 11, 7% of
the Asian students are in private school, with no Hispanic students enrolled
in such schools.

Minority Enrollment

At all three grade levels, Asians were the most likely of all groups,
to be enrolled in predominantly White schools (20% or less minority
enrollment). At grade three, Asian students were less likely than all other
groups to be enrolled in schools that were more than 80% minority.

At grade 7, with the exception of Cuban students, and grade 11, with
the exception of Other Hispanics, Asian students were less likely than all
groups to be enrolled in schools that were more than 80% minority enrollment
(Table 33).

Poverty Level/ Participation in Free Lunch Program

Table 34 presents the data on the percentage of students who attend
schools where less than 20% receive free lunch, 20 to 89% receive free
lunch, and 90% or more receive free lunch. At grade 3, Asian pupils are
more likely than Other Hispanic and Mexican American students to be enrolled
in schools with few children receiving free lunch, and conversely, they are
less likely than those same groups to attend schools where 90% or more of
the student body receives free lunch.

At grades 7 and 11, Asians are more likely to be enrolled in schools
with less than 20% of the students receiving free lunch than are Mexican
Americans and Puerto Ricans. In grade 7, they are also more likely than
other Hispanics to be enrolled in such schools.

Table 32·

SCHOOL GOVERNANCE

Ethnic Group		Public	Catholic	Private	Bureau of Indians Affairs
	N	%* (SE)**	% (SE)	% (SE)	% (SE)

Grade 3

Mexican American	1260	96.1 (2.3)	3.4 (2.0)	0.0(0.0)	0.5(0.4)
Puerto Rican	634	93.9 (3.3)	4.3 (2.9)	1.0(1.0)	0.9(0.9)
Cuban	298	82.2 (7.3)	13.7 (5.6)	0.0(0.0)	4.1(3.8)
Other Hispanic	730	86.1 (5.3)	11.5 (4.8)	1.0(1.0)	1.4(1.1)
Asian	272	82.6 (6.9)	16.0 (6.9)	1.0(1.0)	0.3(0.3)
Native American[1]	135	83.4 (13.5)	6.5 (5.6)	8.8(9.2)	1.4(1.3)
TOTAL[2]	3578	91.0 (3.1)	7.1 (2.5)	1.2(0.8)	0.8(0.7)

Grade 7

Mexican American	1651	92.7 (4.1)	6.9 (4.0)	0.3 (0.3)	0.0(0.0)
Puerto Rican	647	94.0 (4.7)	6.0 (4.7)	0.0 (0.0)	0.0(0.0)
Cuban	355	93.3 (2.1)	6.7 (2.1)	0.0 (0.0)	0.0(0.0)
Other Hispanic	696	88.4 (3.8)	9.7 (3.5)	0.0 (0.0)	1.9(1.9)
Asian	617	82.0 (4.4)	16.5 (4.4)	1.5 (1.1)	0.0(0.0)
Native American[1]	167	66.7 (11.6)	4.9 (3.3)	14.8(12.0)	13.5(6.3)
TOTAL	4305	88.6 (3.3)	8.6 (2.8)	1.6 (1.2)	2.3(0.8)

Grade 11

Mexican American	1033	99.1 (0.8)	0.9 (0.8)	0.0(0.0)	0.0(0.0)
Puerto Rican	461	95.6 (4.0)	4.4 (4.0)	0.0(0.0)	0.0(0.0)
Cuban	573	83.3 (11.8)	16.7(11.8)	0.0(0.0)	0.0(0.0)
Other Hispanic	567	92.5 (4.6)	7.5 (4.6)	0.0(0.0)	0.0(0.0)
Asian	772	84.6 (4.2)	8.4 (3.2)	7.0(2.7)	0.0(0.0)
Native American[1]	125	97.1 (2.3)	1.1 (1.1)	1.9(1.9)	0.0(0.0)
TOTAL	3582	92.8 (1.8)	5.1 (1.6)	2.2(0.8)	0.0(0.0)

*Percentages are weighted to yield population estimates

**standard errors in parentheses

[1] Interpret with caution, standard errors are poorly estimated.

2 Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

TABLE 33

PERCENT OF STUDENTS IN SCHOOLS WITH VARYING PROPORTIONS OF
MINORITY ENROLLMENT

Ethnic Group	N	0 - 20 %*(SE)**	21 - 80 %(SE)	81+ %(SE)
Grade 3				
Mexican American	1260	2.6(1.4)	62.3(8.1)	35.1(7.8)
Puerto Rican	634	0.4(0.4)	35.0(8.0)	64.7(8.0)
Cuban	298	0.0(0.0)	45.6(11.6)	54.4(11.6)
Other Hispanic	730	3.7(2.1)	57.3(5.9)	39.0(5.6)
Asian	272	38.3(8.8)	44.6(8.0)	17.1(6.2)
Native American[1]	135	41.8(11.4)	30.5(5.6)	27.6(8.6)
TOTAL[2]	3518	11.0(2.9)	53.6(5.4)	35.4(5.1)
Grade 7				
Mexican American	1651	3.4(1.6)	57.7(10.1)	38.9(10.4)
Puerto Rican	647	2.6(1.8)	53.7(11.3)	43.7(11.3)
Cuban	355	3.5(3.5)	73.3(12.5)	23.2(11.9)
Other Hispanic	696	7.9(3.0)	53.8(7.2)	38.2(7.2)
Asian	617	37.8(7.3)	52.5(7.5)	9.7(4.3)
Native American[1]	167	22.3(18.3)	25.6(14.1)	52.1(31.7)
TOTAL	4305	11.8(2.5)	53.9(7.0)	34.3(7.4)
Grade 11				
Mexican American	1033	12.4(3.8)	59.4(9.1)	28.2(9.7)
Puerto Rican	461	11.2(4.2)	48.6(8.4)	40.2(6.2)
Cuban	573	1.6(8.7)	50.4(8.1)	38.0(3.1)
Other Hispanic	567	15.8(5.5)	57.9(9.0)	26.3(10.1)
Asian	772	38.1(5.7)	55.1(5.0)	6.8(2.0)
Native American[1]	125	35.0(9.7)	26.8(6.2)	38.2(12.7)
TOTAL	3582	21.8(3.4)	54.3(5.3)	23.8(5.3)

*Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who identified
themselves either as Asian, Native American or Hispanic. It includes
Hispanic informants who did not identify their Hispanic subgroup.

TABLE 34

PERCENT (F STUDENTS IN SCHOOLS WITH VARYING LEVELS
OF STUDENT BODY RECEIVING FREE LUNCH PROGRAM

Ethnic Group	N	0 - 19% %*(SE)**	20 - 89% % (SE)	90 - 100% % (SE)
Grade 3				
Mexican American	958	18.0(5.4)	72.2(6.3)	9.8(2.4)
Puerto Rican	258	27.8(10.0)	65 3(9.1)	6.3(5.1)
Cuban	1.7	30.9(13.3)	52.2(13.1)	17.0(9.3)
Other Hispanic	495	24.8(5.8)	68.6(5.8)	6.5(1.9)
Asian	225	51.8(8.4)	47.1(8.6)	1.1(0.7)
Native American[1]	94	30.5(8.7)	67.0(7.7)	2.5(1.8)
TOTAL[2]	2293	25.8(3.5)	67.4(3.8)	6.8(1.5)
Grade 7				
Mexican American	1248	35.5(7.8)	54.2(10.6)	10.3(8.4)
Puerto Rican	489	24.2(10.2)	75.3(10.2)	0.0(0.0)
Cuban	115	25.3(21.3)	74.7(21.3)	0.0(0.0)
Other Hispanic	471	34.8(7.9)	58.0(5.9)	7.3(4.5)
Asian	447	66.7(6.5)	32.2(6.3)	1.1(0.9)
Native American[1]	78	54.1(19.6)	45.9(19.6)	0.0(0.0)
TOTAL	2970	42.1(6.0)	51.6(6.7)	6.3(4.7)
Grade 11				
Mexican American	898	50.1(11.3)	49.9(11.3)	0.0(0.0)
Puerto Rican	391	64.6(7.0)	30.5(7.1)	4.8(4.1)
Cuban	404	73.5(12.0)	23.9(14.0)	2.6(3.4)
Other Hispanic	466	56.1(15.2)	43.9(15.2)	0.0(0.0)
Asian	657	82.0(3.4)	18.0(3.4)	0.0(0.0)
Native American[1]	101	55.8(13.5)	43.4(3.4)	0.8(0.8)
TOTAL	2957	63.3(7.2)	36.1(7.2)	0.6(0.6)

*Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who identified
themselves either as Asian, Native American or Hispanic. It includes
Hispanic informants who did not identify their Hispanic subgroup.

ESL/Bilingual Specialists

Table 35 presents the data on the percent of students in schools according to the availability of bilingual or ESL specialists. Mexican American third graders and seventh graders are more likely than their Asian grademates to attend schools where there is more than one specialist. This is also true for Puerto Rican students who are more likely at the third and seventh grade to attend schools with more than one ESL/bilingual specialist than are Asian students.

Summary of School Data

The most consistent findings concerning the school characteristics data are those relating to ethnicity of student body and poverty level (participation in free lunch) of the students in the schools that Asian students attend. Generally, Asian students are more likely than other groups to attend predominantly White schools and less likely than other groups to attend schools with minority enrollments greater than 80%. Furthermore, Asian students are more likely to attend schools where fewer than 19% receive free lunch.

How do the groups compare in Achievement?

We have data from the National Assessment relating to mathematics achievement at the three grades, and to reading achievement at grade 7. In addition, we have self-report on grades from seventh and eleventh graders.

Grades

Table 36 indicates that Asian students in both seventh and eleventh grade are more likely to report receiving A's or A's and B's on their report card and less likely to receive C's or C's and D's than are any of the other respondents. At the eleventh grade, Mexican American students were more likely than Cuban, Other Hispanic and Asian students to receive C's or C's and D's.

Mathematics Achievement

Table 37 presents the mathematics scores for students in grades 3, 7 and 11 in the NAEP special sample and the representative sample of White and Black students in the regular NAEP sample who were administered the same mathematics items as were the students in the special sample. The scores are based on percent of items correctly answered at each grade. In grade three the percent is based on 18 items, in grade seven the percent is based on 22 items and in grade 11 the percent is based on 28 items.

The performance patterns among ethnic groups are relatively consistent across grade levels. Asian students consistently outperform all the other

Table 35

PERCENT OF STUDENTS IN SCHOOLS ACCORDING TO
AVAILABILITY OF BILINGUAL OR ESL SPECIALISTS

Ethnic Group	N	None X*(SE)**	.5 or 1 X(SE)	>1 X(SE)
Grade 3				
Mexican American	1018	29.9(8.0)	2.1(1.3)	68.0(8.1)
Puerto Rican	394	33.0(12.6)	1.9(1.8)	65.2(13.9)
Cuban	145	46.1(8.9)	2.4(2.0)	51.5(9.3)
Other Hispanic	519	36.9(6.6)	3.4(1.9)	59.7(7.5)
Asian	244	42.8(6.9)	30.4(9.7)	26.8(8.1)
Native American[1]	96	70.9(5.8)	15.2(6.8)	13.9(10.5)
TOTAL[2]	2552	37.0(4.8)	7.3(2.2)	55.7(5.7)
Grade 7				
Mexican American	1221	39.5(7.7)	18.4(5.7)	42.1(11.0)
Puerto Rican	492	39.4(12.1)	8.9(4.2)	51.8(13.3)
Cuban	120	53.2(14.6)	15.9(11.1)	30.9(8.8)
Other Hispanic	420	41.7(7.7)	22.3(7.6)	36.0(8.5)
Asian	474	59.1(7.5)	25.6(8.0)	15.3(3.7)
Native American[1]	93	57.6(14.0)	34.3(14.1)	8.1(3.9)
TOTAL	2941	45.3(5.4)	20.7(5.1)	34.1(7.6)
Grade 11				
Mexican American	920	35.9(10.4)	28.8(8.6)	35.3(4.6)
Puerto Rican	392	34.7(9.7)	15.1(5.2)	50.2(10.3)
Cuban	401	37.7(35.5)	38.9(24.9)	23.4(10.9)
Other Hispanic	475	49.7(13.5)	22.0(8.4)	28.3(7.4)
Asian	642	40.7(4.3)	23.9(5.1)	35.4(6.0)
Native American[1]	114	65.9(7.4)	14.2(4.9)	19.9(6.7)
TOTAL	2984	40.7(6.3)	24.8(5.1)	34.5(4.1)

*Percentages are weighted to yield population estimates
**Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table 36

GRADES

Ethnic Group	N	As or Mostly As and Bs X*(SE)**	Bs or Mostly Bs and Cs X(SE)	Cs or Mostly Cs and Ds X(SE)	Ds and Below X(SE)
Grade 7					
Mexican Americans	1430	26.9(1.7)	38.8 (1.9)	25.8(1.8)	8.5(1.3)
Puerto Ricans	556	32.9(4.8)	43.4 (2.8)	18.5(3.7)	5.1(2.6)
Cubans	311	29.5(7.0)	39.1 (3.0)	21.8(3.4)	9.6(5.4)
Other Hispanics	603	31.3(3.3)	38.9 (3.6)	26.6(3.8)	3.1(1.7)
Asians	563	69.9(3.6)	22.3 (3.0)	6.7(1.7)	1.0(0.4)
Native Americans[1]	145	16.6(5.1)	46.6(11.4)	24.8(4.0)	12.0(3.5)
TOTAL[2]	3744	35.9(2.3)	36.5 (1.5)	21.3(1.2)	6.3(0.9)
Grade 11					
Mexican Americans	894	22.3(2.4)	44.0(1.9)	30.6(2.0)	3.1(0.7)
Puerto Ricans	380	17.1(2.0)	53.7(2.9)	24.4(2.8)	4.8(1.9)
Cubans	524	28.4(6.7)	46.2(3.9)	22.2(2.6)	3.2(2.0)
Other Hispanics	480	22.1(3.1)	58.4(4.0)	17.0(2.0)	2.4(9.9)
Asians	673	53.6(4.5)	37.3(3.5)	8.2(1.6)	0.9(0.4)
Native Americans[1]	106	16.4(1.8)	52.2(4.8)	28.4(4.6)	3.0(1.2)
TOTAL	3094	31.4(1.8)	45.5(1.5)	20.5(1.1)	2.6(0.4)

*Percentages are weighted to yield population estimates.
**Standard error in parentheses
[1] Interpret with caution, standard errors are poorly estimated.
[2] Totals in this table represent responses of all subjects who identified themselves either as Asian, Native American or Hispanic. It includes Hispanic informants who did not identify their Hispanic subgroup.

Table 37

MATHEMATICS ACHIEVEMENT

Ethnic Group	Grade 3 (18 Items)	Grade 7 (22 Items)	Grade 11 (28 Items)
Special Study Sample			
Mexican American	49.4*(1.4)**	51.6(1.2)	56.0(0.9)
Puerto Rican	46.9 (2.2)	48.4(1.5)	55.3(1.3)
Cuban	46.8 (3.1)	51.7(2.6)	66.3(2.5)
Other Hispanic	51.3 (1.3)	51.4(1.7)	60.3(1.4)
Asian	65.3 (1.9)	69.9(1.4)	76.1(1.2)
Native American[1]	44.8 (4.3)	44.1(5.7)	57.8(2.0)
Regular NAEP Sample			
White	58.8(.51)	58.9(.52)	68.9(.48)
Black	46.2(.99)	47.2(.8ᶜ)	52.1(.98)
20% of pooled SD	3.98	3.82	3.78

*Weighted means percent correct, based on 18 items at grade 3; 22 items at grade 7; and 28 items at grade 11. Comparison cannot be made across grades in this table. Each grade had different items and the sets of items were not equated.
**Standard Errors in parentheses
1 Interpret with caution, standard errors are poorly estimated.

groups at all grades. White students, although performing less well than Asians, outperform Black students at all three grade levels, and significantly outperform all Hispanic groups at all grades, with the exception of Cuban eleventh graders.

Barring the results for Asian students, none of the group differences in grade 3 or grade 7 is significant. However, in grade 11, Cuban students are superior to all the other Hispanic groups and Other Hispanic students earn higher mean mathematics scores than do Puerto Rican or Mexican American students. There is no difference between Puerto Rican and Mexican American students in mathematics performance at the eleventh grade.

Reading Performance

Table 38 presents the data on the reading assessment for grade 7. Although there are no significant differences among the performance of the Hispanic students, the Asian students performed significantly better than all of those groups on the seventh grade reading assessment items.

Because we used imputed scores that are on the same scale as the regular NAEP assessment, we were able to compare the reading data from this special study with the national findings for White and Black students. Asians in the special sample scored significantly higher in reading than did the White or Black students in the regular assessment. The White students scored higher than Black students and all the Hispanic subgroups in the special assessment. Finally, there were no significant differences in performance among the Hispanic subgroups in the special study.

Summary of Achievement Data

The special study NAEP achievement data indicate that as a rule:

o Asian students consistently report getting high grades.

o Asian students at all grades score significantly better than other groups on the mathematics assessment.

o At grade 3 and 7, there are no differences among the Hispanic groups, but at grade 11, the Other Hispanic and Cuban students out perform the Mexican American and Puerto Rican students.

o The reading data at grade 7 indicate that Asian students in the special study perform significantly better than all the other comparison groups in the special sample and than the White and Black students in the NAEP assessment. Finally, the Hispanic groups in the special sample were not significantly different in reading performance from Black students in the regular NAEP.

80

Table 38

READING ACHIEVEMENT OF SEVENTH GRADERS

Ethnic Group	Reading Score	SD
Special Study Sample		
Mexican American	46.0*(0.6)**	8.1
Puerto Rican	44.4 (1.3)	8.2
Cuban	45.4 (0.8)	8.8
Other Hispanic	46.3 (1.0)	9.3
Asian	52.5 (0.8)	8.2
Native American[1]	43.9 (2.6)	8.8
Regular NAEP Sample		
White	50.3 (0.2)	7.6
Black	45.2 (0.3)	7.1
20% of pooled SD		1.6

* Imputed weighted scores
** Standard errors in parentheses
[1] Interpret with caution, standard errors are poorly estimated.

CHAPTER FIVE

Findings from the Relational Analysis

The relational analysis examines the regressions of selected dependent variables on hypothesized explanatory variables. These regressions are ordered in a path analytic framework. The "causal" ordering of the regressions is in part based on logical grounds since the data are cross-sectional, and in part on previous research findings. That is, in addition to logical arguments, the causal ordering reflects to a considerable extent the thinking and findings of researchers working in the educational attainment area (Blau & Duncan, 1967; Coleman et al, 1981; Hauser, Tsai & Sewell, 1983; Rock et al, 1985, 1986; Sewell, Haller & Ohlendorf, 1970).

Thus, the path model represents a theoretical model that is at best a rough approximation of how things work. If the data are consistent with the model, researchers can claim no "proof" for their theories, only that the model has passed a preliminary screening test. As a given model passes successively more stringent validity tests, it becomes more promising as an approximation of how things work. The more stringent tests should include replication with independent samples and the introduction of other relevant explanatory variables that, if found to be consistent with the data, would point to alternative explanations. Only models that survive such validity tests — generalization across samples and alternative variable specifications — can be taken seriously as having the potential for identifying the "true" underlying causal structure.

The relational analysis presented here is an exploration of a rather general model that attempts first to explain variation in non-English language use and then examines how language use and other variables may affect students' attitudes and behaviors. This analysis may best be thought of as the first step in an explanatory model relating language use to ethnicity and other background variables and then in turn using language use as one explanatory variable of student achievement.

Proposed Model

Figure 1 presents our hypothesized explanatory model. The model involves general categories of variables involved in the analysis. Demographic variables are thought to influence language use and home education support variables. These three categories of variables are then thought to influence school related attitudes. School related variables, along with the previous variables are thought to influence school behaviors. In addition, all these variables, along with school characteristics which are assumed to be related to demographics and are thought to influence achievement.

Figure 1

HYPOTHESIZED EXPLANATORY MODEL
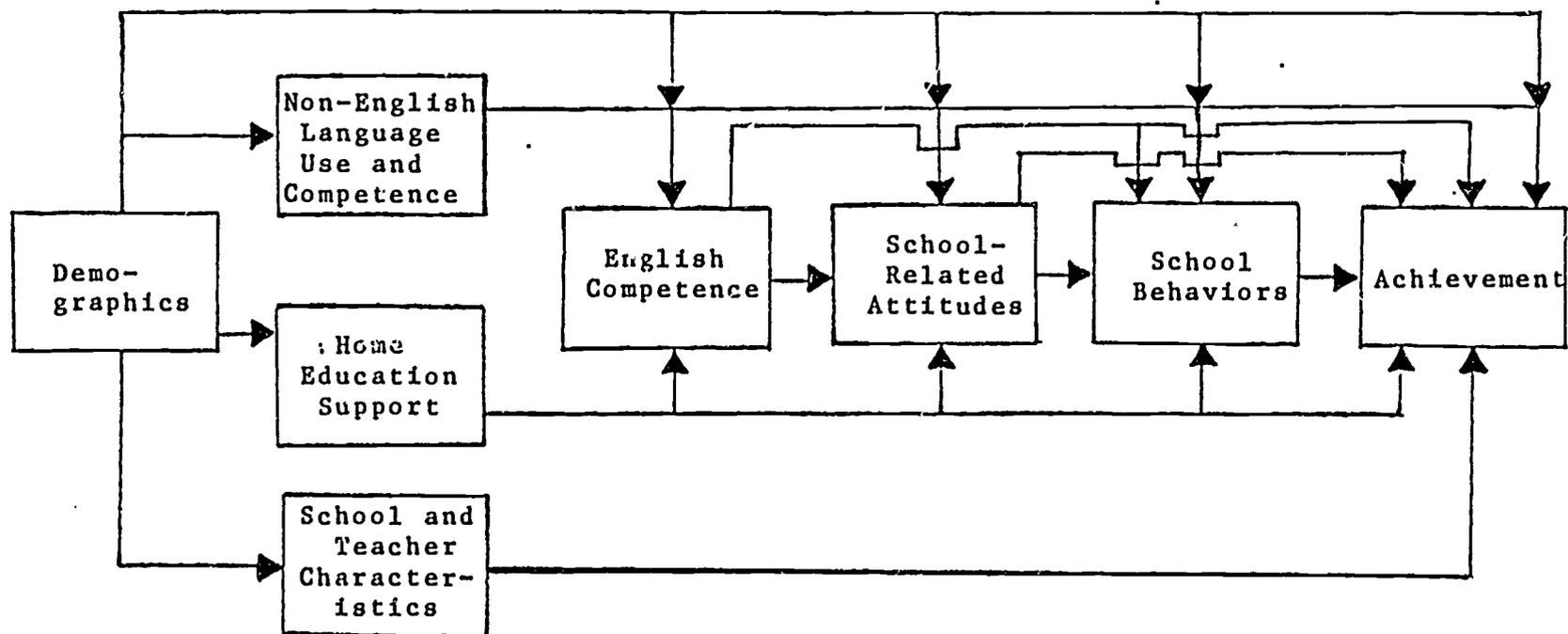
The variables that we have included under each of the general categories in our model were selected after inspecting the correlation coefficients of all the items in the data base. The subset of variables that were selected for the relational analysis met two criteria: 1. they were substantively and/or logically relevant to the categories of interest as defined in the statement of purpose, and 2. they showed at least one statistically significant relationship with either the intermediate or final outcomes. Furthermore, when pairs of items or factors affecting achievement were highly correlated, only one was selected to minimize problems of interpretation resulting from collinearity. Thus, while non-English language use in the home and non-English language use outside the home were both non-trivially correlated with achievement, only the use of non-English in the home was included in our path analysis.

The demographic variables appear on the far left and are considered exogenous variables, that is, they are assumed to be "givens" whose causes, if known, are outside the system. While the arrows describe what are to be considered the independent and dependent variables in a particular regression equation, no claim is made that the ensuing regression estimates are indeed the structural parameters in a causal scheme. The regression equation simply provides a convenient way of summarizing and comparing the relative importance of various explanatory variables.

The fact that a demographic characteristic, e.g., ethnicity, may be an explanatory variable for virtually all variables in the model simply implies that ethnic group membership may carry with it a pattern of language use, attitudes, behaviors and experiences with minority status that in turn may be related to achievement.

The model assumes that school-related attitudes are causally prior to school behaviors and achievement. A more likely causal scheme would be a feedback loop between school related behaviors and attitudes, i.e., a two-way causal mechanism. Unfortunately, the coefficients in such models are very difficult to estimate reliably because the necessary instrumental variables are rarely available. We have made the assumption that if a causal relationship exists between school related attitudes and behaviors, the predominant direction is from attitude to behavior.

Figure 2 presents the variables at each grade that were included in our path analysis.

The Analysis Plan

From a policy viewpoint, it is of considerable interest to see how much of the ethnic group differences in school grades and tested achievement can be explained by differences in language background, student attitudes, and school related behaviors as well as by school characteristics. Thus, we posed the following question: Does ethnic group membership only have an indirect effect on grades and tested achievement -- that is, does ethnicity only affect grades and tested achievement "working through" the home support, language variables, and school process and behavior variables?

Figure 2

Variables Used in Path Analysis

	Grades		
	3	7	11

Demographics

	3	7	11
Mother in Home	x	x	x
Sex	x	x	x
Ethnic Group	x	x	x
Parent Education	x	x	x

Non-English Language Variables

	3	7	11
Language Use in Home	x	x	x
Competence in Minority Language	N/A	x	x

Home Educational Support Systems

	3	7	11
Attended Preschool	x	x	x
Literacy Related Items in Home	x	x	x
Family Asks About School Work	x	x	x
Attendance in Private School	x	x	x
Parental Educational Aspirations for the Child	N/A	x	x

English Competence

	3	7	11
English Competence	N/A	x	x

School Related Attitudes

	3	7	11
Locus of Control	N/A	x	x
Like to go to School	x	N/A	N/A
Attitude toward School	N/A	x	x
Like to Read	x	N/A	N/A
Attitude toward Reading	N/A	x	x

School Behaviors

	3	7	11
Time Spent on Homework	x	x	x
Math Algebra	N/A	x	N/A
Highest Level of Math Taken	N/A	N/A	x
Number of Science Courses	N/A	N/A	x

School Characteristics

	3	7	11
Poverty Level (% free lunch)	x	x	x
Percent Minority	x	x	x
ESL/Bilingual Personnel	x	x	x

Achievement

	3	7	11
Grades	N/A	x	x
Math Scores	x	x	x
Reading Performance	N/A	x	N/A

To address this question, variations of the general model described above are estimated for the total sample within each grade level (i.e., pooling across ethnic groups). The total sample relational analysis is primarily concerned with contrasts between Asians and the other ethnic groups regarding:

o Language use

o Parental educational support behaviors, including the possession of literacy related items in the home.

o School related attitudes, such as attitudes towards school and attitudes towards reading.

o School behaviors, such as amount of homework and number and kinds of courses taken.

o Grades and tested achievement in mathematics and reading (grade 7 only).

But even if the educational process variables show important relationships with the educational outcomes in the total sample, the question remains whether these educational process variables function in a similar manner for all ethnic groups. For example, is a strong educational support system in the home as important for Asians' educational achievement as for Mexican Americans? To address this question of group differences in regard to the process variables, we ran the path model separately for each ethnic group at each age level. One must be very careful, however, about over interpreting group differences if they are not replicated across grade. There are simply too many possibilities for capitalizing on sampling error when there are contrasts between six groups on approximately fifteen equations at each of three grade levels.

Results

In this section, results are presented in tables that include both the total group regressions (with dummy codes for the various ethnic groups) and the within group regressions. In the total group regressions, the contrast group is the Asians.[18] When the regression coefficient for a particular

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[18] The Asians were selected as the contrast group because the descriptive data revealed that they have a pattern of achievement on the NAEP test items that is consistently higher than the other groups in this study. The regression attempts to explain this difference by controlling for background and process variables. That is, by contrasting all other groups with the Asians using "Dummy" variables we can statistically test whether mean performance differences remain after controlling for possible differences between Asians and other groups on background and process variables. Black and White students were not included in this analysis because they did not receive the special language minority booklet and consequently many of the critical language and attitude variables were not available for those students.

86

ethnic group is negative, it indicates that that group's mean on the
dependent variable is less than that of the Asian group. Conversely, if the
regression coefficient is positive, this indicates that the ethnic group has
a higher mean on the dependent variable than the Asian group. Whether these
mean differences are significant at an alpha of .05 (two tailed) or less is
indicated by an asterisk placed alongside the regression weight. The
standard errors used in the statistical tests assume a sample design effect
of approximately 2 (i.e. the present sample design is approximately half as
efficient as a random sample).

Each table[19] presents both the standardized regression weights and the
raw score weights along with their standard errors and the associated t
tests. When the term "significant relationship" is used in the text, it
simply means that a statistically significant relationship has been found
between a given explanatory variable and the dependent variable.

In general we put more emphasis in terms of interpretation on the
total group regressions because they are likely to be more stable due to the
larger sample size. Within group regressions are examined for between group
differences that are replicated across grade cohorts and that have
regressions weights with the same sign as their simple correlation with the
dependent variable being analyzed. Although we recognize the possibility of
suppressor variables, we also recognize the more likely possibility of
distortions in signs of the regression coefficients due to excessive
collinearities. This type of result is, of course, more likely to occur in
the smaller ethnic group regressions. As in the descriptive section,
because of the relatively small size of the Native American sample, we have
refrained from discussing the data here.

Language Variables

The relationship of the background variables and the language variables
is examined here. Two variables are considered: amount of non-English used
in the home and self-assessed competence in non-English language.

Language Use in the Home

Tables 39 - 41 present the results of the regressions of amount of
native language use in the home on the demographic variables for grades 3, 7
and 11 respectively.

Third Grade. Inspection of the total group regression weights in grade
3 indicates that, with the exception of the Cubans, who used Spanish more
frequently, there were no significant differences between the Asians and the
other groups with respect to the amount of native language spoken in the
home. In the total group, students from homes characterized by higher
parental education tended to speak their native language less than those who

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[19] Appendix D includes the coding for the variables discussed in the
relational analysis.

came from homes with lower levels of parental education. Inspection of the within group regression weights suggests that higher parental education and mother living at home has a greater impact on reducing native language use in the home for Asians than these variables have for the other groups.(Table 39)

Seventh Grade. The similar analysis of the total group of seventh graders suggests that Mexican Americans spoke a non-English language in the home significantly less than did the Asians (Table 40). Conversely, Cubans spoke their native language in the home more than did the Asians.

As in the case of the third graders, parental education was negatively related to the amount of native language spoken in the home. Inspection of the within group regression weights suggests that parental education level has a greater effect on native language use for all groups except the Asians.

Eleventh Grade. The analysis of the total group results for the eleventh graders (Table 41) suggests that, with the exception of the Cubans, who spoke more, and the Mexican Americans, who spoke less, the remaining ethnic groups all report speaking their native language in the home with about the same frequency as Asians. The within-group equations suggest that parental education levels had a relatively consistent negative relationship with the amount of native language spoken for all groups except Puerto Ricans.

Summary of Language Use Results. The above analysis relating demographic characteristics to native language use in the home suggests that there was little difference in the reported frequency of native language use in the home between Asians and the remaining groups in grades 3 and 7. The one exception was that Cubans reported speaking their native language more. But, in grade 7 and 11, Mexican Americans report that they spoke their native language in the home less than did the Asians. As in grades 3 and 7, the eleventh grade Cubans report speaking their native language in the home more than the Asians. In general, the higher the parental education level the less non-English language was used in the home.

Competence in Minority Language

Third Grade. This information was not available for third graders.

Seventh Grade. The total group regression coefficients presented in Table 42 suggest that Puerto Rican, Cuban and Other Hispanic seventh graders report more competence in their native language than do their Asian counterparts. There is no relationship between parental education or mother living at home and minority language competence. Inspection of the within group regressions, however, suggests that there is a negative relationship (but not always significant) between parental education and minority language competence for all Hispanic groups. Conversely, the Asians have a positive relationship between parental education and minority language competence.

Table 39

GRADE 3

MINORITY LANGUAGE SPOKEN AT HOME

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

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	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135							
MEXICAN	-0.06							-1.65						
P RICAN	-0.04							-1.30						
CUBAN	0.05*							2.14*						
OTH HISP	-0.02							-0.64						
NATIVEAM	-0.20*							-6.80*						
PARED	-0.08*	-0.08*	0.02	-0.13	-0.21*	-0.26*	0.06	-3.41*	-2.07*	0.39	-1.60	-3.99*	-3.06*	0.41
M HOME	-0.01	0.01	-0.03	0.29*	0.00	-0.21*	-0.03	-0.53	0.18	-0.48	3.61*	0.02	-2.50*	-0.25
SEX=M	-0.06*	-0.08	-0.06	0.19*	-0.01	-0.12	-0.10	-2.34*	-1.94	-1.06	2.35*	-0.25	-1.38	-0.81
MULT R	0.223	0.121	0.069	0.334	0.207	0.321	0.115							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.42							0.26						
P RICAN	-0.45							0.34						
CUBAN	1.30*							0.61						
OTH HISP	-0.20							0.31						
NATIVEAM	-2.36*							0.35						
PARED	-0.25*	-0.25*	0.06	-0.37	-0.62*	-1.08*	0.15	0.07	0.12	0.15	0.23	0.15	0.35	0.37
M HOME	-0.12	0.07	-0.22	2.60*	0.01	-1.90*	-0.23	0.22	0.38	0.45	0.72	0.51	0.76	0.94
SEX=M	-0.39*	-0.54	-0.37	1.25*	-0.09	-0.82	-0.61	0.17	0.28	0.35	0.53	0.35	0.59	0.75

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

102

103

Table 40

GRADE 7

MINORITY LANGUAGE SPOKEN AT HOME

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.20*							-6.50*						
P RICAN	-0.02							-0.81						
CUBAN	0.11*							4.94*						
OTH HISP	0.01							0.45						
NATIVEAM	-0.15*							-6.16*						
PARED	-0.20*	-0.26*	-0.25*	-0.38*	-0.19*	0.00	-0.20	-8.84*	-7.66*	-4.68*	-5.24*	-3.67*	-0.08	-1.78
M HOME	0.03	0.06	0.07	0.10	-0.08	0.03	0.01	1.49	1.73	1.31	1.44	-1.44	0.51	0.07
SEX=M	-0.01	-0.04	0.04	-0.12	0.17*	-0.06	-0.06	-0.70	-1.06	0.72	-1.68	3.13*	-1.01	-0.56
MULT R	0.292	0.272	0.265	0.385	0.246	0.067	0.209							

| | RAW REGRESSION WEIGHT | | | | | | | STANDARD ERROR OF WEIGHT | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-2.49*							0.38						
P RICAN	-0.46							0.57						
CUBAN	4.06*							0.82						
OTH HISP	0.22							0.49						
NATIVEAM	-3.48*							0.56						
PARED	-1.11*	-1.51*	-1.25*	-1.57*	-1.01*	-0.03	-1.15	0.13	0.20	0.27	0.30	0.28	0.38	0.65
M HOME	0.72	1.36	1.71	2.03	-1.50	0.70	0.15	0.49	0.79	1.30	1.41	1.04	1.37	2.09
SEX=M	-0.18	-0.44	0.43	-1.21	1.99*	-0.73	-0.81	0.26	0.41	0.60	0.72	0.64	0.73	1.44

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 41

GRADE 11

MINORITY LANGUAGE SPOKEN AT HOME

DIRECT EFFECTS OF EXPLANATORY VARIABLES BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.20*							-6.72*						
P RICAN	-0.03							-0.95						
CUBAN	0.14*							5.97*						
OTH HISP	-0.05							-1.78						
NATIVEAM	-0.24*							-10.05*						
PARED	-0.24*	-0.33*	-0.24*	-0.08	-0.21*	-0.14*	-0.25	-9.35*	-7.85*	-3.75*	-1.38	-3.48*	-2.76*	-1.93
M HOME	-0.07*	-0.11*	0.10	-0.07	-0.08	-0.09	-0.07	-3.25*	-2.59*	1.62	-1.25	-1.32	-1.79	-0.58
SEX=M	0.02	-0.01	-0.08	-0.05	-0.02	0.10	-0.04	0.68	-0.36	-1.33	-0.77	-0.30	1.93	-0.32
MULT R	0.357	0.348	0.276	0.126	0.210	0.194	0.253							

| | RAW REGRESSION WEIGHT | | | | | | | STANDARD ERROR OF WEIGHT | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-2.82*							0.42						
P RICAN	-0.54							0.57						
CUBAN	4.59*							0.77						
OTH HISP	-0.89							0.50						
NATIVEAM	-6.98*							0.69						
PARED	-1.39*	-2.05*	-1.23*	-0.30	-1.29*	-1.05*	-1.50	0.15	0.26	0.33	0.22	0.37	0.38	0.78
M HOME	-1.81*	-2.53*	2.22	-2.01	-1.78	-2.26	-2.16	0.56	0.98	1.37	1.61	1.35	1.26	3.69
SEX=M	0.21	-0.19	-0.94	-0.37	-0.24	1.35	-0.53	0.30	0.53	0.71	0.48	0.82	0.70	1.68

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

106

107

Table 42

GRADE 7

OTHER LANGUAGE COMPETENCY

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	0.03							0.94						
P RICAN	0.10*							3.98*						
CUBAN	0.16*							7.12*						
OTH HISP	0.10*							3.94*						
NATIVEAM	-0.11*							-4.24*						
PARED	-0.02	-0.06	-0.11*	-0.15	-0.10	0.14*	-0.07	-1.04	-1.75	-2.03*	-1.90	-1.75	2.40*	-0.65
M HOME	0.00	0.04	0.10	0.17*	0.01	-0.14*	-0.09	0.04	1.19	1.75	2.36*	0.20	-2.45*	-0.78
SEX=M	-0.02	-0.02	-0.13*	-0.09	0.07	-0.02	0.02	-0.83	-0.70	-2.37*	-1.16	1.31	-0.32	0.20
MULT R	0.238	0.082	0.188	0.235	0.112	0.197	0.109							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.19							0.20						
P RICAN	1.19*							0.30						
CUBAN	3.05*							0.43						
OTH HISP	1.01*							0.26						
NATIVEAM	-1.25*							0.29						
PARED	-0.07	-0.19	-0.30*	-0.38	-0.28	0.41*	-0.18	0.07	0.11	0.15	0.20	0.16	0.17	0.28
M HOME	0.01	0.51	1.25	2.24*	0.12	-1.51*	-0.71	0.25	0.43	0.72	0.95	0.61	0.62	0.92
SEX=M	-0.12	-0.16	-0.78*	-0.57	0.49	-0.11	0.13	0.14	0.22	0.33	0.49	0.37	0.33	0.63

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Eleventh Grade. The total group regression equation results replicate the seventh grade findings. (Table 43) All the Hispanic groups except the Mexican Americans report greater competence in their native language than do the Asians. A minor difference between the seventh and eleventh grade is the fact that mother living at home has a significant negative relationship with competence in one's native language. Inspection of the within group regressions replicate the Asian finding from the seventh grade, i.e., the positive significant relationship between parental education and competence in one's native language.

Summary of Non-English Language Competence Results. Asians and Hispanics differ with respect to their reported competence in their non-English language. In addition, Mexican Americans and the remaining Hispanic groups differ with respect to competence in Spanish. In general Asians report about the same level of non-English language use in the home as other Hispanic groups with the exception of Cubans, but they report that they are less competent in their home language than the Hispanic groups with the exception of Mexican Americans. Although not always statistically significant, parental education was negatively related to minority language competence.

Home Educational Support Systems

The relationship of demographic variables to each of the five variables that make up the Home Education Support System category are presented here. These five variables are measures of behaviors and belief systems of parents: sending the child to preschool; having literacy related materials around the house; asking the child about homework; sending the child to a private school; and, aspiring for high levels of education for the child.

Attended Preschool

Third Grade. Inspection of the pooled (total sample) regression weights in Table 44 reveals that Mexican Americans, Puerto Ricans and Other Hispanics are less likely to attend preschool than are the Asians. Partial regression weights associated with mother living at home and level of parental education are positively related to attendance at preschool. Male children are less likely to have attended preschool than females.

The within ethnic group regression weights suggest that parental education level has a relatively strong positive relationship with attending preschool for all groups but Asians. For the latter group, mother living at home showed the stronger positive relationship with attendance at preschool. But, at grade three, the Asian sample was relatively small so the apparent difference may not be very stable.

Seventh Grade. The total group partial regression weights for the seventh graders presented in Table 45 suggest little differences between Asians, Mexican Americans, Puerto Ricans and Other Hispanics with respect to preschool attendance. Cubans report that they are somewhat less likely to

Table 43

GRADE 11

OTHER LANGUAGE COMPETENCY

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	0.01							0.39						
P RICAN	0.14*							5.20*						
CUBAN	0.16*							6.52*						
OTH HISP	0.09*							3.58*						
NATIVEAM	-0.17*							-6.90%						
PARED	0.03	-0.06	0.08	0.05	0.00	0.13*	-0.09	1.32	-1.35	1.27	0.91	-0.05	2.61*	-0.68
M HOME	-0.05*	-0.09*	0.00	0.10	-0.02	-0.04	-0.02	-2.15*	-2.13*	0.03	1.73	-0.32	-0.85	-0.13
SEX=M	-0.03	-0.04	-0.23*	-0.06	0.04	0.01	0.01	-1.25	-0.84	-3.58*	-0.94	0.70	0.16	0.09
MULT R	0.292	0.117	0.244	0.129	0.051	0.139	0.091							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.08							0.22						
P RICAN	1.52*							0.29						
CUBAN	2.59*							0.40						
OTH HISP	0.93*							0.26						
NATIVEAM	-2.47*							0.36						
PARED	0.10	-0.20	0.22	0.13	-0.01	0.47*	-0.26	0.08	0.15	0.17	0.15	0.20	0.18	0.38
M HOME	-0.62*	-1.16*	0.02	1.83	-0.23	-0.51	-0.23	0.29	0.54	0.72	1.06	0.71	0.59	1.79
SEX=M	-0.19	-0.25	-1.34*	-0.30	0.30	0.05	0.07	0.16	0.30	0.37	0.32	0.43	0.33	0.82

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

111

Table 44

GRADE 3

WENT TO PRESCHOOL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

94

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135							
MEXICAN	-0.15*							-4.03*						
P RICAN	-0.16*							-5.34*						
CUBAN	-0.01							-0.49						
OTH HISP	-0.14*							-4.28*						
NATIVEAM	0.01							0.39						
PARED	0.14*	0.12*	0.16*	0.34*	0.26*	0.06	-0.04	5.60*	3.01*	2.94*	4.16*	5.06*	0.74	-0.29
M HOME	0.06*	0.01	0.06	-0.06	-0.02	0.23*	0.39*	2.70*	0.27	1.16	-0.79	-0.44	2.70*	3.08*
SEX=M	-0.07*	-0.07	-0.09	-0.02	-0.08	-0.04	-0.09	-2.79*	-1.85	-1.67	-0.21	-1.48	-0.45	-0.75
MULT R	0.249	0.134	0.193	0.328	0.280	0.247	0.386							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.15*							0.04						
P RICAN	-0.26*							0.05						
CUBAN	-0.04							0.09						
OTH HISP	-0.19*							0.04						
NATIVEAM	0.02							0.05						
PARED	0.06*	0.05*	0.07*	0.14*	0.11*	0.04	-0.02	0.01	0.02	0.02	0.03	0.02	0.05	0.05
M HOME	0.09*	0.01	0.08	-0.08	-0.03	0.29*	0.42*	0.03	0.05	0.07	0.11	0.07	0.11	0.14
SEX=M	-0.07*	-0.07	-0.09	-0.02	-0.08	-0.04	-0.08	0.02	0.04	0.05	0.08	0.05	0.08	0.11

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

114

113

Table 45

GRADE 7

WENT TO PRESCHOOL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	0.06							1.75						
P RICAN	0.03							1.13						
CUBAN	-0.05*							-2.04*						
OTH HISP	0.02							0.73						
NATIVEAM	0.08*							3.28*						
PARED	0.19*	0.16*	-0.12*	0.18*	0.31*	0.25*	-0.08	7.84*	4.67*	-2.16*	2.35*	6.04*	4.58*	-0.69
M HOME	0.02	0.05	0.12*	0.15*	-0.12*	0.03	-0.08	0.94	1.44	2.24*	1.99*	-2.41*	0.51	-0.72
SEX=M	-0.03	-0.10*	0.05	0.08	-0.10	0.06	0.09	-1.50	-2.83*	0.98	1.10	-1.90	1.16	0.81
MULT R	0.195	0.190	0.177	0.226	0.348	0.265	0.137							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.06							0.03						
P RICAN	0.05							0.05						
CUBAN	-0.14*							0.07						
OTH HISP	0.03							0.04						
NATIVEAM	0.15*							0.05						
PARED	0.08*	0.08*	-0.05*	0.07*	0.14*	0.13*	-0.03	0.01	0.02	0.02	0.03	0.02	0.03	0.05
M HOME	0.04	0.10	0.27*	0.28*	-0.20*	0.05	-0.11	0.04	0.07	0.12	0.14	0.08	0.10	0.16
SEX=M	-0.03	-0.10*	0.05	0.08	-0.10	0.06	0.09	0.02	0.03	0.06	0.07	0.05	0.06	0.11

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

115

have attended preschool than Asians. The most important explanatory
variable for preschool attendance, however, is parental education and not
ethnic group membership. Inspection of the within group regressions
suggests that either parental education and/or mother living at home had
significant positive relationships with attendance at preschool.

The erratic pattern of these within group regression weights suggests,
among other explanations, that the question concerning preschool may not
have always been interpreted in the same way by all respondents. For
example, did some respondents consider attending kindergarten the same as
preschool?

Eleventh Grade. Again, we see from inspection of the total group
partial regressions in Table 46 that the most important explanatory variable
for preschool attendance is parental education and not ethnic group
membership. In the third and seventh grades some of the Asian versus other
ethnic group comparisons were as important as was the parental education.
Mother living at home was also a significant predictor, but of lesser
importance than parental education, or preschool attendance for eleventh
graders. The within ethnic group regressions show a relatively stable
pattern of coefficients, with parental education being the most consistent
predictor of attendance at preschool.

Literacy Related Items in the Home

Third Grade. There are relatively large differences favoring the
Asians when counts of reading materials in the homes of the Asian students
are compared to the Mexican Americans or Puerto Ricans. These results are
presented in Table 47. Cubans and other Hispanics also report having
significantly fewer reading items in the home. As expected, parental
education has a significant relationship with reading materials in the home
independent of ethnic group membership. The within group regression
equations tend to show that parental education is a more consistent
predictor of reading materials in the home than sex of child or mother
living in the home. An anomaly here is that the multiple correlation for
Puerto Ricans is virtually zero suggesting that either third grade Puerto
Ricans did not understand the question or the model is incompletely
specified for Puerto Ricans.

Seventh Grade. Unlike the third grade, there are virtually no
differences among ethnic groups on counts of reading materials in the home.
(Table 48) The most important predictor is parental education and to a
lesser degree mother living at home. The within group equations essentially
replicate this pattern of relative importance of the two predictors —
parental education and mother living at home.

Eleventh Grade. The eleventh grade results presented in Table 49 are
essentially a replication of the seventh. There is once again no difference
among ethnic groups on counts of reading materials in the home. Both the
total and the within group regressions suggest that the most important
predictor is parental education, with mother living at home taking a much
lesser role.

Table 46

GRADE 11

WENT TO PRESCHOOL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	0.03							0.97						
P RICAN	0.06*							2.05*						
CUBAN	-0.05							-1.93						
OTH HISP	0.03							0.97						
NATIVEAM	0.04							1.59						
PARED	0.22*	0.15*	0.16*	0.17*	0.12	0.30*	0.25*	8.26*	3.53*	2.43*	2.86*	1.94	6.22*	1.97*
M HOME	0.07*	0.01	-0.04	0.05	0.17*	0.12*	0.17	3.16*	0.12	-0.55	0.87	2.72*	2.53*	1.39
SEX=M	-0.04	0.02	-0.03	-0.04	-0.06	-0.12*	0.08	-1.71	0.52	-0.44	-0.66	-0.97	-2.47*	0.63
MULT R	0.228	0.158	0.166	0.181	0.199	0.345	0.298							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.03							0.03						
P RICAN	0.09*							0.04						
CUBAN	-0.11							0.06						
OTH HISP	0.04							0.04						
NATIVEAM	0.09							0.05						
PARED	0.09*	0.07*	0.07*	0.07*	0.05	0.16*	0.11*	0.01	0.02	0.03	0.03	0.03	0.03	0.06
M HOME	0.14*	0.01	-0.07	0.16	0.27*	0.22*	0.38	0.04	0.08	0.13	0.18	0.10	0.09	0.28
SEX=M	-0.04	0.02	-0.03	-0.04	-0.06	-0.12*	0.08	0.02	0.04	0.07	0.05	0.06	0.05	0.13

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 47

GRADE 3

ITEMS IN HOME

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

98

STANDARDIZED REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135
MEXICAN	-0.23*						
P RICAN	-0.18*						
CUBAN	-0.06*						
OTH HISP	-0.09*						
NATIVEAM	-0.06						
PARED	0.15*	0.16*	-0.04	0.36*	0.24*	0.16	0.20
M HOME	0.03	0.01	-0.03	-0.01	0.09	0.12	0.11
SEX=M	0.07*	0.11*	-0.01	-0.04	0.01	0.14	0.05
MULT R	0.274	0.199	0.048	0.359	0.248	0.211	0.259

T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-6.29*						
P RICAN	-6.05*						
CUBAN	-2.21*						
OTH HISP	-2.96*						
NATIVEAM	-1.88						
PARED	6.39*	3.94*	-0.65	4.54*	4.69*	1.80	1.48
M HOME	1.46	0.26	-0.47	-0.16	1.78	1.44	0.80
SEX=M	2.87*	2.72*	-0.13	-0.46	0.11	1.58	0.43

RAW REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.64*						
P RICAN	-0.82*						
CUBAN	-0.53*						
OTH HISP	-0.36*						
NATIVEAM	-0.26						
PARED	0.19*	0.19*	-0.04	0.40*	0.28*	0.23	0.22
M HOME	0.13	0.04	-0.10	-0.04	0.35	0.39	0.30
SEX=M	0.19*	0.31*	-0.02	-0.09	0.02	0.34	0.13

STANDARD ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.10						
P RICAN	0.14						
CUBAN	0.24						
OTH HISP	0.12						
NATIVEAM	0.14						
PARED	0.03	0.05	0.07	0.09	0.06	0.13	0.15
M HOME	0.09	0.15	0.21	0.28	0.20	0.27	0.37
SEX=M	0.07	0.11	0.16	0.20	0.13	0.21	0.29

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 48

GRAOE 7

ITEMS IN HOME

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDAROIZEO REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	0.00													
P RICAN	0.04							-0.04						
CUBAN	0.00							1.75						
OTH HISP	0.01							-0.18						
NATIVEAM	-0.01							0.55						
								-0.52						
PAREO	0.27*	0.23*	0.25*	0.31*	0.23*	0.24*	0.37*	11.76*	6.86*	4.74*	4.16*	4.33*	4.38*	3.61*
M HOME	0.14*	0.13*	0.03	0.00	0.11*	0.22*	0.19	6.40*	3.85*	0.65	-0.06	1.99*	3.99*	1.80
SEX=M	-0.02	-0.01	-0.14*	0.12	-0.05	0.01	-0.04	-0.98	-0.15	-2.54*	1.56	-0.97	0.11	-0.37
MULT R	0.300	0.263	0.301	0.303	0.241	0.315	0.399							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.00							0.08						
P RICAN	0.20							0.12						
CUBAN	-0.03							0.17						
OTH HISP	0.05							0.10						
NATIVEAM	-0.06							0.11						
PAREO	0.30*	0.30*	0.27*	0.29*	0.25*	0.30*	0.39*	0.03	0.04	0.06	0.07	0.06	0.07	0.11
M HOME	0.63*	0.67*	0.18	-0.02	0.42*	0.96*	0.62	0.10	0.17	0.28	0.33	0.21	0.24	0.34
SEX=M	-0.05	-0.01	-0.33*	0.26	-0.13	0.01	-0.09	0.05	0.09	0.13	0.17	0.13	0.13	0.24

* STATISTICS ARE BASEO ON PROPORTIONALLY-WEIGHTEO DATA, SCALEO-OOWN TO N/2 (DESIGN EFFECT=2).

Table 49

GRADE 11

ITEMS IN HOME

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT / T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	0.04													
P RICAN	-0.02							1.38						
CUBAN	0.01							-0.77						
OTH HISP	0.02							0.41						
NATIVEAM	0.05							0.60						
								1.95						
PARED	0.26*	0.25*	0.22*	0.30*	0.21*	0.18*	0.19	9.62*	5.91*	3.39*	5.28*	3.57*	3.66*	1.45
M HOME	0.08*	0.10*	0.18*	0.06	0.02	0.07	-0.04	3.27*	2.30*	2.79*	1.04	0.36	1.30	-0.29
SEX=M	-0.05*	-0.10*	0.05	-0.04	-0.12*	-0.03	0.01	-2.28*	-2.27*	0.78	-0.73	-2.02*	-0.55	0.11
MULT R	0.267	0.287	0.282	0.310	0.231	0.198	0.192							

RAW REGRESSION WEIGHT / STANDARD ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.10							0.07						
P RICAN	-0.07							0.10						
CUBAN	0.05							0.13						
OTH HISP	0.05							0.08						
NATIVEAM	0.23							0.12						
PARED	0.24*	0.27*	0.23*	0.29*	0.23*	0.21*	0.16	0.03	0.05	0.07	0.05	0.06	0.06	0.11
M HOME	0.31*	0.39*	0.79*	0.41	0.08	0.25	-0.15	0.09	0.17	0.28	0.40	0.23	0.19	0.53
SEX=M	-0.12*	-0.21*	0.11	-0.09	-0.28*	-0.06	0.03	0.05	0.09	0.15	0.12	0.14	0.11	0.24

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

124

125

Family Asks about School Work

Third Grade. Table 50 shows neither group differences nor significant relationships between the parental education, sex, and mother at home variables and frequency of parents asking about school work for third graders. The multiple correlations are all close to zero. This result suggests the possibility that the item might have quite different interpretations for children who are doing well in school versus those who may be doing poorly. For example, highly educated parents may be more likely to ask about school work in a positive reward framework, while parents with considerably less education may frequently inquire in a negative or punitive framework. This line of argument follows from the fact that children from families characterized by high parental education tend, on average, to get better grades in school. This argument gathers additional support from the finding, reported later, that asking about school work carries a negative weight when predicting grades in school.

Seventh Grade. Table 51 indicates that seventh grade children from Mexican American, Puerto Rican, and other Hispanic households report a higher frequency of parents asking about their school work than do children from Asian households. Parental education is also significantly related to asking about school work. The within group regression equations show relatively inconsistent patterns across groups with parental education showing significant relationships for Mexican Americans and Puerto Ricans only.

Eleventh Grade. The eleventh grade results presented in Table 52 are essentially a replication of the seventh grade findings. As in the seventh grade, children from Mexican American households report that their parents inquire more frequently about their school work than do parents of the Asians. Parental education and, to a somewhat lesser extent, mother living at home also show positive relationships with frequency of "asking about school work," in the total sample and to a lesser degree within groups. For example, mother at home is significant for Asians and Mexican Americans; parent education is significant only for Mexican Americans and Puerto Ricans.

Attendance in Private School

Third Grade. Mexican Americans and Puerto Ricans are significantly less likely to be attending a private school than are Asians. (Table 53) This is particularly surprising since Catholic schools are "coded" as private schools in this analysis. Also, neither parental education nor mother living at home has a significant relationship with attendance at a public or private school. The within group regressions show only two significant effects: Cubans with mother living at home are more likely to attend private schools; and, other Hispanics are more likely to send their girls to private schools than their boys.

Seventh Grade. The seventh grade results presented in Table 54 are similar to those of the third grade. Mexican Americans, Puerto Ricans, and Cubans are less likely than Asians to send their children to private

Table 50

GRADE 3

FAMILY ASKS ABOUT SCHOOL WORK

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135							
MEXICAN	-0.02							-0.50						
P RICAN	0.02							0.77						
CUBAN	0.00							-0.12						
OTH HISP	0.02							0.63						
NATIVEAM	0.05							1.74						
PARED	0.01	0.00	0.08	0.02	0.00	-0.08	0.08	0.25	-0.01	1.34	0.18	0.00	-0.91	0.62
M HOME	-0.03	-0.07	0.05	-0.02	-0.01	-0.01	-0.01	-1.18	-1.65	0.94	-0.24	-0.28	-0.15	-0.06
SEX=M	-0.01	-0.02	-0.05	-0.01	-0.07	0.00	0.14	-0.41	-0.55	-0.84	-0.10	-1.37	-0.03	1.16
MULT R	0.077	0.068	0.101	0.024	0.073	0.082	0.163							

| | RAW REGRESSION WEIGHT | | | | | | | STANDARD ERROR OF WEIGHT | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.05							0.10						
P RICAN	0.10							0.13						
CUBAN	-0.03							0.23						
OTH HISP	0.07							0.12						
NATIVEAM	0.23							0.13						
PARED	0.01	0.00	0.08	0.02	0.00	-0.12	0.09	0.03	0.05	0.06	0.10	0.06	0.13	0.14
M HOME	-0.10	-0.23	0.17	-0.07	-0.05	-0.04	-0.02	0.08	0.14	0.18	0.30	0.19	0.29	0.36
SEX=M	-0.03	-0.06	-0.12	-0.02	-0.18	-0.01	0.33	0.06	0.11	0.14	0.22	0.13	0.22	0.29

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

127

Table 51

GRADE 7

FAMILY ASKS ABOUT SCHOOL WORK

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	0.12*							3.89*						
P RICAN	0.12*							4.84*						
CUBAN	0.04							1.65						
OTH HISP	0.06*							2.34*						
NATIVEAM	0.00							-0.02						
PAREO	0.16*	0.16*	0.24*	0.13	0.09	0.05	0.09	6.81*	4.62*	4.40*	1.72	1.67	0.96	0.78
M HOME	0.04	0.06	-0.02	0.03	0.24*	-0.05	-0.09	1.91	1.73	-0.46	0.39	4.47*	-0.88	-0.81
SEX=M	0.04	0.07*	0.05	0.13	-0.04	0.06	-0.12	1.64	1.99*	1.00	1.67	-0.67	1.08	-1.07
MULT R	0.181	0.184	0.242	0.161	0.244	0.103	0.175							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.26*							0.07						
P RICAN	0.49*							0.10						
CUBAN	0.24							0.15						
OTH HISP	0.20*							0.09						
NATIVEAM	0.00							0.10						
PAREO	0.15*	0.17*	0.20*	0.12	0.08	0.06	0.09	0.02	0.04	0.04	0.07	0.05	0.06	0.11
M HOME	0.16	0.25	-0.10	0.12	0.84*	-0.19	-0.29	0.09	0.15	0.22	0.32	0.19	0.22	0.36
SEX=M	0.08	0.15*	0.10	0.27	-0.08	0.12	-0.27	0.05	0.08	0.10	0.16	0.12	0.11	0.25

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 52

GRADE 11

FAMILY ASKS ABOUT SCHOOL WORK

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	0.11*							3.49*						
P RICAN	0.04							1.52						
CUBAN	0.04							1.60						
OTH HISP	0.05							1.85						
NATIVEAM	0.04							1.56						
PARED	0.11*	0.14*	0.15*	0.04	0.05	0.05	0.06	4.11*	3.12*	2.30*	0 70	0.87	1.06	0.47
M HOME	0.08*	0.09*	-0.02	0.01	0.09	0.11*	0.01	3.32*	2.01*	-0.35	0.25	1.52	2.13*	0.10
SEX=M	0.01	0.01	-0.05	0.07	0.01	0.03	0.06	0.49	0.16	-0.71	1.14	0.13	0.59	0.44
MULT R	0.136	0.165	0.160	0.084	0.098	0.125	0.081							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.27*							0.08						
P RICAN	0.16							0.10						
CUBAN	0.22							0.14						
OTH HISP	0.17							0.09						
NATIVEAM	0.20							0.13						
PARED	0.11*	0.15*	0.17*	0.04	0.06	0.07	0.06	0.03	0.05	0.07	0.06	0.06	0.07	0.13
M HOME	0.34*	0.36*	-0.11	0.11	0.36	0.46*	0.06	0.10	0.18	0.31	0.42	0.23	0.22	0.64
SEX=M	0.03	0.02	-0.11	0.14	0.02	0.07	0.13	0.05	0.10	0.16	0.13	0.14	0.12	0.29

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 53

GRADE 3

PRIVATE SCHOOL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135							
MEXICAN	-0.23*							-6.23*						
P RICAN	-0.12*							-3.89*						
CUBAN	0.00							0.10						
OTH HISP	-0.04							-1.31						
NATIVEAM	-0.01							-0.25						
PARED	0.01	0.04	-0.06	0.04	0.02	0.02	-0.10	0.43	0.99	-0.99	0.49	0.33	0.22	-0.71
M HOME	-0.01	-0.05	-0.09	0.18*	0.06	-0.04	0.11	-0.40	-1.36	-1.52	2.11*	1.13	-0.51	0.81
SEX=M	-0.02	-0.01	-0.04	0.07	-0.14*	0.03	0.05	-0.75	-0.27	-0.63	0.85	-2.64*	0.34	0.40
MULT R	0.206	0.069	0.115	0.204	0.155	0.058	0.125							

| | RAW REGRESSION WEIGHT | | | | | | | STANDARD ERROR OF WEIGHT | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.13*							0.02						
P RICAN	-0.11*							0.03						
CUBAN	0.01							0.05						
OTH HISP	-0.03							0.03						
NATIVEAM	-0.01							0.03						
PARED	0.00	0.01	-0.01	0.01	0.01	0.01	-0.03	0.01	0.01	0.01	0.03	0.02	0.04	0.05
M HOME	-0.01	-0.03	-0.05	0.18*	0.06	-0.04	0.09	0.02	0.02	0.04	0.09	0.05	0.09	0.12
SEX=M	-0.01	0.00	-0.02	0.05	-0.10*	0.02	0.04	0.01	0.02	0.03	0.06	0.04	0.07	0.09

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

133

Table 54

GRADE 7

PRIVATE SCHOOL

DIRECT EFFECTS OF EXPLANATORY VARIABLES BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167
MEXICAN	-0.11*						
P RICAN	-0.07*						
CUBAN	-0.05*						
OTH HISP	-0.04						
NATIVEAM	0.14*						
PARED	0.10*	0.11*	-0.04	0.18*	0.08	0.20*	0.00
M HOME	0.03	0.09*	-0.02	0.00	-0.26*	0.16*	-0.14
SEX=M	0.08*	0.07*	-0.06	0.07	-0.05	0.09	0.31*
MULT R	0.267	0.158	0.073	0.173	0.282	0.265	0.345

T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-3.53*						
P RICAN	-2.90*						
CUBAN	-2.10*						
OTH HISP	-1.58						
NATIVEAM	5.88*						
PARED	4.51*	3.15*	-0.74	2.29*	1.61	3.57*	0.02
M HOME	1.25	2.70*	-0.42	-0.07	-4.96*	2.84*	-1.35
SEX=M	3.59*	2.03*	-1.02	0.94	-1.00	1.69	2.96*

RAW REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.07*						
P RICAN	-0.09*						
CUBAN	-0.09*						
OTH HISP	-0.04						
NATIVEAM	0.17*						
PARED	0.03*	0.03*	-0.01	0.04*	0.02	0.08*	0.00
M HOME	0.03	0.09*	-0.02	0.00	-0.27*	0.23*	-0.20
SEX=M	0.05*	0.04*	-0.03	0.04	-0.03	0.07	0.30*

STANDARD ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.02						
P RICAN	0.03						
CUBAN	0.04						
OTH HISP	0.03						
NATIVEAM	0.03						
PARED	0.01	0.01	0.01	0.02	0.01	0.02	0.05
M HOME	0.03	0.03	0.06	0.08	0.06	0.08	0.15
SEX=M	0.01	0.02	0.03	0.04	0.03	0.04	0.10

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

schools. Unlike the third grade, parental education does have significant positive relationship with attendance at a private school. Once again there is a relatively inconsistent pattern of significant regression weights in the within group regressions.

Eleventh Grade. The total group regressions presented in Table 55 tend to replicate the results of both the third and seventh grade. Mexican Americans, Puerto Ricans and Other Hispanics are less likely to attend private schools than are Asians. Parental education also has a significant positive effect on a student attending a private school. Once again the pattern of significant within group regression weights is relatively inconsistent across groups with the possible exception of the parental education variable, where the relationship was at least always positive. Parental education had a positive and significant relationship with attendance at private schools for Puerto Ricans, Cubans, and Asians. It should be kept in mind here that the model is incompletely specified for the explanation of the public-private school choice, because family income was not measured. One might expect some of the ethnic group differences on the outcome to be reduced if family income were available and included in the model.

Parental Educational Aspirations for the Child

Third Grade. This information was not available at the third grade level.

Seventh Grade. Only the Mexican American parents have significantly lower educational aspirations for their seventh graders than do Asian parents. (Table 56) Parental education and mother present in the home are also significant predictors of parental aspirations for the child. In a lition, there is a significant negative regression weight for sex jgesting that other things being equal (i.e., controlling for ethnic group membership, parent education, etc.), parents have higher aspirations for their daughters. This gender effect is significant for Mexican Americans, and Puerto Ricans. Parental education is a positive but not always significant explanatory variable across all groups, with the exception of Cubans and other Hispanics.

Eleventh Grade. The total group regressions for the eleventh grade presented in Table 57 are a replication of the seventh grade results with the possible exception that there is an even bigger gap between the parental aspirations of Mexican Americans and those of the Asians. That is, Asian eleventh graders, compared to Mexican Americans, report that their parents expect them to attain higher educational levels. As in the seventh grade, parental education and mother at home had significant positive relationships with parental educational aspirations for the child. Unlike the seventh grade, there was no relationship between sex of the child and parental educational aspirations.

Summary of Home Support Variables. In general, parental education was an important predictor variable for many of the home educational support variables. When all the educational support variables are considered, it

Table 55

GRADE 11

PRIVATE SCHOOL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.17*							-5.55*						
P RICAN	-0.07*							-2.41*						
CUBAN	0.03							1.13						
OTH HISP	-0.06*							-2.45*						
NATIVEAM	-0.08*							-3.09*						
PARED	0.17*	0.07	0.37*	0.33*	0.03	0.16*	0.23	6.58*	1.59	6.26*	6.03*	0.56	3.19*	1.92
M HOME	-0.02	0.03	0.08	0.03	-0.23*	0.03	-.28*	-0.91	0.75	1.41	0.62	-3.76*	0.53	-2.30*
SEX=M	0.01	0.06	-0.21*	0.18*	0.09	0.01	-0.18	0.44	1.46	-3.48*	3.22*	1.47	0.12	-1.53
MULT R	0.286	0.102	0.433	0.392	0.267	0.164	0.411							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.09*							0.02						
P RICAN	-0.05*							0.02						
CUBAN	0.03							0.03						
OTH HISP	-0.05*							0.02						
NATIVEAM	-0.09*							0.03						
PARED	0.04*	0.01	0.07*	0.11*	0.01	0.06*	0.04	0.01	0.00	0.01	0.02	0.01	0.02	0.02
M HOME	-0.02	0.01	0.07	0.09	-0.20*	0.03	-0.20*	0.02	0.02	0.05	0.14	0.05	0.07	0.09
SEX=M	0.01	0.01	-0.09*	0.13*	0.05	0.00	-0.06	0.01	0.01	0.02	0.04	0.03	0.04	0.04

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 56

GRADE 7

PARENT ASPIRATIONS FOR CHILD

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT								T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.12*							-3.79*						
P RICAN	-0.04							-1.71						
CUBAN	0.00							0.07						
OTH HISP	-0.01							-0.30						
NATIVEAM	-0.01							-0.26						
PAREO	0.11*	0.11*	0.12*	0.06	0.05	0.13*	0.25*	4.80*	3.15*	2.28*	0.78	0.92	2.33*	2.29*
M HOME	0.14*	0.21*	-0.02	-0.05	0.08	0.08	-0.04	6.28*	6.04*	-0.42	-0.61	1.45	1.41	-0.36
SEX=M	-0.07*	-0.07*	-0.18*	-0.15	-0.05	0.02	-0.09	-3.06*	-2.00*	-3.33*	-1.93	-0.92	0.42	-0.82
MULT R	0.233	0.244	0.228	0.178	0.100	0.154	0.268							

RAW REGRESSION WEIGHT								STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.38*							0.10						
P RICAN	-0.26							0.15						
CUBAN	0.01							0.21						
OTH HISP	-0.04							0.13						
NATIVEAM	-0.04							0.15						
PAREO	0.16*	0.20*	0.15*	0.06	0.05	0.15*	0.30*	0.03	0.06	0.07	0.07	0.05	0.06	0.13
M HOME	0.80*	1.55*	-0.14	-0.21	0.28	0.32	-0.15	0.13	0.26	0.33	0.34	0.19	0.23	0.42
SEX=M	-0.21*	-0.27*	-0.50*	-0.34	-0.11	0.05	-0.24	0.07	0.13	0.15	0.18	0.12	0.12	0.29

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

140

141

109

Table 57

GRADE 11

PARENT ASPIRATIONS FOR CHILD

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125
MEXICAN	-0.19*						
P RICAN	-0.03						
CUBAN	0.01						
OTH HISP	-0.02						
NATIVEAM	-0.04						
PARED	0.11*	0.10*	0.14*	0.02	0.10	0.07	0.16
M HOME	0.06*	-0.06	0.23*	0.03	0.02	0.20*	-0.10
SEX=M	0.00	-0.06	-0.03	-0.05	0.04	0.06	-0.10
MULT R	0.250	0.124	0.263	0.060	0.111	0.219	0.220

T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-6.20*						
P RICAN	-1.27						
CUBAN	0.54						
OTH HISP	-0.70						
NATIVEAM	-1.76						
PARED	4.00*	2.26*	2.11*	0.30	1.67	1.37	1.26
M HOME	2.55*	-1.35	3.56*	0.43	0.36	4.02*	-0.77
SEX=M	-0.06	-1.42	-0.41	-0.88	0.69	1.11	-0.78

RAW REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.62*						
P RICAN	-0.17						
CUBAN	0.10						
OTH HISP	-0.08						
NATIVEAM	-0.29						
PARED	0.14*	0.19*	0.19*	0.01	0.10	0.09	0.18
M HOME	0.34*	-0.43	1.34*	0.12	0.08	0.92*	-0.52
SEX=M	0.00	-0.25	-0.08	-0.07	0.09	0.14	-0.24

STANDARD ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.10						
P RICAN	0.13						
CUBAN	0.18						
OTH HISP	0.12						
NATIVEAM	0.17						
PARED	0.04	0.09	0.09	0.04	0.06	0.07	0.14
M HOME	0.13	0.32	0.38	0.27	0.21	0.23	0.68
SEX=M	0.07	0.17	0.19	0.08	0.13	0.13	0.31

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

appears that the Asian children are coming from homes with somewhat more positive educational support systems. This result varies by grade level however.

The following favorable home support behaviors tend to favor Asians:

o They report more educational reading material in the home (grade 3 only).

o When compared to most Hispanic groups, they are more likely to attend private school.

o Their parents have significantly higher educational aspirations for their children than do the Mexican American parents (all grades).

o There is a tendency for the Asians to have consistent but not significantly higher educational aspirations for their children compared to the remaining groups, with the possible exception of the Cubans (all grades).

English Competence

Third Grade. This information is not available at the third grade.

Seventh Grade. Table 58 presents the regression results relating English competence to demographic characteristics, language in the home, and the home educational support system variables for the seventh graders. The partial regression weights associated with ethnic groups suggest that Mexican Americans, Puerto Ricans nd Cubans all report greater competence in English than do Asians. It should be remembered here that "English Competence" is r four item factor composed of items that are rated on a scale ranging from "Very Well" to "Not at All." Thus, the validity of the present interpretation as well as the succeeding interpretations must assume that the scale points are being interpreted in the same way by all ethnic groups, an assumption for which we have no data, and for which there is not widespread support in the literature. In fact, we do w from earlier studies that Asian parents tend to have more stringent requirements for "excellence" in report cards than do other ethnic groups, and we do observe in these data that Asians rate themselves lower on competence in English, but their objectively derived reading scores at the seventh grade are higher than are the scores from other respondents.

Not surprisingly, two of the home educational support system variables — items in the home and to a lesser extent preschool attendance had significant relationships with English competence. Also not surprisingly, the amount of native language use in the home was negatively related to English competence. Mother living at home was positively related to English competence.

Table 58

GRADE 7

ENGLISH COMPETENCY

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167
MEXICAN	0.15*						
P RICAN	0.09*						
CUBAN	0.07*						
OTH HISP	0.04						
NATIVEAM	0.02						
PARED	0.04	-0.03	-0.06	0.10	0.12*	0.05	0.25*
M HOME	0.14*	0.04	0.05	0.31*	0.41*	0.19*	-0.13
SEX=M	-0.02	-0.02	-0.05	0.11	0.10*	-0.08	-0.18
LM HOME	-0.23*	-0.26*	-0.11	-0.02	-0.14*	-0.20*	-0.29*
PRESCHL	0.07*	0.04	-0.02	-0.12	0.04	0.22*	0.04
PAR ASP	0.03	0.08*	-0.10	0.11	-0.01	-0.02	0.17
ITEMS	0.17*	0.15*	0.10	0.25*	0.13*	0.32*	-0.02
ASK S WK	0.02	0.01	0.03	-0.16*	0.09*	0.03	-0.15
PRIV SCH	-0.07*	-0.04	0.03	-0.02	-0.18*	-0.07	-0.13
MULT R	0.404	0.354	0.186	0.424	0.577	0.615	0.547

T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	5.00*						
P RICAN	3.61*						
CUBAN	3.34*						
OTH HISP	1.71						
NATIVEAM	0.83						
PARED	1.61	-0.76	-0.91	1.23	2.55*	0.96	2.24*
M HOME	6.89*	1.21	0.83	4.30*	8.48*	3.87*	-1.24
SEX=M	-0.90	-0.67	-0.90	1.51	2.24*	-1.71	-1.71
LM HOME	-10.17*	-7.17*	-1.83	-0.24	-2.96*	-3.92*	-2.63*
PRESCHL	3.18*	1.02	-0.37	-1.56	0.75	4.28*	0.41
PAR ASP	1.31	2.16*	-1.78	1.49	-0.12	-0.35	1.64
ITEMS	7.56*	4.22*	1.61	3.19*	2.56*	6.14*	-0.14
ASK S WK	1.01	0.26	0.52	-2.17*	2.02*	0.54	-1.41
PRIV SCH	-3.48*	-1.27	0.57	-0.21	-3.69*	-1.46	-1.16

RAW REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	1.00*						
P RICAN	1.07*						
CUBAN	1.41*						
OTH HISP	0.43						
NATIVEAM	0.24						
PARED	0.11	-0.08	-0.14	0.27	0.42*	0.19	0.73*
M HOME	1.75*	0.47	0.56	4.12*	5.36*	2.67*	-1.22
SEX=M	-0.12	-0.13	-0.28	0.75	0.81*	-0.60	-1.20
LM HOME	-0.12*	-0.13*	-0.05	-0.01	-0.09*	-0.12*	-0.15*
PRESCHL	0.45*	0.21	-0.12	-0.84	0.29	1.69*	0.30
PAR ASP	0.06	0.12*	-0.21	0.31	-0.02	-0.06	0.43
ITEMS	0.44*	0.34*	0.22	0.73*	0.40*	1.05*	-0.05
ASK S WK	0.07	0.02	0.09	-0.49*	0.34*	0.10	-0.44
PRIV SCH	-0.77*	-0.49	0.37	-0.20	-2.18*	-0.72	-0.93

STANDARD ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.20						
P RICAN	0.30						
CUBAN	0.42						
OTH HISP	0.25						
NATIVEAM	0.29						
PARED	0.07	0.10	0.15	0.22	0.17	0.20	0.33
M HOME	0.25	0.39	0.68	0.96	0.63	0.69	0.98
SEX=M	0.14	0.20	0.32	0.50	0.36	0.35	0.70
LM HOME	0.01	0.02	0.03	0.05	0.03	0.03	0.06
PRESCHL	0.14	0.21	0.32	0.53	0.38	0.40	0.72
PAR ASP	0.04	0.05	0.12	0.21	0.16	0.17	0.72
ITEMS	0.06	0.08	0.14	0.23	0.16	0.17	0.26
ASK S WK	0.07	0.09	0.18	0.23	0.17	0.18	0.34
PRIV SCH	0.22	0.39	0.65	0.96	0.59	0.49	0.80

*STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

The within group regressions showed reasonable consistency across groups with literacy related items in the home having a positive and significant effect on English competence in Asian, Mexican American, Cuban, and other Hispanic groups. Conversely, minority language use in the home had a significant negative relationship with English language competence for Mexican Americans, other Hispanics, and Asians.

Eleventh Grade. Table 59 presents the regression analysis relating demographics, language use in the home, and home educational support system variables related to English competence. Both the total group regression and the within group regressions pretty much replicate what was found at the seventh grade. All ethnic groups save one report having greater English competence than the Asian group. Three of the home educational support variables -- reading materials in the home, attendance at preschool, and parental aspirations -- were all positively related to English language competence. Many of the home educational support variables showed similar relationships within groups.

Summary of English Language Competence Results. Mexican Americans, Puerto Ricans and Cubans report higher levels of English competence than Asians at both the seventh and eleventh grade. At those grades, two home educational support variables, attending preschool and literacy related items in the home, also tend to be positively related to English competence. Except for Cubans, frequent use of non-English language at home correlates negatively with ratings of English competence.

School Related Attitudes

Three factors were examined here: Locus of Control Related to Educational Achievement, Attitudes toward School; and, Attitudes toward Reading.

Locus of Control Related to Educational Achievement

Third Grade. This information was not available at the third grade level.

Seventh Grade. Table 60 presents the results of regressing locus of control on demographic characteristics, language use in the home, the home educational support system variables and English competence for seventh graders. The locus of control scale consists of three questions dealing with how much of successes (or failures) in school are due to individual efforts rather than to external forces outside of one's control. The scale is scored so that high scores mean that the student perceives that success in school is primarily due to effort. Inspection of the total group regression weights indicates that all ethnic groups report appreciably lower locus of control scores than Asians. Other important explanatory variables for locus of control are competence in English and, to a lesser extent, parental education, mother living at home, attendance at a private school, and parents ask about school work. In addition, boys in the seventh grade tend to have lower locus of control scores than girls. Inspection of the

Table 59

GRADE 11

ENGLISH COMPETENCY

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125
MEXICAN	0.17*						
P RICAN	0.15*						
CUBAN	0.09*						
OTH HISP	0.06*						
NATIVEAM	0.01						
PARED	0.02	-0.05	0.09	-0.06	0.00	0.05	0.21
M HOME	0.15*	0.15*	0.11	0.06	0.09	0.20*	0.10
SEX=M	-0.04*	-0.02	-0.02	0.07	0.06	-0.11*	-0.04
LM HOME	-0.29*	-0.32*	-0.20*	-0.08	-0.32*	-0.23*	-0.35*
PRESCHL	0.13*	0.08	0.10	0.20*	0.11*	0.20*	-0.08
PAR ASP	0.11*	0.11*	0.03	0.24*	0.09	0.18*	-0.19
ITEMS	0.20*	0.18*	0.05	0.27*	0.31*	0.22*	0.10
ASK S WK	-0.02	-0.07	0.01	-0.15*	-0.05	0.04	0.06
PRIV SCH	0.02	-0.03	0.03	0.13*	0.10*	-0.04	0.05
MULT R	0.520	0.475	0.324	0.485	0.572	0.634	0.550

T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	6.15*						
P RICAN	6.07*						
CUBAN	4.04*						
OTH HISP	2.46*						
NATIVEAM	0.65						
PARED	0.79	-1.19	1.25	-1.01	0.00	1.06	1.60
M HOME	7.23*	3.76*	1.64	1.06	1.72	4.82*	0.81
SEX=M	-2.03*	-0.62	-0.33	1.35	1.14	-2.80*	-0.37
LM HOME	-12.75*	-7.26*	-2.87*	-1.50	-5.77*	-5.24*	-2.75*
PRESCHL	5.92*	1.96	1.43	3.61*	2.16*	4.40*	-0.62
PAR ASP	5.11*	2.69*	0.48	4.31*	1.68	4.37*	-1.51
ITEMS	9.20*	4.34*	0.79	4.73*	5.76*	4.88*	0.81
ASK S WK	-1.08	-1.86	0.21	-2.71*	-0.96	0.92	0.47
PRIV SCH	1.12	-0.72	0.47	2.13*	1.99*	-0.94	0.37

RAW REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	1.22*						
P RICAN	1.58*						
CUBAN	1.44*						
OTH HISP	0.57*						
NATIVEAM	0.21						
PARED	0.06	-0.15	0.23	-0.17	0.00	0.19	0.52
M HOME	1.86*	1.65*	1.18	1.23	1.14	2.77*	1.18
SEX=M	-0.28*	-0.15	-0.12	0.47	0.44	-0.87*	-0.23
LM HOME	-0.15*	-0.15*	-0.10*	-0.07	-0.18*	-0.13*	-0.14*
PRESCHL	0.87*	0.49	0.53	1.35*	0.86*	1.53*	-0.41
PAR ASP	0.24*	0.16*	0.06	1.11*	0.31	0.55*	-0.43
ITEMS	0.62*	0.50*	0.13	0.84*	0.99*	0.79*	0.28
ASK S WK	-0.07	-0.20	0.03	-0.46*	-0.16	0.12	0.14
PRIV SCH	0.31	-0.90	0.45	1.12*	1.48*	-0.41	0.76

STANDARD ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.20						
P RICAN	0.26						
CUBAN	0.36						
OTH HISP	0.23						
NATIVEAM	0.33						
PARED	0.07	0.13	0.18	0.17	0.18	0.18	0.33
M HOME	0.26	0.44	0.72	1.15	0.66	0.57	1.45
SEX=M	0.14	0.24	0.36	0.35	0.39	0.31	0.64
LM HOME	0.01	0.02	0.03	0.04	0.03	0.02	0.05
PRESCHL	0.15	0.25	0.37	0.37	0.40	0.35	0.67
PAR ASP	0.05	0.06	0.12	0.26	0.18	0.13	0.28
ITEMS	0.07	0.12	0.16	0.18	0.17	0.16	0.34
ASK S WK	0.06	0.11	0.15	0.17	0.17	0.13	0.30
PRIV SCH	0.28	1.24	0.97	0.52	0.74	0.44	2.04

*TICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 60

GRADE 7

LOCUS OF CONTROL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT | T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.25*							-8.29*						
P RICAN	-0.17*							-7.14*						
CUBAN	-0.09*							-4.09*						
OTH HISP	-0.19*							-7.70*						
NATIVEAM	-0.19*							-7.93*						
PARED	0.09*	0.10*	0.20*	-0.24*	0.06	0.11	-0.22*	3.88*	2.74*	3.64*	-3.51*	1.14	1.87	-2.46*
M HOME	0.09*	0.00	0.11*	0.16*	0.21*	-0.09	0.41*	4.18*	-0.01	2.23*	2.52*	3.88*	-1.58	4.96*
SEX=M	-0.05*	-0.03	-0.07	-0.35*	-0.06	-0.02	-0.14	-2.53*	-0.96	-1.39	-5.43*	-1.19	-0.39	-1.71
LM HOME	0.02	-0.01	-0.14*	0.21*	-0.01	0.20*	0.10	0.73	-0.37	-2.75*	3.07*	-0.20	3.14*	1.08
PRESCHL	0.00	0.02	0.03	-0.23*	-0.04	0.02	-0.07	0.03	0.49	0.66	-3.43*	-0.90	0.33	-0.77
PAR ASP	0.01	0.02	-0.03	0.09	-0.09	0.06	0.23*	0.62	0.56	-0.55	1.53	-1.93	1.12	2.66*
ITEMS	0.01	0.04	-0.27*	0.20*	0.05	0.05	0.11	0.22	1.17	-5.04*	3.02*	1.00	0.82	1.17
ASK S WK	0.05*	0.05	0.03	-0.07	0.18*	0.00	-0.01	2.34*	1.52	0.60	-1.11	3.70*	-0.06	-0.13
PRIV SCH	0.04*	0.06	0.02	0.18*	0.10*	0.14*	-0.16	1.98*	1.85	0.36	2.86*	1.96*	2.43*	-1.79
ENG COMP	0.24*	0.15*	0.30*	0.24*	0.32*	0.23*	0.49*	10.75*	4.19*	5.83*	3.74*	5.81*	3.33*	5.27*
MULT R	0.390	0.256	0.465	0.648	0.549	0.347	0.755							

RAW REGRESSION WEIGHT | STANDARD ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RIC N	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.78*							0.09						
P RICAN	-0.99*							0.14						
CUBAN	-0.81*							0.20						
OTH HISP	-0.90*							0.12						
NATIVEAM	-1.08*							0.14						
PARED	0.12*	0.15*	0.29*	-0.31*	0.08	0.12	-0.35*	0.03	0.06	0.08	0.09	0.07	0.06	0.14
M HOME	0.50*	0.00	0.80*	1.01*	1.15*	-0.35	2.09*	0.12	0.22	0.36	0.40	0.29	0.22	0.42
SEX=M	-0.16*	-0.11	-0.23	-1.07*	-0.18	-0.04	-0.52	0.06	0.11	0.17	0.20	0.15	0.11	0.30
LM HOME	0.00	0.00	-0.04*	0.06*	0.00	0.03*	0.03	0.01	0.01	0.02	0.02	0.01	0.01	0.02
PRESCHL	0.00	0.06	0.11	-0.73*	-0.14	0.04	-0.24	0.07	0.11	0.17	0.21	0.16	0.13	0.31
PAR ASP	0.01	0.02	-0.03	0.13	-0.13	0.06	0.30*	0.02	0.03	0.06	0.08	0.07	0.05	0.11
ITEMS	0.01	0.05	-0.37*	0.28*	0.07	0.05	0.17	0.03	0.04	0.07	0.09	0.07	0.06	0.14
ASK S WK	0.07*	0.08	0.06	-0.10	0.27*	0.00	-0.02	0.03	0.05	0.09	0.09	0.07	0.06	0.13
PRIV SCH	0.20*	0.40	0.12	1.08*	0.50*	0.37*	-0.62	0.10	0.21	0.35	0.38	0.26	0.15	0.34
ENG COMP	0.11*	0.08*	0.17*	0.11*	0.13*	0.06*	0.26*	0.01	0.02	0.03	0.03	0.02	0.02	0.05

STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA.

116

within group regression equations shows that English competence appears to be a very important explanatory variable for all groups. For three of the groups, Asians, Cubans, and Other Hispanics, attendance at a private school is significantly and positively related to locus of control.

Eleventh Grade. The results of regressing locus of control on the hypothesized explanatory variables for grade 11 students are presented in Table 61. Somewhat surprisingly there are no significant differences among the ethnic groups on locus of control at the eleventh grade. One possibility might be that the eleventh grade non-Asian group cohorts are quite different from their corresponding seventh grade cohorts. Alternatively, it might be that the Asian cohort has changed from the seventh to the eleventh grade. It is possible that selection factors (e.g. dropout rates) may have had a significantly greater impact on the non-Asian groups, since the Asians typically show stronger academic performance than the other groups. If this were the case, then Asian and non-Asian group contrasts on attitudinal variables that are likely to be related to achievement should show smaller differences at the eleventh grade than at the seventh grade when other factors are controlled for.

As in the seventh grade, competence in English is the one most important explanatory variable for locus of control. To the extent that educational locus of control is related to achievement, this finding suggests that it is important for language minority children to become proficient in English. The relationship between locus of control related to achievement is examined further on in this report when we discuss the regression analyses of grades and tested achievement as dependent variables.

Positive Attitude toward School

Third Grade. Table 62 presents the third grade results with respect to positive attitudes toward school. The total group regression suggests that while all non-Asian groups have negative coefficients (indicating a less positive attitude than Asians), only the Mexican Americans and Puerto Ricans are statistically significant. Boys also tend to have less positive attitudes than girls. This result is relatively stable across all ethnic groups.

Seventh Grade. Table 63 presents the results of regressing "positive attitudes towards school" on the hypothesized explanatory variables. The contrasts of each non-Asian group with the Asian group are a partial replication of the third grade results and almost a complete replication of the seventh grade locus of control results. While the Asian/non-Asian contrasts again are all significant, the discrepancies between the Asians and the other groups are not quite as large as that found with locus of control. Three of the home educational support variables — parental aspirations for the child, asking about school work, and attendance at a private school — are all positively related to self-reports of a positive attitude toward school. Boys tend to have a less positive attitude towards school than girls. Parents' education, minority language use in the home, and English competence also have small but significant relationships with positive attitudes towards school.

152

Table 61

GRADE 11

LOCUS OF CONTROL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT | T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	0.00							0.13						
P RICAN	0.05							1.70						
CUBAN	0.01							0.35						
OTH HISP	-0.02							-0.94						
NATIVEAM	-0.04							-1.49						
PARED	0.00	-0.03	0.01	-0.12*	0.09	0.00	-0.07	0.15	-0.67	0.15	-2.18*	1.56	0.03	-0.57
M HOME	-0.01	-0.07	-0.01	0.27*	0.15*	-0.07	0.11	-0.53	-1.60	-0.19	5.07*	2.42*	-1.47	0.97
SEX=M	0.04	0.06	-0.01	-0.13*	-0.01	0.13*	-0.07	1.55	1.33	-0.20	-2.50*	-0.19	2.79*	-0.63
LM HOME	-0.05	-0.05	0.08	0.13*	-0.06	-0.01	-0.48*	-1.75	-1.02	1.16	2.38*	-0.88	-0.13	-3.77*
PRESCHL	0.03	0.02	-0.04	0.00	-0.01	0.13*	-0.07	1.05	0.38	-0.51	-0.02	-0.11	2.39*	-0.55
PAR ASP	0.06*	0.07	0.09	0.20*	0.04	0.04	0.22	2.41*	1.55	1.37	3.58*	0.64	0.86	1.77
ITEMS	0.02	0.10*	0.00	0.11	-0.02	-0.05	-0.11	0.72	2.04*	-0.02	1.81	-0.26	-0.87	-0.94
ASK S WK	-0.04	-0.08	0.01	0.12*	-0.04	-0.04	0.04	-1.57	-1.75	0.16	2.23*	-0.69	-0.91	0.34
PRIV SCH	0.05	0.02	0.05	0.07	0.14*	0.03	0.02	1.89	0.49	0.60	1.12	2.26*	0.69	0.16
ENG COMP	0.24*	0.17*	0.20*	0.17*	0.20*	0.37*	0.24	9.05*	3.44*	2.81*	2.91*	2.83*	6.13*	1.86
MULT R	0.300	0.265	0.231	0.509	0.323	0.421	0.620							

RAW REGRESSION WEIGHT | STANDARD ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.01							0.10						
P RICAN	0.22							0.13						
CUBAN	0.06							0.18						
OTH HISP	-0.11							0.11						
NATIVEAM	-0.24							0.16						
PARED	0.01	-0.05	0.01	-0.17*	0.14	0.00	-0.13	0.04	0.07	0.09	0.08	0.09	0.08	0.22
M HOME	-0.07	-0.39	-0.06	2.62*	0.82*	-0.38	0.93	0.13	0.24	0.34	0.52	0.34	0.26	0.95
SEX=M	0.11	0.17	-0.03	-0.39*	-0.04	0.38*	-0.26	0.07	0.13	0.17	0.16	0.20	0.14	0.42
LM HOME	-0.01	-0.01	0.02	0.05*	-0.01	0.00	-0.13*	0.01	0.01	0.02	0.02	0.02	0.01	0.04
PRESCHL	0.08	0.05	-0.09	0.00	-0.02	0.30*	-0.24	0.07	0.14	0.18	0.17	0.20	0.16	0.44
PAR ASP	0.06*	0.05	0.08	0.43*	0.06	0.05	0.34	0.02	0.03	0.06	0.12	0.09	0.06	0.19
ITEMS	0.02	0.13*	0.00	0.15	-0.02	-0.06	-0.21	0.03	0.06	0.08	0.08	0.09	0.07	0.22
ASK S WK	-0.05	-0.10	0.01	0.17*	-0.06	-0.05	0.07	0.03	0.06	0.07	0.08	0.09	0.06	0.20
PRIV SCH	0.26	0.33	?27	0.27	0.86*	0.13	0.21	0.14	0.68	0.45	0.24	0.38	0.19	1.33
ENG COMP	0.11*	0.08*	0.09*	0.08*	0.09*	0.14*	0.17	0.01	0.02	0.03	0.03	0.03	0.02	0.09

...ISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 62

GRADE 3

POSITIVE ATTITUDE TOWARD SCHOOL (SINGLE ITEM)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135							
MEXICAN	-0.12*							-3.27*						
P RICAN	-0.07*							-2.24*						
CUBAN	-0.04							-1.72						
OTH HISP	-0.05							-1.62						
NATIVEAM	-0.03							-1.09						
PARED	0.08*	0.05	0.03	-0.02	0.03	0.16	0.31*	3.31*	1.15	0.52	-0.26	0.58	1.80	2.3.*
M HOME	0.05	0.03	-0.02	-0.01	0.01	0.16	0.01	1.96	0.72	-0.30	-0.16	0.25	1.82	0.08
SEX=M	-0.15*	-0.16*	-0.06	-0.28*	-0.13*	-0.13	-0.17	-6.36*	-3.95*	-1.13	-3.52*	-2.50*	-1.49	-1.44
LM HOME	0.02	0.05	-0.06	-0.05	-0.02	0.12	-0.02	0.84	1.27	-1.15	-0.59	-0.40	1.29	-0.16
PRESCHL	0.02	0.00	-0.12*	-0.20*	0.07	0.09	0.18	0.73	0.05	-2.07*	-2.34*	1.33	0.89	1.39
ITEMS	-0.07*	-0.05	-0.10	0.01	-0.10	-0.11	-0.01	-2.92*	-1.24	-1.75	0.11	-1.83	-1.14	-0.12
ASK S WK	0.08*	0.10*	0.11*	-0.12	0.10	0.03	0.04	3.33*	2.43*	2.03*	-1.45	1.92	0.39	0.35
PRIV SCH	-0.03	-0.05	0.03	-0.04	-0.10*	0.14	-0.12	-1.08	-1.38	0.60	-0.42	-2.00*	1.61	-0.98
MULT R	0.231	0.219	0.222	0.379	0.228	0.341	0.447							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.11*							0.03						
P RICAN	-0.10*							0.05						
CUBAN	-0.13							0.08						
OTH HISP	-0.06							0.04						
NATIVEAM	-0.05							0.05						
PARED	0.03*	0.02	0.01	-0.01	0.01	0.08	0.12*	0.01	0.02	0.02	0.04	0.02	0.04	0.05
M HOME	0.06	0.03	-0.02	-0.02	0.02	0.16	0.01	0.03	0.05	0.07	0.11	0.07	0.09	0.14
SEX=M	-0.14*	-0.14*	-0.06	-0.27*	-0.11*	-0.10	-0.15	0.02	0.04	0.05	0.08	0.05	0.07	0.10
LM HOME	0.00	0.01	-0.01	-0.01	0.00	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02
PRESCHL	0.02	0.00	-0.11*	-0.19*	0.06	0.07	0.17	0.02	0.04	0.05	0.08	0.05	0.08	0.12
ITEMS	-0.02*	-0.02	-0.03	0.00	-0.03	-0.04	-0.01	0.01	0.01	0.02	0.03	0.02	0.03	0.04
ASK S WK	0.03*	0.03*	0.04*	-0.04	0.03	0.01	0.02	0.01	0.01	0.02	0.03	0.02	0.03	0.04
PRIV SCH	-0.04	-0.13	0.06	-0.04	-0.13*	0.14	-0.14	0.04	0.09	0.11	0.10	0.07	0.09	0.14

*ICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 63

GRADE 7

POSITIVE ATTITUDE TOWARD SCHOOL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDARDIZED REGRESSION WEIGHT / **T-STATISTIC**

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.15*							-4.91*						
P RICAN	-0.06*							-2.29*						
CUBAN	-0.08*							-3.61*						
OTH HISP	-0.10*							-3.79*						
NATIVEAM	-0.09*							-3.83*						
PARED	0.05*	0.07*	-0.06	0.07	-0.04	0.01	-0.07	2.24*	2.05*	-1.09	0.88	-0.72	0.20	-0.57
M HOME	-0.01	-0.05	0.01	0.09	0.13*	-0.10	0.00	-0.30	-1.56	0.21	1.23	2.02*	-1.65	-0.02
SEX=M	-0.15*	-0.20*	-0.24*	-0.22*	-0.01	-0.12*	-0.10	-6.96*	-5.78*	-4.71*	-2.95*	-0.27	-2.14*	-0.90
LM HOME	0.08*	0.04	-0.06	0.03	0.09	0.21*	0.24	3.60*	0.94	-1.13	0.37	1.58	3.34*	1.93
PRESCHL	-0.04	-0.06	0.15*	-0.17*	0.01	-0.03	-0.18	-1.87	-1.74	2.99*	-2.22*	0.20	-0.52	-1.57
PAR ASP	0.10*	0.16*	0.03	0.08	-0.10	0.03	0.16	4.65*	4.42*	0.57	1.18	-1.87	0.60	1.40
ITEMS	0.03	0.00	0.05	0.05	0.10	0.04	0.17	1.08	0.02	1.02	0.69	1.83	0.65	1.35
ASK S WK	0.20*	0.16*	0.34*	0.23*	0.14*	0.22*	0.26*	9.24*	4.72*	6.55*	3.26*	2.53*	3.88*	2.31*
PRIV SCH	0.05*	0.08*	0.01	0.07	-0.05	0.14*	0.06	2.35*	2.23*	0.26	1.02	-0.89	2.28*	1.52
ENG COMP	0.05*	0.04	-0.04	0.20*	0.13*	0.09	-0.10	2.33*	1.16	-0.73	2.63*	2.03*	1.32	-0.81
MULT R	0.341	0.337	0.474	0.466	0.341	0.321	0.463							

RAW REGRESSION WEIGHT / **STANDARD ERROR OF WEIGHT**

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.76*							0.16						
P RICAN	-0.52*							0.23						
CUBAN	-1.18*							0.33						
OTH HISP	-0.73*							0.19						
NATIVEAM	-0.87*							0.23						
PARED	0.12*	0.19*	-0.12	0.13	-0.09	0.03	-0.14	0.05	0.09	0.11	0.15	0.12	0.13	0.25
M HOME	-0.06	0.55	0.11	0.82	1.04*	-0.77	-0.02	0.20	0.35	0.50	0.67	0.51	0.46	0.75
SEX=M	-0.73*	-1.04*	-1.11*	-0.97*	-0.07	-0.50*	-0.49	0.11	0.18	0.24	0.33	0.27	0.23	0.54
LM HOME	0.03*	0.02	-0.02	0.01	0.04	0.07*	0.08	0.01	0.02	0.02	0.03	0.02	0.02	0.04
PRESCHL	-0.20	-0.32	0.71*	-0.79*	0.06	-0.14	-0.86	0.11	0.19	0.24	0.35	0.28	0.27	0.55
PAR ASP	0.16*	0.22*	0.05	0.16	-0.23	0.06	0.28	0.03	0.05	0.09	0.14	0.12	0.11	0.20
ITEMS	0.05	0.00	0.10	0.11	0.21	0.08	0.34	0.05	0.07	0.10	0.16	0.12	0.12	0.25
ASK S WK	0.46*	0.40*	0.86*	0.49*	0.32*	0.46*	0.55*	0.05	0.08	0.13	0.15	0.13	0.12	0.24
PRIV SCH	0.40*	0.78*	0.13	0.64	-0.40	0.74*	0.32	0.17	0.35	0.48	0.63	0.44	0.32	0.61
ENG COMP	0.04*	0.04	-0.03	0.13*	0.08*	0.05	-0.07	0.02	0.03	0.04	0.05	0.04	0.04	0.09

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

119

158

Inspection of the within group regressions indicate that parents asking about school work has a consistent significant positive relationship with positive attitudes towards school.

Eleventh Grade. Table 64 presents the eleventh grade regressions for positive attitudes towards school. The total group results are very similar to the eleventh grade results for locus of control. That is, the differences found between Asian and non-Asian groups at the seventh grade are much reduced in the eleventh grade, with only Puerto Ricans and Cubans showing significantly less positive attitudes. As in the case of locus of control, this reduction in differences may be due to differential selection arising from disproportionate dropout rates across ethnic groups. There is little consistency with respect to patterns of significance within the groups.

In terms of the total group, Puerto Ricans and Cubans have less positive attitudes than do Asians. Males have a less positive attitude than females, and children of parents with high educational aspirations and who ask about their school work, tend to have positive school attitudes.

Attitude toward Reading

Third Grade. The results of the third grade analysis of attitude towards reading are presented in Table 65. The results show no significant differences between ethnic groups. Males are less favorably disposed towards reading than are females. Mother at home and parents ask about school work also are positively related to attitudes toward reading.

Seventh Grade. The seventh grade results relating the hypothesized explanatory variables to attitudes toward reading are presented in Table 66. Once again the total group data replicate the results found with attitudes toward school. The only difference is that while all the non-Asian groups have negative regression weights indicating less positive attitudes toward reading than Asians, only the Mexican Americans, Cubans and Other Hispanics weights are significant. Another not too surprising difference is that both the total group and the within group regressions show bigger effects for competence in English than was found for attitudes towards school.

Eleventh Grade. Table 67 presents the regressions of attitudes toward reading on the hypothesized explanatory variables. The findings are the same as the seventh grade results dealing with attitudes toward school. Only the Cubans and Other Hispanics have significantly poorer attitudes toward reading.

Summary of Attitude Variables. The analysis of school related attitudes suggests relatively large difference in attitudes favoring the Asians at the seventh grade with a consistent reduction in these group differences at the eleventh grade. One possible explanation for this reduction is the impact of differential high school attrition rates of the groups studied. One important and very consistent finding was that English competence was a relatively important variable for explaining the variability in positive school related attitudes.

Table 64

GRADE 11

POSITIVE ATTITUDE TOWARD SCHOOL

DIRECT EFFECTS OF EXPLANATORY VARIABLES BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.03							-0.86						
P RICAN	-0.06*							-2.15*						
CUBAN	-0.08*							-3.21*						
OTH HISP	0.00							-0.05						
NATIVEAM	0.00							-0.16						
PARED	-0.03	-0.03	-0.07	-0.13*	-0.07	0.03	0.02	-1.17	-0.73	-1.02	-2.11*	-1.10	0.47	0.11
M HOME	0.04	0.09*	-0.06	-0.03	0.09	0.01	-0.04	1.56	2.12*	-0.92	-0.57	1.45	0.23	-0.27
SEX=M	-0.13*	-0.18*	-0.14*	-0.12*	-0.05	-0.07	-0.09	-5.32*	-4.13*	-2.15*	-2.11*	-0.90	-1.40	-0.65
LM HOME	0.06*	0.09	0.14*	-0.09	-0.08	0.05	0.13	2.07*	1.78	2.02*	-1.55	-1.21	0.92	0.84
PRESCHL	0.07*	0.08	0.06	0.16*	0.10	0.08	0.06	2.69*	1.72	0.96	2.77*	1.67	1.29	0.40
PAR ASP	0.07*	0.08	0.10	0.06	0.23*	0.06	0.18	2.87*	1.88	1.47	1.01	3.91*	1.03	1.20
ITEMS	0.00	0.05	0.04	0.06	0.02	-0.14*	0.15	0.11	1.16	0.63	0.95	0.37	-2.34*	1.06
ASK S WK	0.10*	0.07	0.23*	0.20*	0.11	0.08	-0.03	4.25*	1.68	3.54*	3.38*	1.78	1.63	-0.19
PRIV SCH	-0.02	0.02	-0.12	-0.16*	-0.10	0.02	0.12	-0.78	0.48	-1.69	-2.45*	-1.65	0.30	0.84
ENG COMP	-0.01	0.06	0.08	-0.11	-0.05	-0.07	0.15	-0.28	1.33	1.27	-1.70	-0.67	-1.11	0.95
MULT R	0.219	0.288	0.352	0.364	0.346	0.200	0.344							

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.14							0.16						
P RICAN	-0.45*							0.21						
CUBAN	-0.92*							0.29						
OTH HISP	-0.01							0.19						
NATIVEAM	-0.04							0.26						
PARED	-0.07	-0.08	0.17	-0.31*	-0.14	0.06	0.04	0.06	0.11	0.16	0.14	0.13	0.13	0.36
M HOME	0.33	0.81*	-0.59	-0.55	0.69	0.10	-0.41	0.21	0.38	0.64	0.97	0.48	0.44	1.54
SEX=M	-0.59*	-0.84*	-0.69*	-0.62*	-0.25	-0.33	-0.44	0.11	0.20	0.32	0.30	0.28	0.23	0.68
LM HOME	0.02*	0.03	0.06*	-0.06	-0.03	0.02	0.05	0.01	0.02	0.03	0.04	0.02	0.02	0.06
PRESCHL	0.32*	0.37	0.32	0.89*	0.48	0.34	0.28	0.12	0.21	0.33	0.32	0.29	0.27	0.71
PAR ASP	0.11*	0.10	0.16	0.23	0.51*	0.10	0.37	0.04	0.05	0.11	0.22	0.13	0.10	0.31
ITEMS	0.01	0.12	0.09	0.15	0.05	-0.29*	0.39	0.06	0.10	0.14	0.16	0.13	0.12	0.36
ASK S WK	0.21*	0.15	0.48*	0.49*	0.22	0.16	-0.06	0.05	0.09	0.13	0.14	0.12	0.10	0.32
PRIV SCH	-0.17	0.51	-1.46	-1.09*	-0.89	0.10	1.82	0.22	1.07	0.86	0.44	0.54	0.32	2.17
...MP	-0.01	0.05	0.08	-0.09	-0.03	-0.04	0.14	0.02	0.04	0.06	0.05	0.04	0.04	0.15

...STICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 65

GRADE 3

POSITIVE ATTITUDE TOWARO READING (SINGLE ITEM)

OIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

STANDAROIZEO REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135
MEXICAN	-0.05						
P RICAN	-0.02						
CUBAN	-0.03						
OTH HISP	0.00						
NATIVEAM	-0.02						
PAREO	0.04	0.04	-0.04	0.00	0.05	-0.06	0.01
M HOME	0.09*	0.09*	0.02	-0.08	0.13*	-0.02	0.25
SEX=M	-0.10*	-0.13*	-0.04	-0.24*	-0.05	-0.11	-0.02
LM HOME	0.01	0.01	0.02	-0.05	0.00	-0.08	0.07
PRESCHL	-0.02	0.03	-0.05	-0.07	-0.03	-0.13	-0.05
ITEMS	-0.02	-0.01	-0.12*	0.08	0.02	-0.14	0.13
ASK S WK	0.06*	0.03	0.18*	-0.03	0.09	0.04	0.11
PRIV SCH	0.00	0.06	-0.03	0.02	-0.02	-0.04	-0.04
MULT R	0.161	0.185	0.242	0.286	0.178	0.242	0.329

T-STATISTIC

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIL	ASIAN	NATIVE AMERICAN
MEXICAN	-1.35						
P RICAN	-0.60						
CUBAN	-1.27						
OTH HISP	-0.01						
NATIVEAM	-0.77						
PAREO	1.46	0.96	-0.62	-0.05	0.94	-0.65	0.10
M HOME	3.52*	2.23*	0.35	-0.88	2.52*	-0.26	1.73
SEX=M	-4.06*	-3.35*	-0.77	-2.89*	-0.99	-1.20	-0.13
LM HOME	0.40	0.24	0.35	-0.52	-0.02	-0.80	0.51
PRESCHL	-0.63	0.87	-0.88	-0.82	-0.47	-1.20	-0.33
ITEMS	-0.86	-0.33	-2.18*	0.89	0.36	-1.36	1.00
ASK S WK	2.29*	0.73	3.30*	-0.32	1.64	0.44	0.91
PRIV SCH	0.15	1.57	-0.56	0.21	-0.40	-0.45	-0.30

RAW REGRESSION WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.04						
P RICAN	-0.02						
CUBAN	-0.08						
OTH HISP	0.00						
NATIVEAM	-0.03						
PAREO	0.01	0.01	-0.01	0.00	0.02	-0.02	0.00
M HOME	0.08*	0.09*	0.02	-0.09	0.13*	-0.02	0.22
SEX=M	-0.07*	-0.10*	-0.03	-0.20*	-0.04	-0.07	-0.01
LM HOME	0.00	0.00	0.00	-0.01	0.00	-0.01	0.01
PRESCHL	-0.01	0.03	-0.04	-0.06	-0.02	-0.09	-0.04
ITEMS	-0.01	0.00	-0.03*	0.03	0.00	-0.04	0.04
ASK S WK	0.02*	0.01	0.05*	-0.01	0.02	0.01	0.04
PRIV SCH	0.00	0.12	-0.05	0.02	-0.02	-0.03	-0.04

STANDARO ERROR OF WEIGHT

	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	0.03						
P RICAN	0.04						
CUBAN	0.07						
OTH HISP	0.03						
NATIVEAM	0.04						
PAREO	0.01	0.01	0.02	0.03	0.02	0.04	0.05
M HOME	0.02	0.04	0.05	0.10	0.05	0.08	0.13
SEX=M	0.02	0.03	0.04	0.07	0.04	0.06	0.10
LM HOME	0.00	0.00	0.01	0.01	0.01	0.01	0.02
PRESCHL	0.02	0.03	0.04	0.07	0.04	0.07	0.11
ITEMS	0.01	0.01	0.01	0.03	0.01	0.03	0.04
ASK S WK	0.01	0.01	0.02	0.03	0.01	0.02	0.04
PRIV SCH	0.03	0.08	0.08	0.09	0.05	0.08	0.13

16.3

* STATISTICS ARE BASEO ON PROPORTIONALLY-WEIGHTEO OATA, SCALEO-OOWN TO N/2 (OESIGN EFFECT=2).

Table 66

GRADE 7

POSITIVE ATTITUDE TOWARD READING

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.21*							-6.72*						
P RICAN	-0.04							-1.59						
CUBAN	-0.10*							-4.27*						
OTH HISP	-0.09*							-3.47*						
NATIVEAM	-0.04							-1.69						
PARED	0.05	0.03	-0.04	-0.11	0.06	0.02	0.07	1.93	0.72	-0.65	-1.49	1.06	0.42	0.54
M HOME	0.01	-0.01	0.01	0.01	0.06	-0.08	-0.05	0.69	-0.27	0.24	0.18	1.07	-1.36	-0.40
SEX=M	-0.11*	-0.17*	-0.19*	-0.08	-0.04	-0.09	0.12	-5.16*	-4.97*	-3.42*	-1.09	-0.84	-1.70	0.96
LM HOME	0.08*	0.05	-0.03	0.07	0.15*	0.17*	-0.01	3.45*	1.29	-0.50	0.89	2.84*	2.73*	-0.09
PRESCHL	-0.01	0.01	0.06	-0.19*	0.03	-0.12	-0.16	-0.66	0.30	1.08	-2.71*	0.55	-1.83	-1.28
PAR ASP	0.07*	0.11*	-0.05	-0.02	0.00	0.02	0.18	3.29*	2.94*	-0.87	-0.32	-0.04	0.42	1.50
ITEMS	0.02	0.05	0.03	0.39*	-0.02	-0.04	-0.02	0..0	1.35	0.44	5.33*	-0.38	-0.66	-0.16
ASK S WK	0.17*	0.18*	0.24*	0.11	0.17*	0.14*	0.02	7.63*	5.19*	4.26*	1.59	3.41*	2.51*	0.18
PRIV SCH	0.03	0.03	-0.05	0.05	-0.06	0.25*	-0.05	1.56	0.99	-0.86	0.77	-1.13	4.20*	-0.37
ENG COMP	0.13*	0.03	0.12*	0.32*	0.33*	0.21*	0.09	5.76*	0.85	2.26*	4.54*	5.50*	3.09*	0.68
MULT R	0.336	0.309	0.343	0.556	0.461	0.332	0.300							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

165

GRADE 7

POSITIVE ATTITUDE TOWARD READING
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

124

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-1.06*							0.16						
P RICAN	-0.37							0.23						
CUBAN	-1.42*							0.33						
OTH HISP	-0.68*							0.20						
NATIVEAM	-0.39							0.23						
PARED	0.10	0.07	-0.07	-0.24	0.13	0.05	0.15	0.05	0.09	0.11	0.16	0.12	0.11	0.28
M HOME	0.14	-0.10	0.12	0.14	0.55	-0.55	-0.33	0.20	0.36	0.50	0.74	0.52	0.41	0.82
SEX=M	-0.55*	-0.92*	-0.80*	-0.40	-0.23	-0.35	0.57	0.11	0.18	0.23	0.37	0.27	0.20	0.59
LM HOME	0.03*	0.02	-0.01	0.03	0.07*	0.05*	0.00	0.01	0.02	0.02	0.04	0.02	0.02	0.05
PRESCHL	-0.07	0.06	0.25	-1.07*	0.16	-0.43	-0.77	0.11	0.19	0.23	0.39	0.28	0.23	0.60
PAR ASP	0.11*	0.15*	-0.07	-0.05	-0.01	0.04	0.33	0.03	0.05	0.09	0.15	0.12	0.10	0.22
ITEMS	0.04	0.10	0.04	0.92*	-0.04	-0.07	-0.05	0.05	0.08	0.10	0.17	0.12	0.10	0.28
ASK S WK	0.39*	0.45*	0.55*	0.26	0.43*	0.26*	0.05	0.05	0.09	0.13	0.17	0.13	0.10	0.26
PRIV SCH	0.27	0.35	-0.41	0.54	-0.50	1.19*	-0.25	0.17	0.36	0.48	0.70	0.45	0.28	0.67
ENG COMP	0.10*	0.03	0.09*	0.26*	0.22*	0.10*	0.07	0.02	0.03	0.04	0.06	0.04	0.03	0.10

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 67

GRADE 11

POSITIVE ATTITUDE TOWARD READING

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.06							-1.79						
P RICAN	0.00							0.18						
CUBAN	-0.08*							-3.26*						
OTH HISP	-0.07*							-2.58*						
NATIVEAM	-0.01							-0.76						
PARED	-0.02	0.02	-0.03	-0.10	-0.05	-0.06	0.16	-0.59	0.39	-0.47	-1.48	-0.86	-1.19	1.12
M HOME	0.01	-0.06	-0.09	0.04	0.03	0.06	-0.18	0.42	-1.27	-1.32	0.69	0.41	1.08	-1.35
SEX=M	-0.07*	-0.15*	-0.14*	-0.07	-0.02	0.07	-0.04	-2.95*	-3.46*	-2.13*	-1.19	-0.40	1.47	-0.31
LM HOME	0.04	0.07	-0.08	-0.05	-0.01	0.04	0.21	1.29	1.39	-1.30	-0.75	-0.11	0.76	1.51
PRESCHL	0.00	-0.03	-0.09	0.04	0.07	0.06	0.10	0.18	-0.63	-1.36	0.58	1.20	1.09	0.75
PAR ASP	0.02	-0.02	0.22*	-0.06	0.07	0.04	-0.14	0.98	-0.43	3.28*	-0.93	1.29	0.68	-1.02
ITEMS	0.10*	0.12*	0.09	0.04	0.25*	0.00	-0.17	3.71*	2.46*	1.33	0.62	3.93*	-0.03	-1.31
ASK S WK	0.07*	0.03	0.12	0.02	0.12*	0.09	0.07	2.73*	0.78	1.76	0.30	2.01*	1.76	0.56
PRIV SCH	-0.01	0.02	-0.09	0.00	-0.22*	0.07	0.07	-0.43	0.35	-1.25	0.02	-3.64*	1.44	0.52
ENG COMP	0.09*	0.07	0.08	0.13	-0.06	0.17*	0.40*	3.46*	1.52	1.25	1.88	-0.83	2.71*	2.74*
MULT R	0.210	0.223	0.345	0.200	0.374	0.262	0.488							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).
(CONTINUED)

GRADE 11

POSITIVE ATTITUDE TOWARD READING
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.29							0.16						
P RICAN	0.04							0.21						
CUBAN	-0.95*							0.29						
OTH HISP	-0.49*							0.19						
NATIVEAM	-0.12							0.27						
PARED	-0.03	0.05	-0.07	-0.22	-0.13	-0.14	0.35	0.06	0.12	0.15	0.15	0.15	0.12	0.32
M HOME	0.09	-0.53	-0.78	0.69	0.24	0.42	-1.86	0.21	0.41	0.59	1.00	0.57	0.38	1.38
SEX=M	-0.33*	-0.77*	-0.63*	-0.36	-0.13	0.30	-0.19	0.11	0.22	0.30	0.30	0.33	0.20	0.60
LM HOME	0.01	0.03	-0.03	-0.03	0.00	0.01	0.08	0.01	0.02	0.03	0.04	0.03	0.02	0.05
PRESCHL	0.02	-0.15	-0.42	0.19	0.41	0.25	0.48	0.12	0.23	0.31	0.33	0.34	0.23	0.64
PAR ASP	0.04	-0.02	0.32*	-0.22	0.20	0.06	-0.28	0.04	0.06	0.10	0.23	0.16	0.08	0.28
ITEMS	0.21*	0.27*	0.18	0.10	0.61*	0.00	-0.43	0.06	0.11	0.13	0.16	0.16	0.11	0.33
ASK S WK	0.14*	0.08	0.22	0.04	0.29*	0.15	0.16	0.05	0.10	0.12	0.15	0.14	0.09	0.28
PRIV SCH	-0.10	0.40	-0.99	0.01	-2.33*	0.41	1.01	0.22	1.16	0.79	0.46	0.64	0.28	1.94
ENG COMP	0.07*	0.06	0.07	0.10	-0.04	0.09*	0.36*	0.02	0.04	0.06	0.05	0.05	0.03	0.13

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

171

170

School Behaviors

Two variables were examined here: time spent on homework, and, for eleventh grade only, highest mathematics course taken.

Time Spent on Homework

Third Grade. Table 68 presents the regression analysis of time spent on homework for the third graders. The self-reported responses as to how much time was spent on homework led to only two significant group contrasts. Mexican Americans report spending less time doing homework than the Asian group. Parent education, asking about school work and attendance at private school were also positively related to time spent on homework. The within group regressions were relatively unstable across groups.

Seventh Grade. Table 69 presents the regression analysis of time spent on homework for seventh graders. All the group comparisons are significant with the Asians reporting that they spend more time doing homework than any of the other groups. Parents asking about school work, attendance at private schools, and positive attitudes towards school and reading are all significantly and positively related to reports of amount of time spent doing homework. Boys report doing less homework than girls. Attitudes towards school and reading and parents asking about school have reasonably stable coefficients across groups.

Eleventh Grade. Table 70 presents the regression analysis of time spent on homework for the eleventh graders. These results are a replication of those at the seventh grade with one exception; the group contrasts with the Asians show even greater differences in favor of the Asians with respect to the amount of time spent doing homework. Three out of the five home educational support system variables are also significantly and positively related to time spent doing homework. Positive school related attitudes are also positively related to time spent doing homework. It is also interesting to note that minority language use in the home has a positive relationship with amount of time spent doing homework. Males continue to report doing less homework than the females. This finding is true for most ethnic groups. Inspection of the within group regression weights suggest that attitudes toward school and to a lesser extent parents asking about school work have relatively stable effects across most groups.

Summary of Homework Results. At both the seventh and eleventh grade, Asians report doing more homework than other groups. This differential increases as one goes from the seventh to the eleventh grade. Parents asking about school work (all grades) and a number of the other home educational support variables were positively related to amount of homework. These latter relationships showed some variation by grade level. The fact that the Asians report doing more homework is consistent with the possibility that they may be taking more rigorous coursework. This is discussed in the next section.

Table 68

GRADE 3

TIME SPENT ON HOMEWORK

DIRECT EFFECTS OF EXPLANATORY VARIABLES BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135							
MEXICAN	-0.13*							-3.48*						
P RICAN	-0.02							-0.49						
CUBAN	0.01							0.58						
OTH HISP	-0.06							-1.73						
NATIVEAM	-0.11*							-3.71*						
PARED	0.10*	0.04	0.03	-0.17	0.13*	0.11	0.45*	3.79*	1.04	0.53	-1.79	2.41*	1.18	3.52*
M HOME	-0.01	-0.03	0.07	-0.03	-0.04	0.05	-0.16	-0.34	-0.65	1.22	-0.35	-0.83	0.62	-1.26
SEX=M	0.01	0.01	0.01	-0.01	-0.12*	0.14	0.13	0.31	0.15	0.19	-0.11	-2.20*	1.57	1.17
LM HOME	0.01	-0.01	0.06	-0.13	-0.09	0.06	0.24*	0.33	-0.20	1.10	-1.42	-1.74	0.58	2.07*
PRESCHL	-0.01	-0.01	0.02	-0.11	-0.08	0.10	0.05	-0.36	-0.33	0.36	-1.29	-1.53	0.95	0.42
ITEMS	0.02	0.01	0.01	0.08	0.01	-0.17	0.27*	0.71	0.19	0.21	0.87	0.24	-1.72	2.34*
ASK S WK	0.08*	0.03	0.07	-0.07	0.16*	0.24*	0.03	3.27*	0.63	1.21	-0.87	3.11*	2.83*	0.25
PRIV SCH	0.06*	0.01	0.00	-0.02	0.02	0.22*	0.09	2.51*	0.14	-0.05	-0.20	0.32	2.53*	0.77
LIK SCHL	0.03	0.05	-0.12	0.11	0.02	0.07	-0.08	1.29	1.26	-1.88	1.19	0.29	0.84	-0.68
LIK READ	0.02	0.02	0.15*	-0.18	-0.05	0.09	-0.09	0.61	0.41	2.43*	-1.94	-0.90	1.06	-0.75
MULT R	0.209	0.085	0.210	0.310	0.281	0.382	0.580							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

173   174

Table 68, Cont.

GRADE 3

TIME SPENT ON HOMEWORK
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.31*							0.09						
P RICAN	-0.06							0.12						
CUBAN	0.12							0.21						
OTH HISP	-0.18							0.11						
NATIVEAM	-0.45*							0.12						
PARED	0.10*	0.04	0.03	-0.15	0.13*	0.14	0.55*	0.03	0.04	0.06	0.09	0.05	3.12	0.16
M HOME	-9.03	-0.08	0.22	-0.09	-0.14	0.16	-0.52	0.08	0.12	0.18	0.25	0.17	0.26	0.41
SEX=M	0.02	0.01	0.03	-0.02	-0.26*	0.31	0.36	0.06	0.09	0.14	0.19	0.12	0.20	0.31
LH HOME	0.00	0.00	0.02	-0.04	-0.03	0.02	0.11*	0.01	0.01	0.02	0.03	0.02	0.03	0.05
PRESCHL	-0.02	-0.03	0.05	-0.25	-0.18	0.23	0.15	0.06	0.09	0.14	0.19	0.12	0.24	0.36
ITEMS	0.02	0.01	0.01	0.06	^.01	-0.16	0.30*	0.02	0.03	0.05	0.07	0.05	0.09	0.13
ASK S WK	0.07*	0.02	0.07	-0.06	0.15*	0.22*	0.03	0.02	0.04	0.06	0.07	0.05	0.08	0.13
PRIV SCH	0.25*	0.03	-0.02	-0.05	0.05	0.64*	0.31	0.10	0.24	0.28	0.24	0.17	0.25	0.41
LIK SCHL	0.09	0.13	-0.31	0.26	0.04	0.21	-0.27	0.07	0.10	0.16	0.22	0.14	0.25	0.39
LIK READ	0.05	0.05	0.50*	-0.46	-0.16	0.30	-0.32	0.08	0.12	0.21	0.24	0.18	0.28	0.42

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

175

Table 69

GRADE 7

TIME SPENT ON HOMEWORK

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

130

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.25*							-8.55*						
P RICAN	-0.09*							-3.92*						
CUBAN	-0.10*							-4.59*						
OTH HISP	-0.07*							-2.88*						
NATIVEAM	-0.10*							-4.27*						
PARED	0.03	0.06	-0.14*	0.28*	-0.03	0.02	0.08	1.30	1.88	-2.44*	4.26*	-0.51	0.26	0.69
M HOME	0.02	0.07*	-0.01	-0.05	-0.15*	0.05	-0.23	0.88	2.27*	-0.25	-0.91	-2.40*	0.77	-1.83
SEX=M	-0.05*	-0.01	-0.05	0.03	-0.07	-0.08	0.06	-2.50*	-0.46	-1.01	0.42	-1.30	-1.34	0.51
LM HOME	0.04	0.04	0.00	0.12	0.00	0.18*	-0.09	1.87	1.16	0.03	1.85	-0.02	2.64*	-0.78
PRESCHL	-0.01	-0.01	0.00	0.17*	-0.01	-0.02	0.05	-0.52	-0.32	-0.02	2.60*	-0.21	-0.31	0.44
PAR ASP	0.03	0.05	-0.08	0.02	-0.01	0.01	-0.04	1.55	1.43	-1.55	0.33	-0.18	0.16	-0.30
ITEMS	0.02	0.04	0.16*	-0.06	-0.03	-0.03	-0.30*	0.69	1.12	2.79*	-0.82	-0.52	-0.39	-2.48*
ASK S WK	0.12*	0.11*	0.10	0.07	0.14*	0.08	0.31*	5.77*	3.33*	1.77	1.14	2.61*	1.28	2.76*
PRIV SCH	0.05*	0.02	0.13*	0.08	0.19*	0.10	-0.13	2.33*	0.72	2.64*	1.44	3.44*	1.64	-1.06
ENG COMP	-0.03	-0.03	-0.04	-0.35*	0.16*	0.04	-0.29*	-1.57	-1.03	-0.69	-5.35*	2.40*	0.56	-2.06*
LOC CNTL	0.03	0.03	0.15*	0.33*	-0.06	-0.06	0.36*	1.44	0.94	2.60*	4.34*	-0.96	-0.92	2.21*
SCHL ATT	0.25*	0.34*	0.26*	0.26*	0.09	0.16*	0.28*	10.92*	9.32*	4.26*	3.87*	1.41	2.56*	2.43*
READ ATT	0.10*	0.09*	0.07	0.34*	0.22*	0.04	0.07	4.45*	2.56*	1.23	4.74*	3.33*	0.69	0.64
MULT R	0.477	0.481	0.465	0.715	0.388	0.306	0.567							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

177   178

Table 69, Cont.

GRADE 7

TIME SPENT ON HOMEWORK
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.62*							0.07						
P RICAN	-0.41*							0.11						
CUBAN	-0.69*							0.15						
DTH HISP	-0.26*							0.09						
NATIVEAM	-0.45*							0.10						
PARED	0.03	0.07	-0.14*	0.31*	-0.03	0.02	0 09	0.02	0.04	0.06	0.07	0.06	0.07	0.13
M HOME	0.08	0.33*	-0.06	-0.29	-0.58*	0.19	-0.80	0.09	0.14	0.26	0.32	0.24	0.24	0.44
SEX=M	-0.12*	-0.04	-0.12	0.07	-0.16	-0.16	0.14	0.05	0.08	0.12	0.17	0.12	0.12	0.28
LM HOME	0.01	0.01	0.00	0.03	0.00	0.03*	·).02	0.00	0.01	0.01	0.02	0.01	0.01	0.02
PRESCHL	-0.03	-0.02	0.00	0.45*	-0.03	-0.04	0.12	0.05	0.08	0.12	0.17	0.13	0.14	0.28
PAR ASP	0.02	0.03	-0.07	0.02	-0.01	0.01	-0.03	0.02	0.02	0.04	0.06	0.06	0.06	0.11
ITEMS	0.01	0.03	0.15*	-0.06	-0.03	-0.02	-0.32*	0.02	0.03	0.05	0.08	0.05	0.06	0.13
ASK S WK	0.13*	0.12*	0.13	0.08	0.15*	0.08	0.34*	0.02	0.04	0.07	0.07	0.06	0.06	0.12
PRIV SCH	0.18*	0.10	0.64*	0.43	0.70*	0.29	).33	0.08	0.14	0.24	0.30	0.20	0.17	0.31
ENG COMP	-0.01	-0.01	-0.02	-0.14*	0.05*	0.01	-0.11*	0.01	0.01	0.02	0.03	0.02	0.02	0.05
LOC CNTL	0.02	0.02	0.11*	0.28*	-0.04	-0.06	0.25*	0.02	0.02	0.04	0.06	0.04	0.07	0.11
SCHL ATT	0.12*	0.15*	0.13*	0.15*	0.04	0.08*	0.15*	0.01	0.02	0.03	0.04	0.03	0.03	0.06
READ ATT	0.05*	0.04*	0.04	0.17*	0.09*	0.07	0.04	0.01	0.02	0.03	0.04	0.03	0.04	0.06

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

170

Table 70

TIME SPENT ON HOMEWORK

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

132

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.29*							-10.40*						
P RICAN	-0.21*							-8.64*						
CUBAN	-0.11*							-5.20*						
OTH HISP	-0.18*							-7.68*						
NATIVEAM	-0.16*							-6.99*						
PARED	0.02	0.03	0.04	0.03	-0.02	0.04	-0.03	0.84	0.81	0.67	0.42	-0.32	0.77	-0.21
M HOME	0.00	0.08*	0.07	-0.10	-0.03	-0.06	-0.09	0.07	2.07*	1.09	-1.82	-0.60	-1.10	-0.56
SEX=M	-0.12*	-0.11*	-0.15*	-0.12*	-0.09	-0.20*	-0.08	-5.82*	-2.73*	-2.52*	-2.08*	-1.74	-4.16*	-0.63
LM HOME	0.09*	0.03	0.06	0.02	0.07	0.16*	0.20	3.59*	0.72	0.93	0.33	1.19	3.05*	1.14
PRESCHL	0.01	0.04	0.02	0.04	-0.10	-0.01	0.07	0.25	0.85	0.27	0.74	-1.89	-0.24	0.51
PAR ASP	0.07*	0.19*	-0.04	0.10	0.02	0.01	-0.06	3.23*	4.70*	-0.66	1.62	0.31	0.16	-0.44
ITEMS	0.07*	0.02	0.10	0.04	-0.05	0.15*	0.22	3.26*	0.53	1.66	0.69	-0.82	2.85*	1.61
ASK S WK	0.10*	0.14*	0.14*	0.28*	0.10	0.04	0.13	4.94*	3.56*	2.28*	4.65*	1.90	0.89	0.94
PRIV SCH	0.02	0.02	-0.22*	0.03	-0.03	0.09	0.07	1.15	0.42	3.37*	0.46	-0.46	1.96	0.47
ENG COMP	-0.03	-0.02	0.03	-0.03	-0.01	-0.06	0.07	-1.42	-0.53	0.51	-0.42	-0.16	-0.96	0.43
LOC CNTL	-0.05*	-0.03	-0.01	0.01	-0.13*	-0.05	-0.02	-2.45*	-0.69	-0.11	0.17	-2.38*	-1.03	-0.15
SCHL ATT	0.29*	0.29*	0.33*	0.19*	0.39*	0.25*	0.27	13.27*	6.89*	5.00*	3.26*	6.64*	5.15*	1.91
READ ATT	0.10*	0.06	0.12	0.07	0.25*	0.12*	0.11	4.67*	1.56	1.85	1.18	4.33*	2.36*	0.76
MULT R	0.535	0.484	0.542	0.456	0.562	0.433	0.512							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

181

182

Table 70, Cont.

GRAOE 11

TIME SPENT ON HOMEWORK
(CONTINUEO)

OIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | RAW RLGRESSION WEIGHT | | | | | | | STANOARO ERROR OF WEIGHT | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.80*							0.08						
P RICAN	-0.87*							0.10						
CUBAN	-0.72*							0.14						
OTH HISP	-0.68*							0.09						
NATIVEAM	-0.88*							0.13						
PAREO	9.02	0.04	0.05	0.03	-0.02	0.05	-0.03	0.03	0.05	0.07	0.06	0.06	0.07	0.16
M HOME	0.01	0.39*	0.31	-0.78	-0.14	-0.24	-0.40	0.10	0.19	0.29	0.43	0.24	0.22	0.71
SEX=M	-0.31*	-0.28*	-0.37*	-0.26*	-0.24	-0.49*	-0.19	0.05	u.10	0.15	0.13	0.14	0.12	0.30
LM HOME	0.02*	0.01	0.01	0.01	0.01	0.03*	0.04	0.00	0.01	0.01	0.02	0.01	0.01	0.03
PRESCHL	0.01	0.09	0.04	0.10	-0.27	-0.03	0.16	0.06	0.10	0.15	0.14	0.14	0.13	0.32
PAR ASP	0.06*	0.12*	-0.03	0.16	u.02	u.01	-0.06	0.02	0.03	0.05	0.10	0.97	0.05	0.14
ITEMS	0.09*	0.03	0.11	0.05	-0.05	0.18*	0.27	0.03	0.05	0.06	0.07	0.07	0.06	0.17
ASK S WK	0.12*	0.16*	0.14*	0.29*	0.11	0.04	0.13	0.02	0.05	0.06	0.06	0.06	0.05	0.14
PRIV SCH	0.12	0.22	-1.31*	0.09	-0.12	0.31	0.45	0.11	0.52	0.39	0.19	0.27	0.16	0.97
ENG COMP	-0.01	-0.01	0.01	-0.01	0.00	-0.02	0.03	0.01	0.02	9.03	0.02	0.02	0.02	0.07
LOC CNTL	-0.05*	-0.02	-0.01	0.01	-0.10*	-0.04	-0.02	0.02	0.03	0.06	0.05	0.04	0.04	0.11
SCHL ATT	0.16*	0.16*	0.16*	0.09*	0.21*	14*	0.13	0.01	0.02	0.03	0.03	0.03	0.03	0.07
REAO ATT	0.05*	0.03	0.06	0.03	0.12*	0.07*	0.05	0.01	0.02	0.03	0.03	0.03	0.03	0.07

* STATISTICS ARE BASEO ON PROPORTIONALLY-WEIGHTEO OATA, SCALEO-OOWN TO N/2 (OESIGN EFFECT=2).

184

183

133

Highest Level of Mathematics Taken

Third Grade. This question was not appropriate for third graders.

Seventh Grade. At grade seven students indicated whether they were enrolled in a regular mathematics class or in algebra or pre-algebra. Table 71 indicates that the Asians are significantly more likely to be taking algebra or pre-algebra than any of the other groups. Other significant variables in order of importance are: parental education (positive); locus of control (positive); and attitudes towards reading (positive). It is somewhat surprising to find that, with the exception of the Cuban group, where males are more likely to report being enrolled in algebra, sex was not a significant explanatory variable.

Eleventh Grade. Table 72 presents the results of the regression analysis of the highest level of mathematics course taken. Inspection of the total group results indicates relatively large differences in favor of the Asians for all ethnic group contrasts. Other important explanatory variables are: parental education, and three out of the five home educational support variables -- parental aspirations for the child, reading materials in the home, and attendance at a private school. Locus of control also had a significant positive relationship with the level of mathematics courses taken. It is interesting to note that in the total group, minority language use in the home and English competence had little or no relationship with level of coursework in mathematics. But for Asians, native language use in the home has a significant positive relationship with level of mathematics courses taken. This is consistent with the fact that native language use in the home also had a significant positive relationship with the amount of time spent doing homework for the Asian group at grades 7 and 11. Results are the opposite for Cubans -- native language use in the home has a negative relationship, and English competence a positive relationship with amount of homework done.

Number of Science Courses Taken

Third Grade. This question was not appropriate for third graders.

Seventh Grade. This question was not asked of seventh graders.

Eleventh Grade. Table 73 presents the results when number of advanced science courses -- count of the number of biology, chemistry and physics courses taken -- was regressed on the hypothesized explanatory variables. The results indicate that Asians report taking significantly more advanced science courses than the remaining groups. Other significant explanatory variables that were positively related to number of science courses in relative order of importance were: parents education; parental aspirations for the child; locus of control; frequency of use of minority language in the home; English competency and attendance at a private school. The within group analysis suggests that parental education was a fairly consistent predictor across most groups with the exception of the Puerto Ricans and Cuban groups. Locus of control showed significant positive relationships with number of advanced science courses for Mexican Americans, Cubans and

Table 71

GRADE 7

MATH CLASS IS ALGEBRA

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.16*							-4.80*						
P RICAN	-0.08*							-2.96*						
CUBAN	-0.06*							-2.75*						
OTH HISP	-0.12*							-4.52*						
NATIVEAM	-0.10*							-3.95*						
PARED	0.13*	0.15*	0.17*	0.20*	0.09	0.06	0.17	5.18*	4.10*	2.77*	2.33*	1.59	1.04	1.43
M HOME	0.01	-0.05	0.05	0.06	0.13	0.01	0.32*	0.66	-1.28	0.92	0.73	1.93	0.23	2.60*
SEX=M	0.01	0.03	0.05	0.19*	-0.08	-0.02	0.00	0.54	0.96	0.90	2.30*	-1.41	-0.31	0.02
LM HOME	0.03	0.04	-0.06	-0.17*	0.02	0.03	0.00	1.33	1.00	-1.11	-2.09*	0.41	0.50	-0.01
PRESCHL	0.01	0.09*	-0.11	-0.07	0.04	-0.16*	0.01	0.49	2.50*	-1.93	-0.87	0.61	-2.42*	0.13
PAR ASP	-0.03	-0.02	-0.06	-0.12	-0.08	-0.01	0.09	-1.38	-0.58	-0.9u	-1.59	-1.42	-0.09	0.77
ITEMS	0.01	-0.02	0.06	0.15	0.04	0.07	-0.16	0.33	-0.58	0.96	1.67	0.66	1.06	-1.34
ASK S WK	-0.03	-0.04	-0.10	0.13	0.02	0.04	0.16	-1.54	-1.23	-1.63	1.63	0.37	0.63	-1.42
PRIV SCH	0.04	-0.06	0.06	-0.13	-0.01	0.05	0.31*	1.60	-1.80	1.01	-1.76	-0.17	0.77	2.61*
ENG COMP	0.02	0.01	0.03	-0.10	-0.07	0.13	0.02	0.93	0.38	0.52	-1.20	-0.93	1.80	0.14
LOC CNTL	0.08*	0.06*	0.05	0.36*	0.05	0.19*	-0.23	3.20*	2.30*	0.81	3.68*	0.82	3.15*	-1.45
SCHL ATT	0.01	-0.02	-0.01	-0.03	0.07	0.02	0.09	0.26	-0.40	-0.22	-0.30	1.12	0.35	0.77
READ ATT	0.06*	0.10*	0.02	0.02	-0.01	-0.01	0.01	2.42*	2.52*	0.35	0.21	-0.12	-0.09	0.13
MULT R	0.271	0.238	0.287	0.441	0.224	0.309	0.572							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

Table 71, Cont.

GRADE 7

MATH CLASS IS ALGEBRA
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.13*							0.03						
P RICAN	-0.11*							0.04						
CUBAN	-0.15*							0.05						
OTH HISP	-0.15*							0.03						
NATIVEAM	-0.15*							0.04						
PARED	0.05*	0.05*	0.06*	0.06*	0.03	0.03	0.06	0.01	0.01	0.02	0.03	0.02	0.03	0.04
M HOME	0.02	-0.06	0.09	0.09	0.16	0.03	0.34*	0.03	0.05	0.09	0.12	0.08	0.11	0.13
SEX=M	0.01	0.03	0.04	0.14*	-0.06	-0.02	0.00	0.02	0.03	0.05	0.06	0.04	0.06	0.08
LM HOME	0.00	0.00	0.00	-0.01*	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01
PRESCHL	0.01	0.07*	-0.09	-0.06	0.03	-0.15*	0.01	0.02	0.03	0.04	0.06	0.04	0.06	0.09
PAR ASP	-0.01	0.00	-0.02	-0.04	-0.03	0.00	0.03	0.01	0.01	0.02	0.02	0.02	0.03	0.03
ITEMS	0.00	-0.01	0.02	0.05	0.01	0.03	-0.05	0.01	0.01	0.02	0.03	0.02	0.03	0.04
ASK S WK	-0.01	-0.01	-0.04	0.05	0.01	0.02	-0.05	0.01	0.01	0.03	0.03	0.02	0.03	0.04
PRIV SCH	0.05	-0.09	0.09	-0.20	-0.01	0.06	0.25*	0.03	0.05	0.09	0.11	0.07	0.08	0.09
ENG COMP	0.00	0.00	0.00	-0.01	-0.01	0.02	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02
LOC CNTL	0.02*	0.02*	0.01	0.09*	0.01	0.09*	-0.05	0.01	0.01	0.02	0.02	0.01	0.03	0.03
SCHL ATT	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02
READ ATT	0.01*	0.01*	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.02	0.02

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Table 72

GRADE 11

MATHEMATICS COURSE LEVEL

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.38*							-13.14*						
P RICAN	-0.19*							-7.72*						
CUBAN	-0.12*							-5.23*						
OTH HISP	-0.21*							-8.62*						
NATIVEAM	-0.19*							-8.18*						
PARED	0.11*	0.13*	0.08	0.03	0.10	0.09	0.00	4.53*	2.82*	1.16	0.63	1.67	1.68	0.01
M HOME	0.02	0.08	0.22*	-0.06	-0.11	0.06	-0.18	0.98	1.77	3.20*	-1.17	-1.73	1.13	-1.42
SEX=M	0.01	-0.01	0.12	-0.04	-0.02	0.00	-0.01	0.71	-0.28	1.80	-0.79	-0.38	0.07	-0.12
LM HOME	0.04	0.01	-0.08	-0.11*	-0.03	0.23*	-0.15	1.65	0.25	-1.13	-2.21*	-0.41	4.22*	-0.96
PRESCHL	0.00	0.05	0.03	-0.01	-0.17*	0.01	0.14	0.00	1.18	0.42	-0.27	-2.90*	0.10	1.07
PAR ASP	0.08*	0.13*	-0.09	-0.04	0.12*	0.05	0.52*	3.90*	2.98*	-1.38	-0.69	2.11*	0.90	3.81*
ITEMS	0.12*	0.08	0.05	0.15*	0.14*	0.25*	0.03	5.36*	1.76	0.80	2.72*	2.12*	4.48*	0.26
ASK S WK	-0.01	0.06	0.03	-0.13*	-0.03	-0.13*	-0.02	-0.43	1.36	0.47	-2.60*	-0.48	-2.60*	-0.16
PRIV SCH	0.09*	0.04	0.09	0.39*	0.11	0.10	0.03	4.29*	0.91	1.18	7.16*	1.89	1.93	0.22
ENG COMP	0.02	0.01	0.02	0.31*	0.01	-0.03	0.28	0.69	0.28	0.27	5.66*	0.14	-0.47	1.90
LOC CNTL	0.10*	0.16*	0.04	-0.08	0.24*	0.04	0.05	4.37*	3.68*	0.59	-1.45	3.94*	0.82	0.32
SCHL ATT	0.02	0.03	0.18*	0.18*	0.07	-0.10	-0.10	1.12	0.59	2.43*	3.41*	1.10	-1.95	-0.79
READ ATT	-0.03	-0.05	0.02	-0.07	-0.08	0.02	-0.02	-1.52	-1.04	0.24	-1.33	-1.30	0.33	-0.18
MULT R	0.512	0.340	0.360	0.638	0.437	0.372	0.611							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

GRADE 11

MATHEMATICS COURSE LEVEL
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

138

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.80*							0.06						
P RICAN	-0.61*							0.08						
CUBAN	-0.57*							0.11						
OTH HISP	-0.60*							0.07						
NATIVEAM	-0.81*							0.10						
PARED	0.10*	0.12*	0.07	0.03	0.09	0.07	0.00	0.02	0.04	0.06	0.05	0.06	0.04	0.11
M HOME	0.08	0.28	0.79*	-0.37	-0.35	0.16	-0.67	0.08	0.16	0.25	0.31	0.20	0.14	0.47
SEX=M	0.03	-0.02	0.22	-0.07	-0.04	0.01	-0.02	0.04	0.08	0.12	0.09	0.12	0.08	0.20
LM HOME	0.01	0.00	-0.01	-0.03*	0.00	0.03*	-0.02	0.00	0.01	0.01	0.01	0.01	0.01	0.02
PRESCHL	0.00	0.10	0.05	-0.03	-0.35*	0.01	0.23	0.04	0.09	0.13	0.10	0.12	0.09	0.21
PAR ASP	0.06*	0.06*	-0.06	-0.05	0.12*	0.03	0.37*	0.01	0.02	0.04	0.07	0.06	0.03	0.10
ITEMS	0.11*	0.07	0.04	0.13*	0.12*	0.18*	0.03	0.02	0.04	0.06	0.05	0.06	0.04	0.11
ASK S WK	-0.01	0.05	0.02	-0.12*	-0.02	-0.08*	-0.02	0.02	0.04	0.05	0.05	0.05	0.03	0.09
PRIV SCH	0.36*	0.40	0.39	1.00*	0.44	0.20	0.14	0.08	0.43	0.33	0.14	0.24	0.10	0.65
ENG COMP	0.01	0.00	0.01	0.09*	0.00	-0.01	0.09	0.01	0.02	0.02	0.02	0.02	0.01	0.05
LOC CNTL	0.06*	0.11*	0.03	-0.05	0.15*	0.02	0.02	0.01	0.03	0.05	0.04	0.04	0.03	0.07
SCHL ATT	0.01	0.01	0.07*	0.07*	0.03	-0.03	-0.03	0.01	0.02	0.03	0.02	0.03	0.02	0.04
READ ATT	-0.01	-0.02	0.01	-0.03	-0.03	0.01	-0.01	0.01	0.02	0.03	0.02	0.02	0.02	0.05

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

193

Table 73

GRADE 11

NUMBER OF ADVANCED SCIENCE COURSES

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.28*							-9.28*						
P RICAN	-0.13*							-5.08*						
CUBAN	-0.07*							-2.94*						
OTH HISP	-0.11*							-4.39*						
NATIVEAM	-0.13*							-5.24*						
PARED	0.15*	0.16*	-0.01	0.07	0.14*	0.15*	0.34*	5.57*	3.49*	-0.08	1.24	2.47*	2.83*	2.38*
M HOME	-0.02	-0.01	-0.07	-0.04	-0.04	-0.01	0.09	-1.01	-0.23	-1.02	-0.74	-0.70	-0.12	0.66
SEX=M	0.03	0.04	0.00	-0.05	-0.02	0.08	-0.11	1.57	0.91	-0.03	-1.06	-0.36	1.46	-0.90
LM HOME	0.08*	0.07	0.10	0.02	0.00	0.11*	0.02	3.20*	1.46	1.37	0.49	-0.04	1.99*	0.12
PRESCHL	-0.01	0.03	-0.04	-0.23*	-0.13*	0.05	-0.12	-0.46	0.63	-0.59	-4.43*	-2.19*	0.77	-0.88
PAR ASP	0.12*	0.18*	0.16*	-0.10*	0.02	0.09	0.32*	5.44*	4.10*	2.28*	-1.97*	0.32	1.79	2.18*
ITEMS	0.03	0.01	0.08	0.01	0.07	0.01	-0.15	1.32	0.28	1.22	0.17	1.11	0.15	-1.10
ASK S WK	0.01	0.07	-0.08	0.11*	-0.03	-0.04	0.02	0.39	1.52	-1.17	2.02*	-0.58	-0.78	0.14
PRIV SCH	0.06*	0.04	-0.06	0.40*	0.22*	0.00	0.02	2.62*	0.83	-0.83	7.13*	3.67*	-0.09	0.12
ENG COMP	0.07*	0.06	0.05	0.25*	0.04	0.07	-0.02	2.73*	1.28	0.73	4.37*	0.64	1.01	-0.12
LOC CNTL	0.10*	0.11*	-0.02	0.14*	0.24*	0.08	-0.20	4.20*	2.37*	-0.35	2.57*	3.95*	1.54	-1.20
SCHL ATT	0.03	0.08	0.22*	-0.03	0.16*	-0.09	-0.04	1.48	1.85	3.00*	-0.56	2.64*	-1.79	-0.28
READ ATT	0.00	-0.01	0.05	0.09	-0.16*	0.08	0.06	0.19	-0.34	0.66	1.82	-2.55*	1.59	0.45
MULT R	0.443	0.336	0.343	0.613	0.469	0.301	0.544							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

194

195   139

GRADE 11

NUMBER OF ADVANCED SCIENCE COURSES
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

140

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.46*							0.05						
P RICAN	-0.33*							0.06						
CUBAN	-0.26*							0.09						
OTH HISP	-0.25*							0.06						
NATIVEAM	-0.42*							0.08						
PARED	0.10*	0.11*	0.00	0.05	0.10*	0.12*	0.20*	0.02	0.03	0.05	0.04	0.04	0.04	0.08
M HOME	-0.06	-0.03	-0.20	-0.19	-0.11	-0.02	0.24	0.06	0.11	0.20	0.26	0.16	0.15	0.36
SEX=M	0.05	0.05	0.00	-0.08	-0.03	0.11	-0.14	0.03	0.06	0.10	0.08	0.09	0.08	0.15
LM HOME	0.01*	0.01	0.01	0.00	0.00	0.01*	0.00	0.00	0.01	0.01	0.01	0.01	0.01	0.02
PRESCHL	-0.02	0.04	-0.06	-0.37*	-0.20*	0.07	-0.15	0.04	0.06	0.10	0.08	0.09	0.09	0.16
PAR ASP	0.06*	0.06*	0.08*	-0.12*	0.01	0.06	0.16*	0.01	0.02	0.03	0.06	0.04	0.03	0.07
ITEMS	0.02	0.01	0.05	0.01	0.05	0.01	-0.10	0.02	0.03	0.04	0.04	0.04	0.04	0.09
ASK S WK	0.01	0.04	-0.05	0.08*	-0.02	-0.03	0.01	0.01	0.03	0.04	0.04	0.04	0.03	0.07
PRIV SCH	0.18*	0.25	-0.22	0.82*	0.67*	-0.01	0.06	0.07	0.31	0.27	0.12	0.18	0.11	0.50
ENG COMP	0.02*	0.01	0.01	0.06*	0.01	0.01	0.00	0.01	0.01	0.02	0.01	0.01	0.01	0.04
LOC CNTL	0.05*	0.05*	-0.01	0.08*	0.12*	0.04	-0.07	0.01	0.02	0.04	0.03	0.03	0.03	0.06
SCHL ATT	0.01	0.02	0.07*	-0.01	0.06*	-0.03	-0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03
READ ATT	0.00	0.00	0.02	0.03	-0.05*	0.03	0.02	0.01	0.01	0.02	0.02	0.02	0.02	0.04

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

196

197

Other Hispanics. Overall the science coursetaking results were quite similar to the mathematics coursetaking results discussed above. That is, the Asians show a generally more rigorous course taking pattern than the remaining groups.

Achievement

Three achievement outcomes are examined: grades, mathematics scores, and at grade 7, reading performance.

Grades in School

Third Grade. This question was not asked of the third graders.

Seventh Grade. Table 74 presents the results of the regressions of grades in school on the explanatory variables. Inspection of the total regression results indicates that the Asians tend to have higher grades than all other groups. Other significant explanatory variables are: attitudes toward school, locus of control, parent's education, attendance at a predominantly white school, minority language use in the home, English competence, attendance in school having large percentage of students receiving free lunch (negative relationship), mother living at home, time spent doing homework, and whether one is presently in an pre-algebra or algebra class. Boys also tend to get lower grades than girls. Inspection of the within group regression equations suggests that parental education, mother living at home, English competence, minority language use in the home, and the attitudinal variables tend to have fairly stable relationships across groups.

Eleventh Grade. Table 75 presents the results of the regressions of grades in school on the explanatory variables. The total group regression results show that Asians continue to have an advantage in grades over the other groups, although the discrepancy is less now. Not surprisingly, both time spent doing homework and the level of mathematics courses taken have become more important predictors of grades in the eleventh grade than in the seventh grade. Minority language use in the home continues to have a positive relationship with grades in school as do the three attitude measures: locus of control, attitude toward school and attitude toward reading. It is possible that the attitudinal measures simply reflect students' reactions to their educational progress or lack thereof, rather than serve as a potential "cause" of student performance. The cross-sectional data used in this analysis contributes to this interpretive problem. Inspection of the within group regression weights indicates that the school related behaviors -- homework, and level of mathematics coursework -- have consistent positive relationships across all groups but the Other Hispanics.

Summary of Grade Results. At both the seventh and eleventh grades, Asians report getting higher grades than the remaining groups. Not unexpectedly school behaviors and attitudes toward school, including locus of control, are positively related to grades in school for both seventh and

Table 74

GRADE 7

GRADES

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.33*							-11.28*						
P RICAN	-0.15*							-6.83*						
CUBAN	-0.14*							-7.04*						
OTH HISP	-0.19*							-8.46*						
NATIVEAM	-0.22*							-10.06*						
PARED	0.12*	0.10*	0.23*	0.13*	0.10	0.07	**********	5.43*	2.83*	4.02*	2.11*	1.93	1.48	**********
M HOME	0.07*	0.02	0.08	0.05	0.25*	0.15	**********	3.76*	0.63	1.54	0.92	4.22*	2.96	**********
SEX=M	-0.05*	-0.02	-0.08	-0.17*	-0.14*	0.00	**********	-2.64*	-0.48	-1.52	-3.27*	-3.03*	0.09	**********
LM HOME	0.10*	0.10*	-0.02	0.15*	0.02	0.26	**********	4.69*	2.83*	-0.36	2.92*	0.35	4.69	**********
PRESCHL	-0.05*	-0.02	-0.09	0.08	-0.14*	-0.13	**********	-2.59*	-0.74	-1.71	1.50	-2.77*	-2.33	**********
PAR ASP	-0.02	0.00	-0.09	-0.05	0.00	-0.03	**********	-1.02	-0.10	-1.82	-1.17	-0.02	-0.61	**********
ITEMS	0.01	-0.02	-0.11	0.07	-0.03	0.10	**********	0.25	-0.67	-1.92	1.17	-0.59	1.83	**********
ASK S WK	-0.02	-0.02	-0.02	-0.01	0.05	-0.15	**********	-1.04	-0.63	-0.39	-0.29	1.07	-3.08	**********
PRIV SCH	0.02	0.04	0.02	0.11	0.05	0.02	**********	1.07	1.05	0.35	1.86	0.83	0.35	**********
ENG COMP	0.09*	0.06	0.15*	0.12	-0.13*	0.37	**********	4.34*	1.78	2.82*	1.92	-2.21*	6.16	**********
LOC CNTL	0.14*	0.13*	0.01	0.30*	0.11*	0.10	**********	6.83*	3.86*	0.16	4.36*	2.00*	1.88	**********
SCHL ATT	0.19*	0.20*	0.35*	0.19*	0.28*	0.11	**********	9.00*	5.10*	5.68*	3.33*	4.90*	2.06	**********
READ ATT	0.06*	0.08*	0.00	-0.01	0.11	0.16	**********	2.79*	2.18*	0.01	-0.21	1.72	3.14	**********
HOMEWORK	0.07*	0.08*	-0.04	0.07	-0.03	0.17	**********	3.61*	2.17*	-0.67	1.10	-0.68	3.60	**********
MATH ALG	0.07*	0.11*	0.07	0.00	0.03	0.03	**********	3.62*	3.49*	1.44	-0.10	0.56	0.62	**********
LUNCH%	-0.06*	-0.10*	-0.18*	0.12	-0.10	0.13	**********	-2.39*	-2.45*	-3.14*	1.28	-1.53	2.34	**********
MAJ/MIN	0.13*	0.19*	0.08	0.03	0.13*	-0.08	**********	5.54*	4.86*	1.21	0.37	2.09*	-1.53	**********
ESL SPEC	-0.02	-0.02	-0.05	0.42*	-0.08	0.02	**********	-1.20	-0.68	-0.78	7.67*	-1.46	0.23	**********
MULT R	0.579	0.452	0.530	0.837	0.585	0.648	**********							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

****** REGRESSION COULD NOT BE PERFORMED DUE TO COLLINEARITIES.

(CONTINUED)

200

199

OIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARO ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-1.21*							0.11						
P RICAN	-1.05*							0.15						
CUBAN	-1.52*							0.22						
OTH HISP	-1.10*							0.13						
NATIVEAM	-1.51*							0.15						
PAREO	0.18*	0.17*	0.34*	0.22*	0.15	0.11	**********	0.03	0.06	0.08	0.10	0.08	0.08	*********
M HOME	0.48*	0.14	0.55	0.37	1.38*	0.80**********		0.13	0.22	0.36	0.40	0.33	0.27	*********
SEX=M	-0.18*	-0.06	-0.26	-0.70*	-0.49*	0.01	**********	0.07	0.12	0.17	0.22	0.16	0.14	*********
LM HOME	0.03*	0.03*	-0.01	0.06*	0.01	0.06**********		0.01	0.01	0.02	0.02	0.01	0.01	*********
PRESCHL	-0.18*	-0.09	-0.29	0.35	-0.47*	-0.37**********·		0.07	0.12	0.17	0.23	0.17	0.16	*********
PAR ASP	-0.02	0.00	-0.11	-0.10	0.00	-0.04	**********	0.02	0.03	0.06	0.08	0.07	0.06	*********
ITEMS	0.01	-0.03	-0.15	0.13	-0.04	0.13	**********	0.03	0.05	0.08	0.11	0.07	0.07	*********
ASK S WK	-0.03	-0.03	-0.04	-0.03	0.08	-0.22**********		0.03	0.05	0.10	0.09	0.08	0.07	*********
PRIV SCH	0.12	0.25	0.12	0.90	0.24	0.08	**********	0.12	0.24	0.36	0.48	0.29	0.23	*********
ENG COMP	0.05*	0.04	0.09*	0.07	-0.06*	0.14**********		0.01	0.02	0.03	0.04	0.03	0.02	*********
LOC CNTL	0.17*	0.15*	0.01	0.40*	0.12*	0.14	**********	0.02	0.04	0.06	0.09	0.06	0.07	*********
SCHL ATT	0.14*	0.13*	0.25*	0.18*	0.19*	0.07**********		0.02	0.03	0.04	0.05	0.04	0.04	*********
REAO ATT	0.04*	0.05*	0.00	-0.01	0.07	0.13**********		0.02	0.02	0.04	0.05	0.04	0.04	*********
HOMEWORK	0.11*	0.12*	-0.06	0.11	··0.05	0.23**********'		0.03	0.05	0.08	0.10	0.07	0.06	*********
MATH ALG	0.31*	0.54*	0.31	-0.03	0.12	0.09	**********	0.09	0.16	0.21	0.27	0.21	0.14	*********
LUNCH%	0.00*	-0.01*	-0.01*	0.01	-0.01	0.01**********		0.00	0.00	0.00	0.01	0.00	0.00	*********
MAJ/MIN	0.48*	0.73*	0.30	0.16	0.46*	-0.27	**********	0.09	0.15	0.25	0.43	0.22	0.18	*********
ESL SPEC	-0.09	-0.08	-0.17	1.68*	-0.26	0.05	**********	0.07	0.12	0.22	0.22	0.18	0.16	*********

* STATISTICS ARE BASEO ON PROPORTIONALLY-WEIGHTEO OATA, SCALEO-OOWN TO N/2 (OESIGN EFFECT=2).

******* REGRESSION COULO NOT BE PERFORMEC OUE TO COLLINEARITIES.

Table 75

GRADE 11

GRADES

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICA'	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.15*							-5.05*						
P RICAN	-0.15*							-6.05*						
CUBAN	-0.09*							-4.17*						
OTH HISP	-0.11*							-4.88*						
NATIVEAM	-0.06*							-2.79*						
PARED	0.01	-0.07	0.05	0.06	0.09	0.06	0.04	0.29	-1.79	0.70	1.20	1.43	1.38	0.27
M HOME	0.01	-0.07	0.04	0.00	-0.05	0.08	0.16	0.56	-1.79	0.62	0.07	-0.76	1.70	1.07
SEX=M	-0.07*	-0.05	-0.08	-0.06	-0.12*	-0.11*	-0.09	-3.58*	-1.31	-1.22	-1.28	-2.05*	-2.29*	-0.66
LM HOME	0.10*	0.05	0.16*	0.17*	0.10	0.13*	0.05	4.25*	1.17	2.44*	3.32*	1.49	2.63*	0.20
PRESCHL	0.03	0.02	0.11	0.00	0.01	0.01	-0.11	1.37	0.40	1.80	-0.07	0.19	0.16	-0.80
PAR ASP	0.10*	0.09*	0.19*	0.18*	0.16*	0.05	0.08	5.07*	2.27*	2.96*	3.45*	2.73*	1.12	0.46
ITEMS	0.06*	0.06	0.15*	-0.02	0.05	0.04	-0.02	3.00*	1.44	2.43*	-0.43	0.82	0.70	-0.16
ASK S WK	-0.04	-0.04	-0.08	0.06	0.01	-0.08	0.04	-1.83	-1.01	-1.17	1.11	0.10	-1.82	0.31
PRIV SCH	-0.02	0.03	-0.03	0.15	-0.07	-0.06	0.00	-0.74	0.85	-0.41	1.80	-0.95	-1.16	0.03
ENG COMP	0.01	-0.12*	0.19*	-0.13*	0.04	0.14*	-0.15	0.54	-2.86*	2.96*	-2.08*	0.65	2.38*	-0.92
LOC CNTL	0.06*	0.14*	-0.08	0.13*	0.00	-0.04	0.14	2.73*	3.56*	-1.24	2.31*	0.05	-0.87	0.81
SCHL ATT	0.10*	0.19*	0.03	0.08	0.21*	0.07	-0.01	4.68*	4.53*	0.38	1.51	3.01*	1.55	-0.09
READ ATT	0.06*	0.05	0.06	0.14*	0.06	0.09	0.04	2.84*	1.31	0.85	2.67*	0.88	1.91	0.29
HOMEWORK	0.17*	0.18*	0.25*	0.23*	0.10	0.18*	0.24	7.48*	4.08*	3.57*	4.15*	1.48	3.59*	1.65
MATH LEV	0.23*	0.26*	0.17*	0.28*	0.07	0.24*	0.48*	9.37*	6.29*	2.47*	4.21*	0.97	4.25*	2.84*
#SCIENCE	0.08*	0.08*	-0.12	0.10	0.13	0.14*	-0.03	3.31*	1.98*	-1.76	1.56	1.77	2.51*	-0.21
LUNCH%	-0.08*	-0.05	0.04	0.04	-0.05	-0.05	-0.42	-3.01*	-1.08	0.60	0.59	-0.59	-0.91	-1.03
MAJ/MIN	0.03	0.01	-0.05	-0.14*	-0.02	0.09	0.24	1.20	0.15	-0.55	-2.20*	-0.25	1.71	0.87
ESL SPEC	-0.08*	-0.12*	0.12	0.04	-0.04	-0.12*	0.02	-3.43*	-2.96*	1.49	0.50	-0.47	-2.25*	0.15
. MULT R	0.605	0.569	0.542	0.657	0.481	0.583	0.626							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

Table 75, Cont.

GRADE 11

GRADES
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.49*							0.10						
P RICAN	-0.74*							0.12						
CUBAN	-0.68*							0.16						
OTH HISP	-0.52*							0.11						
NATIVEAM	-0.44*							0.16						
PARED	0.01	-0.11	0.07	0.09	0.11	0.10	0.06	0.03	0.06	0.09	0.07	0.08	0.07	0.22
M HOME	0.07	-0.39	0.24	0.03	-0.21	0.40	1.00	0.12	0.22	0.38	0.50	0.27	0.24	0.94
SEX=M	-0.22*	-0.16	-0.23	-0.19	-0.33*	-0.30*	-0.25	0.06	0.12	0.19	0.15	0.16	0.13	0.38
LM HOME	0.02*	0.01	0.04*	0.06*	0.02	0.03*	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.06
PRESCHL	0.09	0.05	0.35	-0.01	0.03	0.02	-0.32	0.07	0.12	0.19	0.17	0.17	0.14	0.40
PAR ASP	0.11*	0.07*	0.19*	0.39*	0.21*	0.06	0.10	0.02	0.03	0.06	0.11	0.08	0.05	0.21
ITEMS	0.09*	0.08	0.20*	-0.03	0.06	0.05	-0.04	0.03	0.06	0.08	0.08	0.08	0.07	0.23
ASK S WK	-0.05	-0.05	-0.09	0.08	0.01	-0.10	0.06	0.03	0.05	0.08	0.08	0.07	0.05	0.18
PRIV SCH	-0.10	0.52	-0.23	0.59	-0.36	-0.24	0.04	0.13	0.61	0.55	0.33	0.38	0.21	1.27
ENG COMP	0.01	-0.06*	0.10*	-0.06*	0.02	0.05*	-0.08	0.01	0.02	0.03	0.03	0.02	0.02	0.09
LOC CNTL	0.06*	0.15*	-0.09	0.13*	0.00	-0.04	0.11	0.02	0.04	0.07	0.06	0.05	0.05	0.14
SCHL ATT	0.07*	0.12*	0.02	0.05	0.12*	0.05	-0.01	0.01	0.03	0.04	0.03	0.04	0.03	0.09
READ ATT	0.04*	0.03	0.04	0.08*	0.03	0.06	0.03	0.01	0.02	0.04	0.03	0.03	0.03	0.09
HOMEWORK	0.21*	0.21*	0.31*	0.30*	0.11	0.21*	0.29	0.03	0.05	0.09	0.07	0.07	0.06	0.18
MATH LEV	0.36*	0.41*	0.26*	0.43*	0.09	0.45*	0.82*	0.04	0.07	0.11	0.10	0.10	0.10	0.29
#SCIENCE	0.16*	0.18*	-0.23	0.19	0.22	0.26*	-0.08	0.05	0.09	0.13	0.12	0.12	0.10	0.36
LUNCH%	-0.01*	0.00	0.00	0.00	0.00	-0.01	-0.02	0.00	0.00	0.00	0.00	0.01	0.01	0.02
MAJ/MIN	0.09	0.02	-0.15	-0.48*	-0.05	0.26	0.71	0.08	0.16	0.26	0.22	0.21	0.15	0.82
ESL SPEC	-0.24*	-0.37*	0.41	0.14	-0.10	-0.35*	0.06	0.07	0.13	0.27	0.28	0.21	0.16	0.41

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

eleventh grades. Non-English language use in the home also had a positive relationship with grades.

Test Scores in Reading (grade 7 only)

Since reading scores were available for the seventh grade, a separate analysis of the regression of reading scores on the standard set of explanatory variables was also run. The results are presented in Table 76. Asians show significantly higher reading scores, when compared with each of the remaining groups. The two most important explanatory variable were competence in English and locus of control. This latter result was consistent across all groups. For English competence, the exceptions was Puerto Ricans (a non-significant positive effect).

Summary of the Reading Achievement Results. Figure 3 presents a summary of the variables related to reading achievement at the seventh grade.

o The Asians performed better than all other groups on the NAEP reading items.

o The most important explanatory variables were self-assessed competence in English and locus of control.

o Other significant variables were attitude toward reading, toward school, amount of parent education and mother living at home.

o Girls performed better than boys on the reading assessment.

Test Scores in Mathematics

Third Grade. Table 77 presents the regressions of mathematics test scores on the hypothesized explanatory variables. The total group results indicate that the Asian group still does significantly better on the mathematics test than the remaining groups.

Table 77 also indicates that both parental education and mother living at home have significant positive relationships with mathematics scores. Home educational support variables, such as preschool attendance, reading materials in the home, and parents asking about school work, also have significant positive relationships with mathematics scores as do the two attitudinal variables — attitude toward reading and toward school. The two school level variables — attending a school where a high percentage of children receive free lunch and, attending a predominantly minority school -- are significantly negatively related to mathematics test scores.

Table 76
GRADE 7
READING SCORE **

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.16*							-5.19*						
P RICAN	-0.15*							-6.10*						
CUBAN	-0.08*							-3.70*						
OTH HISP	-0.11*							-4.32*						
NATIVEAM	-0.15*							-5.75*						
PARED	0.09*	0.02	-0.05	0.20*	0.09	0.10	0.68*	3.77*	0.52	-0.71	2.24*	1.80	1.66	3.97*
M HOME	0.08*	0.09*	0.01	0.13	0.24*	0.06	-0.50*	3.42*	2.98*	0.10	1.40	4.56*	0.99	-2.90*
SEX=M	-0.06*	-0.06	-0.22*	-0.06	-0.03	-0.04	0.17	-3.31*	-1.73	-3.64*	-0.75	-0.59	-0.74	1.59
LM HOME	0.01	0.06	-0.15*	0.10	-0.06	0.02	-0.25	0.39	1.69	-2.78*	1.24	-1.23	0.24	-1.62
PRESCHL	0.00	-0.01	0.04	0.05	0.02	-0.01	0.06	-0.17	-0.18	0.64	0.54	0.37	-0.10	0.55
PAR ASP	0.04	0.05	0.13*	0.04	0.04	0.07	-0.53*	1.55	1.17	2.23*	0.55	0.80	1.49	-2.96*
ITEMS	0.04	0.03	0.13*	-0.04	-0.01	0.10	0.04	1.92	0.71	2.26*	-0.40	-0.14	1.44	0.43
ASK S WK	-0.02	-0.01	-0.05	-0.01	-0.02	-0.04	0.11	-0.94	-0.31	-0.93	-0.09	-0.43	-0.80	0.97
PRIV SCH	0.00	-0.02	0.15*	0.12	0.98	0.06	0.03	-0.12	-0.33	2.99*	1.03	1.63	0.68	0.23
ENG COMP	0.22*	0.20*	0.08	0.27*	0.19*	0.32*	-0.50	10.81*	6.08*	1.45	3.05*	2.71*	5.00*	-1.55
LOC CNTL	0.24*	0.26*	0.35*	0.25*	0.28*	0.23*	1.70*	10.76*	7.73*	5.40*	2.43*	4.50*	4.05*	2.79*
SCHL ATT	0.07*	0.08*	-0.01	0.10	0.11*	0.02	0.53*	2.91*	2.26*	-0.20	1.09	1.98*	0.38	2.25*
READ ATT	0.18*	0.21*	0.13*	0.10	0.21*	0.16*	0.17	8.17*	5.60*	2.19*	0.73	3.52*	2.56*	1.87
HOMEWORK	-0.01	0.02	-0.13*	-0.02	-0.02	-0.05	-0.71*	-0.42	0.67	-2.29*	-0.14	-0.31	-0.78	-2.22*
MATH ALG	0.03	0.05	0.04	-0.02	0.12*	0.02	-0.05	1.45	1.65	0.53	-0.21	2.90*	0.28	-0.36
LUNCH%	-0.04	-0.08*	-0.09	-0.08	0.06	-0.04	0.50	-1.50	-1.99*	-1.68	-0.42	0.70	-0.44	1.43
MAJ/MIN	-0.07*	-0.05	0.00	-0.08	-0.05	-0.10	0.37	-2.83*	-1.36	0.04	-0.61	-0.83	-1.54	1.96
ESL SPEC	-0.04	-0.06	0.02	0.22*	0.00	-0.03	-0.50*	-1.69	-1.69	0.34	2.53*	-0.05	-0.54	-2.71*
MULT R	0.645	0.579	0.598	0.681	0.739	0.661	0.792							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

**STATISTICS WERE OBTAINED BY RUNNING REGRESSIONS SEPARATELY FOR EACH OF 5 IMPUTED READING SCORES, AND THEN CALCULATING COMPOSITE WEIGHTS AND SIGNIFICANCE TESTS FROM THE 5 SETS OF RESULTS.

(CONTINUED)

Table 76, Cont.
GRADE 7

READING SCORE **
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-0.28*							0.05						
P RICAN	-0.49*							0.08						
CUBAN	-0.40*							0.11						
OTH HISP	-0.30*							0.07						
NATIVEAM	-0.48*							0.08						
PARED	0.07*	0.01	-0.03	0.15*	0.07	0.09	0.54*	0.02	0.03	0.05	0.06	0.04	0.05	0.14
M HOME	0.25*	0.29*	0.02	0.45	0.73*	0.17	-1.27*	0.07	0.10	0.23	0.32	0.16	0.17	0.44
SEX=M	-0.11*	-0.09	-0.35*	-0.11	-0.05	-0.06	0.30	0.03	0.05	0.10	0.14	0.08	0.08	0.19
LM HOME	0.00	0.01	-0.02*	0.02	-0.01	0.00	-0.03	0.00	0.00	0.01	0.01	0.01	0.01	0.02
PRESCHL	-0.01	-0.01	0.07	0.10	0.03	-0.01	0.11	0.04	0.06	0.11	0.18	0.08	0.09	0.19
PAR ASP	0.02	0.02	0.08*	0.03	0.04	0.05	-0.35*	0.02	0.02	0.03	0.05	0.05	0.04	0.12
ITEMS	0.03	0.02	0.08*	-0.03	-0.01	0.07	0.03	0.02	0.02	0.04	0.08	0.04	0.05	0.08
ASK S WK	-0.02	-0.01	-0.05	-0.01	-0.02	-0.03	0.09	0.02	0.03	0.05	0.09	0.04	0.04	0.09
PRIV SCH	-0.01	-0.05	0.51*	0.42	0.24	0.14	0.06	0.08	0.15	0.17	0.41	0.14	0.20	0.28
ENG COMP	0.06*	0.05*	0.02	0.07*	0.04*	0.07*	-0.13	0.01	0.01	0.02	0.02	0.02	0.01	0.09
LOC CNTL	0.14*	0.13*	0.18*	0.15*	0.16*	0.18*	0.84*	0.01	0.02	0.03	0.06	0.04	0.05	0.30
SCHL ATT	0.03*	0.03*	0.00	0.04	0.04*	0.01	0.20*	0.01	0.01	0.02	0.04	0.02	0.02	0.09
READ ATT	0.06*	0.06*	0.05*	0.03	0.07*	0.07*	0.06	0.01	0.01	0.02	0.04	0.02	0.03	0.03
HOMEWORK	-0.01	0.02	-0.09*	-0.01	-0.01	-0.03	-0.51*	0.02	0.02	0.04	0.09	0.04	0.04	0.23
MATH ALG	0.07	0.12	0.08	-0.04	0.31*	0.03	-0.11	0.05	0.07	0.14	0.17	0.11	0.12	0.30
LUNCH%	0.00	0.00*	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.01
MAJ/MIN	-0.12*	-0.09	0.00	-0.19	-0.10	-0.19	0.67	0.04	0.07	0.13	0.31	0.12	0.12	0.34
ESL SPEC	-0.07	-0.09	0.04	0.38*	-0.01	-0.06	-0.90*	0.04	0.06	0.11	0.15	0.11	0.10	0.33

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

**STATISTICS WERE OBTAINED BY RUNNING REGRESSIONS SEPARATELY FOR EACH OF 5 IMPUTED READING SCORES, AND THEN CALCULATING COMPOSITE WEIGHTS AND SIGNIFICANCE TESTS FROM THE 5 SETS OF RESULTS.

Figure 3

SUMMARY OF SIGNIFICA   EXPLANATION VARIABLES -
149   FOR READING ACHIEVEMENT AT SEVENTH GRADE

	Grade 7
Mexican-American	-
Puerto Rican	-
Cuban	-
Other Hispanic	-
Native American	-
Parent Education	+
Mother in Home	+
Gender	-
Non English Use in Home	0
Pre-School	0
Parent Aspirations	0
Literacy Items in Home	0
Parents Ask About Sch. Work	0
Private School	0
English Competence	+
Educ. Locus of Control	+
School Attitudes	+
Read Attitudes	+
Homework	0
Math Algebra	0
% Free Lunch	0
% Minority in School	-
ESL Program	0

* A plus (+) indicates that the variables was significant and positively related to mathematic achievement. A minus (-) indicates that it was significant and relatively related to mathematics achievement. A zero (0) indicates no significant relationship.

Table 77

GRADE 3

MATHEMATICS PERCENT CORRECT

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3329	1260	634	298	730	272	135							
MEXICAN	-0.31*							-8.14*						
P RICAN	-0.23*							-7.47*						
CUBAN	-0.11*							-4.42*						
OTH HISP	-0.22*							-6.74*						
NATIVEAM	-0.27*							-9.19*						
PARED	0.08*	0.07	0.18*	0.27*	0.09	0.04	0.38*	3.30*	1.69	3.22*	3.02*	1.69	0.46	2.19*
M HOME	0.10*	0.07	0.06	-0.14	0.15*	0.20*	0.05	4.16*	1.70	1.10	-1.71	2.91*	2.40*	0.29
SEX=M	-0.02	-0.07	-0.04	0.03	0.07	0.01	0.06	-0.86	-1.68	-0.68	0.31	1.34	0.10	0.42
LM HOME	-0.01	0.00	-0.04	0.07	0.03	0.00	0.05	-0.51	-0.10	-0.74	0.86	0.61	-0.03	0.37
PRESCHL	0.07*	0.03	0.16*	-0.05	-0.06	0.28*	0.10	2.96*	0.82	2.90*	-0.57	-1.06	3.00*	0.68
ITEMS	0.11*	0.12*	0.07	-0.04	0.19*	0.12	0.03	4.63*	2.97*	1.36	-0.43	3.58*	1.28	0.22
ASK S WK	0.06*	0.02	0.02	0.26*	0.11*	0.05	0.00	2.46*	0.61	0.43	3.19*	2.08*	0.56	-0.02
PRIV SCH	-0.04	-0.06	-0.06	-0.21	0.07	-0.13	0.09	-1.71	-1.57	-1.03	-1.74	1.28	-1.38	0.63
LIK SCHL	0.06*	0.08	0.03	0.12	0.01	0.15	-0.11	2.50*	1.92	0.59	1.31	0.28	1.76	-0.68
LIK READ	0.05*	0.04	0.09	0.12	0.04	0.08	0.02	1.96*	0.90	1.60	1.34	0.85	0.98	0.16
HOMEWORK	-0.03	-0.03	-0.08	-0.02	-0.05	0.01	-0.21	-1.31	-0.69	-1.55	-0.24	-0.89	0.07	-1.27
LUNCH%	-0.13*	-0.08	-0.29*	-0.27*	-0.13*	-0.29*	0.25	-4.85*	-1.83	-4.68*	-2.43*	-2.41*	-2.80*	1.27
MAJ/MIN	0.10*	0.12*	0.15*	0.00	0.05	0.12	-0.30	3.39*	2.57*	2.73*	0.02	0.92	1.15	-1.51
ESL SPEC	-0.02	-0.07	0.15*	-0.27*	-0.01	0.12	0.11	-0.77	-1.76	2.42*	-2.42*	-0.09	1.39	0.78
MULT R	0.394	0.257	0.445	0.520	0.369	0.553	0.406							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

Table 77, Cont.

GRADE 3

MATHEMATICS PERCENT CORRECT
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-12.75*							1.57						
P RICAN	-15.32*							2.05						
CUBAN	-15.36*							3.48						
OTH HISP	-12.30*							1.83						
NATIVEAM	-18.53*							2.02						
PARED	1.42*	1.15	3.11*	4.96*	1.56	0.86	7.37*	0.43	0.68	0.97	1.64	0.92	1.88	3.37
M HOME	5.21*	3.55	3.15	-8.06	8.28*	9.36*	2.36	1.25	2.09	2.87	4.70	2.84	3.89	8.06
SEX=M	-0.82	-2.67	-1.50	1.08	2.65	0.29	2.46	0.95	1.59	2.20	3.46	1.97	3.01	5.88
LM HOME	-0.07	-0.02	-0.27	0.46	0.18	-0.01	0.39	0.14	0.23	0.37	0.53	0.29	0.46	1.04
PRESCHL	2.88*	1.29	6.91*	-2.04	-2.13	10.64*	4.60	0.98	1.57	2.38	3.55	2.01	3.55	6.76
ITEMS	1.68*	1.70*	1.11	-0.67	2.78*	1.74	0.57	0.36	0.57	0.82	1.57	0.78	1.36	2.55
ASK S WK	0.91*	0.36	0.40	4.26*	1.64*	0.66	-0.05	0.37	0.59	0.93	1.33	0.79	1.19	2.45
PRIV SCH	-2.99	-6.42	-5.12	-11.80	3.92	-6.13	5.13	1.75	4.10	4.96	6.78	3.06	4.45	8.15
LIK SCHL	2.74*	3.33	1.55	5.54	0.66	6.68	-5.27	1.10	1.74	2.64	4.22	2.32	3.79	7.74
LIK READ	2.58*	1.87	5.34	5.99	2.56	4.18	1.31	1.31	2.08	3.33	4.49	3.00	4.25	7.92
HOMEWORK	-0.53	-0.47	-1.45	-0.40	-0.79	0.09	-3.30	0.41	0.68	0.93	1.64	0.89	1.32	2.60
LUNCH%	-0.09*	-0.06	-0.19*	-0.16*	-0.08*	-0.19*	0.21	0.02	0.03	0.04	0.07	0.03	0.07	0.16
MAJ/MIN	4.17*	5.26*	8.39*	0.13	2.35	4.42	-12.84	1.23	2.05	3.07	6.00	2.56	3.85	8.49
ESL SPEC	-0.78	-2.91	6.37*	-13.07*	-0.20	4.52	5.48	1.01	1.66	2.63	5.40	2.21	3.24	7.01

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

Inspection of the within group regression equations suggests that there is little stability in the patterns of coefficients across groups. Nonetheless, one consistent finding across groups is that students in a low socioeconomic status school (high percentage of lunch program students) tend to have lower mathematics scores.

Seventh Grade Mathematics Performance. Tables 78 and 79 present the regressions of mathematics test scores on the explanatory variables for the seventh graders. In the seventh grade we have both reading and mathematics scores so we can look at mathematics differences among the groups while controlling for reading proficiency. The only difference between Table 78 and 79 is that the latter table includes seventh grade reading scores as an explanatory variable for mathematics test performance. If we assume that performance on the English reading test is a proxy for other English language and verbal reasoning skills, in addition to being a measure of reading proficiency, then the group differences found in Table 79 are unconfounded by differences on this measure.

Table 78 shows that all groups had lower mathematics performance than did the Asians. In addition to parental education and mother living at home, other significant explanatory variables for mathematics achievement in the total sample were: enrollment in pre-algebra; locus of control; literacy items in the home; parental aspirations; minority language use in the home; English competence; attending schools with a high percentage of minorities or free school lunch program recipients (negative); and presence of ESL/ or bilingual education specialist (negative).

A comparison of group differences across the two tables suggests that while the inclusion of the reading score reduces the differences in mathematics performance between Asians and the other language minority groups, there still remains a significant difference in favor of the Asians. That is, after controlling for reading comprehension, the raw score differences between the Asians and the other groups were reduced by only about 25 to 35 percent depending on the group comparison being made.

Eleventh Grade Mathematics Performance. Table 80 presents the results of the regression analysis of mathematics test scores for the eleventh grade. As indicated in earlier group contrasts on grades, the differences in favor of the Asians tend to be reduced at the eleventh grade. The Asians still have significantly higher mathematics scores than the Mexican Americans, Puerto Ricans, and the Other Hispanics. Not surprisingly, the strongest relationship with mathematics test scores is the highest level of mathematics courses taken. Locus of control and a count of the number of high level science courses are the next most important predictors of mathematics scores. As in grade seven, students attending schools with a high percentage of students receiving free lunch tend to have lower mathematics scores. Parental education, mother at home, sex, homework, and English competence also have significant relationships with mathematics achievement.

Table 78

GRADE 7

MATHEMATICS PERCENT CORRECT

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	STANDARDIZED REGRESSION WEIGHT							T-STATISTIC						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.21*							-7.14*						
P RICAN	-0.16*							-7.23*						
CUBAN	-0.09*							-4.40*						
OTH HISP	-0.16*							-6.92*						
NATIVEAM	-0.20*							-9.18*						
PARED	0.05*	-0.01	-0.10	-0.27*	0.10*	0.18***********		2.24*	-0.32	-1.69	-3.40*	2.01*	3.35***********	
M HOME	0.07*	0.10*	0.04	0.09	0.14*	0.04 **********		3.59*	3.04*	0.81	1.44	2.34*	0.77 **********	
SEX=M	0.02	0.02	-0.13*	0.01	0.04	0.08 **********		1.05	0.75	-2.43*	0.09	0.92	1.53 **********	
LM HOME	0.07*	0.13*	-0.18*	0.26*	-0.06	0.10 **********		3.29*	3.60*	-3.45*	3.77*	-1.09	1.69 **********	
PRESCHL	-0.02	-0.04	0.02	-0.17*	-0.08	0.09 **********		-0.91	-1.32	0.44	-2.43*	-1.56	1.51 **********	
PAR ASP	0.06*	0.08*	0.04	0.02	0.08	0.06 **********		3.11*	2.45*	0.76	0.27	1.70	1.14 **********	
ITEMS	0.06*	0.05	0.27*	0.24*	0.06	-0.01 **********		2.78*	1.55	4.66*	3.14*	1.13	-0.24 **********	
ASK S WK	-0.01	0.02	-0.04	-0.19*	-0.06	-0.08 **********		-0.35	0.54	-0.79	-2.97*	-1.16	-1.42 **********	
PRIV SCH	-0.03	-0.01	0.10	·-0.08	0.08	-0.17***********		-1.62	-0.37	1.90	-0.96	1.45	-2.60***********	
ENG COMP	0.06*	0.10*	-0.03	0.25*	-0.05	0.06 **********		2.75*	2.88*	-0.54	3.10*	-0.83	0.91 **********	
LOC CNTL	0.24*	0.27*	0.38*	0.19*	0.29*	0.09 **********		11.71*	8.06*	6.45*	2.15*	5.21*	1.71 **********	
SCHL ATT	0.04	-0.05	0.03	0.16*	0.20*	0.14***********		1.85	-1.25	0.43	2.10*	3.51*	2.50***********	
READ ATT	0.09*	0.08*	0.05	-0.32*	0.16*	0.11***********		4.15*	2.23*	0.83	-3.78*	2.61*	2.04***********	
HOMEWORK	0.02	0.03	-0.11	0.27*	-0.02	0.10 **********		0.85	0.91	-1.94	3.25*	-0.43	1.95 **********	
MATH ALG	0.14*	0.21*	0.04	0.17*	0.13*	0.21***********		7.55*	6.50*	0.81	2.72*	2.86*	4.01***********	
LUNCH%	-0.05*	-0.04	-0.09	-0.66*	0.01	-0.11 **********		-1.96*	-1.06	-1.50	-5.48*	0.11	-1.76 **********	
MAJ/MIN	-0.08*	-0.08*	0.06	0.23*	0.00	-0.08 **********		-3.34*	-2.07*	0.95	2.27*	-0.03	-1.32 **********	
ESL SPEC	-0.05*	-0.04	0.05	0.11	0.00	-0.16***********		-2.34*	-1.15	0.79	1.49	0.02	-2.78***********	
MULT R	0.574	0.481	0.529	0.711	0.587	0.562***********								

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

****** REGRESSION COULD NOT BE PERFORMED DUE TO COLLINEARITIES.

(CONTINUED)

218

GRADE 7

MATHEMATICS PERCENT CORRECT
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

154

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-8.75*							1.23						
P RICAN	-12.67*							1.75						
CUBAN	-10.86*							2.47						
OTH HISP	-10.29*							1.49						
NATIVEAM	-15.81*							1.72						
PARED	0.87*	-0.20	-1.60	-4.81*	1.82*	3.61	**********	0.39	0.64	0.95	1.42	0.90	1.08	********
M HOME	5.26*	7.38*	3.25	7.96	8.91*	2.91	**********	1.46	2.43	4.03	5.54	3.81	3.79	********
SEX=M	0.82	0.96	-4.71*	0.27	1.73	2.93	**********	0.78	1.27	1.94	2.99	1.88	1.91	********
LM HOME	0.23*	0.41*	-0.61*	1.12*	-0.19	0.30	**********	0.07	0.11	0.18	0.30	0.17	0.18	********
PRESCHL	-0.73	-1.69	0.84	-7.82*	-3.11	3.41	**********	0.81	1.28	1.91	3.22	1.98	2.25	********
PAR ASP	0.79*	0.84*	0.52	0.30	1.45	1.02	**********	0.25	0.34	0.69	1.13	0.86	0.89	********
ITEMS	0.94*	0.79	4.05*	4.69*	0.92	-0.24	**********	0.34	0.51	0.87	1.50	0.83	0.98	********
ASK S WK	-0.13	0.32	-0.88	-3.85*	-1.06	-1.42	**********	0.38	0.59	1.12	1.29	0.92	1.00	********
PRIV SCH	-2.16	-0.96	7.67	-6.48	4.92	-8.58	**********	1.33	2.58	4.03	6.73	3.40	3.29	********
ENG COMP	0.35*	0.63*	-0.19	1.63*	-0.25	0.29	**********	0.13	0.22	0.35	0.53	0.31	0.32	********
LOC CNTL	3.27*	3.35*	4.24*	2.72*	3.60*	1.78	**********	0.28	0.42	0.66	1.26	0.69	1.04	********
SCHL ATT	0.34	-0.35	0.21	1.54*	1.58*	1.27	**********	0.18	0.28	0.50	0.73	0.45	0.51	********
READ ATT	0.72*	0.58*	0.42	-2.65*	1.19*	1.17	**********	0.17	0.26	0.50	0.70	0.45	0.57	********
HOMEWORK	0.30	0.54	-1.81	4.60*	-0.36	1.77	**********	0.36	0.60	0.93	1.41	0.85	0.91	********
MATH ALG	7.41*	19.99*	1.97	10.05*	7.09*	8.12	**********	0.98	1.69	2.42	3.69	2.48	2.03	********
LUNCH%	-0.03*	-0.03	-0.05	-0.55*	0.01	-0.09	**********	0.02	0.03	0.03	0.10	0.04	0.05	********
MAJ/MIN	-3.34*	-3.37*	2.66	13.49*	-0.08	-3.33	**********	1.00	1.63	2.79	5.96	2.53	2.52	********
ESL SPEC	-1.94*	-1.52	1.96	4.55	0.04	-6.30	**********	0.83	1.33	2.48	3.05	2.07	2.27	********

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

******** REGRESSION COULD NOT BE PERFORMED DUE TO COLLINEARITIES.

Table 79

GRADE 7

MATHEMATICS PERCENT CORRECT

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	4133	1651	647	355	696	617	167							
MEXICAN	-0.15*							-5.37*						
P RICAN	-0.10*							-4.70*						
CUBAN	-0.06*							-2.93*						
OTH HISP	-0.11*							-5.08*						
NATIVEAM	-0.14*							-6.71*						
PARED	0.02	-0 01	-0.08	-0.37*	0.08	0.12************		0.84	-0.25	-1.42	-5.21*	1.53	2.43************	
M HOME	0.04*	0.07*	0.04	0.02	0.04	0.01 ***********		2.22*	2.21*	0.94	0.40	0.75	0.19 ***********	
SEX=M	0.05*	0.05	-0.02	0.03	0.07	0.10************		2.85*	1.64	-0.48	0.52	1.53	2.11************	
LM HOME	0.06*	0.10*	-0.12*	0.20*	-0.04	0.09 ***********		2.90*	2.87*	-2.47*	3.39*	-0.78	1.61 ***********	
PRESCHL	-0.01	-0.03	0.02	-0.23*	-0.09	0.09 ***********		-0.62	-1.13	0.50	-3.74*	-1.84	1.71 ***********	
PAR ASP	0.04*	0.06	-0.01	-0.01	0.05	0.03 ***********		2.18*	1.79	-0.16	-0.29	1.10	0.64 ***********	
ITEMS	0.03	0.03	0.21*	0.30*	0.06	-0.06 ***********		1.67	0.99	3.87*	4.37*	1.18	-1.09 ***********	
ASK S WK	0.00	0.03	-0.03	-0.20*	-0.04	-0.06 ***********		0.27	1.05	-0.61	-3.62*	-0.79	-1.25 ***********	
PRIV SCH	-0.04*	-0.02	0.04	-0.17*	0.05	-0.24************		-2.16*	-0.55	0.76	-2.47*	0.92	-3.79************	
ENG COMP	-0.03	0.03	-0.06	0.14*	-0.14*	-0.08 ***********		-1.48	0.82	-1.21	1.98*	-2.35*	-1.20 ***********	
LOC CNTL	0.15*	0.18*	0.24*	0.08	0.18*	0.02 ***********		7.84*	5.57*	4.19*	1.03	3.11*	0.32 ***********	
SCHL ATT	0.02	-0.08*	0.06	0.11	0.16*	0.12************		0.95	-2.13*	0.98	1.66	3.05*	2.39************	
READ ATT	0.01	-0.01	0.00	-0.43*	0.07	0.06 ***********		0.67	-0.26	0.09	-5.64*	1.18	1.21 ***********	
HOMEWORK	0.02	0.03	-0.07	0.33*	-0.01	0.11************		0.97	0.77	-1.31	4.37*	-0.18	2.24************	
MATH ALG	0.13*	0.18*	0.06	0.17*	0.08	0.18************		7.09*	6.11*	1.19	3.02*	1.87	3.67************	
LUNCH%	-0.03	-0.01	-0.05	-0.72*	-0.01	-0.12************		-1.25	-0.20	-0.93	-6.75*	-0.12	-2.14************	
MAJ/MIN	-0.05*	-0.07	0.06	0.32*	0.02	-0.02 ***********		-2.44*	-1.86	0.92	3.61*	0.32	-0.27 ***********	
ESL SPEC	-0.03	-0.02	0.05	0.00	0.01	-0.13************		-1.56	-0.64	0.84	0.00	0.14	-2.36************	
READING	0.39*	0.39*	0.40*	0.46*	0.41*	0.42************		17.54*	11.24*	7.17*	6.89*	6.40*	6.70************	
MULT R	0.646	0.579	0.619	0.788	0.646	0.639***********								

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

******* REGRESSION COULD NOT BE PERFORMED DUE TO COLLINEARITIES.

(CONTINUED)

Table 79, Cont.

GRADE 7

MATHEMATICS PERCENT CORRECT
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | RAW REGRESSION WEIGHT | | | | | | STANDARD ERROR OF WEIGHT | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-6.19*							1.15						
P RICAN	-7.79*							1.66						
CUBAN	-6.77*							2.31						
OTH HISP	-7.10*							1.40						
NATIVEAM	-10.94*							1.63						
PARED	0.31	-0.15	-1.24	-6.64*	1.31	2.47	**********	0.36	0.59	0.88	1.27	0.86	1.02	*********
M HOME	3.04*	5.02*	3.52	1.99	2.80	0.68	**********	1.37	2.27	3.74	4.95	3.72	3.55	*********
SEX=M	2.09*	1.94	-0.90	1.37	2.73	3.78	**********	0.73	1.18	1.87	2.64	1.78	1.79	*********
LM HOME	0.19*	0.31*	-0.41*	0.89*	-0.13	0.27	**********	0.07	0.11	0.17	0.26	0.16	0.17	*********
PRESCHL	-0.47	-1.34	0.89	-10.68*	-3.45	3.58	**********	0.75	1.19	1.77	2.86	1.87	2.10	*********
PAR ASP	0.51*	0.57	-0.10	-0.29	0.90	0.53	**********	0.24	0.32	0.64	1.00	0.81	0.83	*********
ITEMS	0.53	0.47	3.15*	5.78*	0.93	-1.00	**********	0.32	0.47	0.81	1.32	0.78	0.92	*********
ASK S WK	0.10	0.58	-0.63	-4.12*	-0.09	-1.16	**********	0.36	0.55	1.04	1.14	0.87	0.93	*********
PRIV SCH	-2.67*	-1.31	2.87	-14.90*	2.96	-11.78	**********	1.24	2.40	3.80	6.04	3.22	3.11	*********
ENG COMP	-0.18	0.17	-0.40	0.94*	-0.70*	-0.38	**********	0.12	0.21	0.33	0.47	0.30	0.32	*********
LOC CNTL	2.11*	2.23*	2.70*	1.16	2.15*	0.32	**********	0.27	0.4'	0.65	1.13	0.69	0.99	*********
SCHL ATT	0.16	-0.55*	0.45	1.07	1.30*	1.13	**********	0.17	0.26	0.46	0.65	0.43	0.47	*********
READ ATT	0.11	-0.07	0.04	-3.56*	0.52	0.65	**********	0.17	0.25	0.46	0.63	0.44	0.54	*********
HOMEWORK	0.32	0.42	-1.13	5.47*	-0.14	1.89	**********	0.33	0.55	0.87	1.25	0.80	0.65	*********
MATH ALG	6.50*	9.63*	2.67	9.79*	4.44	6.95	**********	0.92	1.58	2.25	3.24	2.38	1.90	*********
LUNCH%	-0.02	0.00	-0.03	-0.60*	-0.01	-0.11	**********	0.02	0.03	0.03	0.09	0.04	0.05	*********
MAJ/MIN	-2.28*	-2.82	2.39	19.16*	0.76	-0.65	**********	0.93	1.52	2.59	5.30	2.39	2.38	*********
ESL SPEC	-1.20	-0.80	1.92	0.01	0.27	-5.00	**********	0.77	1.24	2.29	2.76	1.95	2.12	*********
READING	9.06*	9.21*	9.21*	11.16*	8.77*	9.09	**********	0.52	0.82	1.29	1.62	1.37	1.36	*********

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

******* REGRESSION COULD NOT BE PERFORMED DUE TO COLLINEARITIES.

224   225

Table 80

GRADE 11

MATHEMATICS PERCENT CORRECT

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

| | STANDARDIZED REGRESSION WEIGHT | | | | | | | T-STATISTIC | | | | | | |
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
# CASES	3531	1033	461	573	567	772	125							
MEXICAN	-0.13*							-4.89*						
P RICAN	-0.15*							-6.67*						
CUBAN	-0.03							-1.80						
OTH HISP	-0.10*							-4.52*						
NATIVEAM	-0.04							-1.92						
PARED	0.06*	0.03	0.09	0.07	0.07	0.04	0.01	2.61*	0.63	1.31	1.50	1.38	0.90	0.08
M HOME	0.06*	0.04	0.05	-0.10*	0.09	0.12*	-0.05	3.36*	0.96	0.73	-2.32*	1.70	3.00*	-0.46
SEX=M	0.06*	0.09*	0.01	0.08*	0.01	0.05	0.14	3.41*	2.33*	0.12	1.96*	0.31	1.19	1.38
LM HOME	0.00	0.02	-0.16*	0.09*	-0.07	0.04	0.08	0.22	0.34	-2.52*	2.07*	-1.33	0.86	0.37
PRESCHL	-0.02	-0.04	-0.07	0.03	-0.03	-0.01	0.04	-1.05	-1.11	-1.07	0.77	-0.54	-0.26	0.42
PAR ASP	0.03	0.03	0.05	0.14*	0.13*	-0.02	-0.07	1.43	0.81	0.72	3.06*	2.52*	-0.44	-0.55
ITEMS	0.04*	0.02	0.04	-0.04	-0.05	0.12*	0.23*	2.00*	0.54	0.64	-0.92	-0.89	2.73*	2.07*
ASK S WK	-0.05*	-0.08	0.01	-0.06	0.07	-0.10*	0.06	-2.71*	-1.91	0.11	-1.29	1.44	-2.64*	0.61
PRIV SCH	0.02	0.03	-0.17*	0.12	-0.09	-0.03	0.00	1.02	0.82	-2.26*	1.67	-1.51	-0.72	-0.04
ENG COMP	0.06*	0.07	0.17*	0.09	-0.03	0.06	-0.08	2.80*	1.60	2.72*	1.60	-0.48	1.10	-0.67
LOC CNTL	0.16*	0.11*	0.13*	0.18*	0.28*	0.19*	0.54*	8.84*	2.80*	2.13*	3.72*	5.21*	4.65*	4.14*
SCHL ATT	-0.06*	-0.02	-0.09	-0.08	-0.17*	0.00	-0.09	-2.89*	-0.51	-1.19	-1.78	-2.88*	-0.07	-0.80
READ ATT	0.05*	0.04	0.07	0.08	-0.02	0.05	0.20	2.58*	1.07	1.06	1.77	-0.32	1.36	1.74
HOMEWORK	0.05*	0.03	-0.05	0.04	0.07	0.05	0.09	2.41*	0.64	-0.72	0.78	1.22	1.23	0.82
MATH LEV	0.36*	0.40*	0.29*	0.26*	0.32*	0.42*	0.33*	16.30*	9.28*	4.33*	4.55*	5.46*	8.56*	2.61*
#SCIENCE	0.15*	0.11*	0.13	0.37*	0.23*	0.11*	0.25*	6.81*	2.51*	1.93	6.73*	3.72*	2.34*	2.13*
LUNCH%	-0.10*	-0.09	0.00	0.02	-0.16*	-0.12*	-0.42	-4.16*	-1.66	0.05	0.29	-2.17*	-2.51*	-1.35
MAJ/MIN	-0.01	-0.01	0.03	0.01	0.05	-0.05	0.26	-0.39	-0.10	0.42	0.22	0.85	-1.16	1.24
ESL SPEC	-0.03	0.03	-0.16*	-0.03	-0.09	-0.09*	0.19	-1.60	0.63	-2.03*	-0.38	-1.40	-2.00*	1.85
MULT R	0.691	0.533	0.542	0.763	0.673	0.718	0.811							

* STATISTICS ARE BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

(CONTINUED)

226

Table 80, Cont.

GRADE 11

MATHEMATICS PERCENT CORRECT
(CONTINUED)

DIRECT EFFECTS OF EXPLANATORY VARIABLES
BY TOTAL GROUP AND ETHNIC SUBGROUPS

	RAW REGRESSION WEIGHT							STANDARD ERROR OF WEIGHT						
	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN	TOTAL	MEXICAN AMERICAN	PUERTO RICAN	CUBAN	OTHER HISPANIC	ASIAN	NATIVE AMERICAN
MEXICAN	-5.65*							1.15						
P RICAN	-9.65*							1.45						
CUBAN	-3.50							1.94						
OTH HISP	-5.77*							1.28						
NATIVEAM	-3.58							1.87						
PARED	1.01*	0.47	1.56	1.21	1.20	0.76	0.17	0.39	0.76	1.19	0.81	0.87	0.85	2.09
M HOME	4.61*	2.58	3.50	-12.73*	5.35	8.33*	-4.12	1.37	2.69	4.82	5.48	3.14	2.78	9.06
SEX=M	2.53*	3.38*	0.29	3.23*	0.56	1.80	5.08	0.74	1.45	2.45	1.64	1.84	1.52	3.67
LM HOME	0.01	0.05	-0.57*	0.42*	-0.21	0.10	0.21	0.06	0.13	0.22	0.20	0.15	0.12	0.59
PRESCHL	-0.81	-1.65	-2.62	1.42	-1.04	-0.43	1.64	0.78	1.49	2.45	1.83	1.92	1.67	3.90
PAR ASP	0.36	0.30	0.57	3.77*	2.26*	-0.26	-1.12	0.25	0.38	0.80	1.23	0.90	0.60	2.03
ITEMS	0.74*	0.39	0.67	-0.78	-0.78	2.26*	4.68*	0.37	0.71	1.04	0.85	0.88	0.83	2.26
ASK S WK	-0.88*	-1.24	0.12	-1.09	1.15	-1.66*	1.07	0.32	0.65	1.01	0.84	0.80	0.63	1.75
PRIV SCH	1.63	6.14	-15.78*	5.99	-6.58	-1.74	-0.51	1.60	7.49	6.97	3.60	4.37	2.43	12.31
ENG COMP	0.36*	0.43	1.20*	0.51	-0.14	0.28	-0.58	0.13	0.27	0.44	0.32	0.29	0.25	0.86
LOC CNTL	2.29*	1.39*	1.99*	2.32*	3.22*	2.56*	5.53*	0.26	0.50	0.93	0.62	0.62	0.55	1.34
SCHL ATT	-0.50*	-0.17	-0.67	-0.62	-1.34*	-0.03	-0.67	0.17	0.33	0.56	0.35	0.47	0.35	0.84
READ ATT	0.42*	0.31	0.59	0.59	-0.12	0.52	1.55	0.16	0.29	0.56	0.33	0.37	0.38	0.89
HOMEWORK	0.81*	0.41	-0.80	0.62	1.00	0.83	1.41	0.33	0.64	1.11	0.80	0.82	0.68	1.72
MATH LEV	7.47*	7.40*	5.90*	5.14*	5.97*	10.58*	7.30*	0.46	0.80	1.36	1.13	1.09	1.24	2.79
#SCIENCE	3.86*	2.82*	3.23	9.18*	5.31*	2.85*	7.51*	0.57	1.12	1.68	1.36	1.43	1.22	3.52
LUNCH%	-0.10*	-0.08	0.00	0.02	-0.17*	-0.19*	-0.22	0.02	0.05	0.06	0.05	0.08	0.08	0.17
MAJ/MIN	-0.36	-0.19	1.42	0.52	2.04	-2.07	9.80	0.93	1.93	3.35	2.39	2.39	1.78	7.88
ESL SPEC	-1.36	0.98	-7.04*	-1.17	-3.34	-3.70*	7.37	0.85	1.54	3.47	3.09	2.38	1.85	3.98

* STATISTICS AR BASED ON PROPORTIONALLY-WEIGHTED DATA, SCALED-DOWN TO N/2 (DESIGN EFFECT=2).

When a school process outcome, such as highest level of mathematics coursework, was regressed on the ethnic group indicators as well as other background and control variables, it was found that there were relatively large differences favoring Asians (see Table 72). Inspection of the within group regression equations suggests that while the relevant school process variables — highest level of mathematics courses and number of advanced science courses — have relatively consistent positive relationships with mathematics test scores, there appear to be between group differences in their relative impacts. That is, the variable Highest Level of Mathematics Course Taken tends to have a greater impact on mathematics achievement (raw score coefficient of 10.58) for Asians than for Cubans (b=5.14) or Other Hispanics (b=5.97). The opposite relationship seems to hold for science courses.

The results show a consistent effect of mathematics achievement in favor of the Asians at all three grade levels after controlling for both process and selected background variables.

Because parental education was such a critical control variable in the analysis, showing positive relationship for mathematics achievement at all grade levels, and because there were significant amounts of missing data on this variable, especially at the third grade, we conducted an analysis to determine what the effect of the missing data might be for the various groups, assuming such data were not missing at random. A "dummy" variable was entered into the within group equations as an indicator of whether or not information on parental education was present or absent.

The results at the third grade level which had the most missing data suggest that the contrast between the Asians and Cubans and Puerto Ricans may be somewhat underestimated, since there were significant positive regression weights associated with the latter two groups. That is, those third graders in the two groups who responded to the parental education question had significantly higher mathematics scores than those who did not respond.

At the seventh grade, only the Cubans had a significant mathematics performance difference in favor of the respondents. This suggests that the difference observed in favor of the Asians may be slightly underestimated. At the eleventh grade, where the least amount of data were missing, no significant effects were observed between the respondents and non-respondents (to the parent education question) in each group.

Summary of the Mathematics Achievement Results. Figure 4 presents a summary of the significant explanatory variables for mathematics achievement by grade level for the total sample. Findings indicate:

o Asians have higher mathematics scores than all the remaining groups at grades 3 and 7. At grade 11, Asians have significantly higher mathematics scores than Mexican Americans, Puerto Ricans, and Other Hispanics.

Figure 4

SUMMARY OF SIGNIFICANT EXPLANATION VARIABLES
FOR MATHEMATIC ACHIEVEMENT BY GRADE LEVEL*

	Grade 3	Grade 7	Grade 11
Mexican-American	-	-	-
Puerto Rican	-	-	-
Cuban	-	-	0
Other Hispanic	-	-	-
Native American	-	-	0
Parent Education	+	+	+
Mother in Home	+	+	+
Gender	0	0	+
Non English Use in Home	0	+	0
Pre-School	+	0	0
Parent Aspirations	N/A	+	0
Literacy Items in Home	+	+	+
Parents Ask About Sch. Work	+	0	-
Private School	0	0	0
English Competence	N/A	+	+
Educ. Locus of Control	N/A	+	+
School Attitudes	+	0	-
Read Attitudes	+	+	+
Homework	0	0	+
Math/Algebra	N/A	+	N/A
Advanced Math	N/A	+	+
Science Courses	N/A	N/A	+
Reading	N/A	+	N/A
% Free Lunch	-	-	-
% Minority in School	-	-	0
ESL Program	0	-	0

* A plus (+) indicates that the variables was significant and positively related to mathematic achievement. A minus (-) indicates that it was significant and relatively related to mathematics achievement. A zero (0) indicates no significant relationship. N/A (not applicable) indicated variable was not in analysis for that grade.

o Parental education and mother at home are positively related to mathematics achievement at all three grade levels.

o Among the home educational support variables only literacy items in the home is significantly related to mathematics achievement at all grade levels.

o Among the school related attitude variables, locus of control at grades 7 and 11, and attitudes towards reading at all three grades had significant relationships with mathematics performance. Locus of control was not measured at grade 3. Attitudes toward school had a significant, positive relationship at grade 3, but a negative relationship at grade 11. The latter anomaly may in part be due to the high collinearities with the other attitude variables.

o English competence was only measured at the seventh and eleventh grades. This variable had a significant, positive relationship with mathematics performance at both these grades.

o Among the school behaviors examined, at the seventh grade enrollment in algebra courses, and at the eleventh grade, number of science courses taken and highest level of mathematics course taken were positively related to mathematics achievement. Homework was also related to mathematics achievement at the eleventh grade.

How much of the observed difference in achievement between Asians and others can be explained by the differences in background and process variables?

Below we summarize the relative contribution of selected blocks of background and process variables to the explanation of differences in achievement between Asians and other groups. This was accomplished by investigating the reduction in differences between Asians and the other ethnic groups in regard to the following questions:

o How much of the difference in achievement between Asians and the other groups studied can be explained by controlling for demographic and language variables only?

o How much of the differences in achievement can be explained by demographic variables, language factors and home educational supports?

o How much of the differences in achievement can be explained by all of the background and process variables -- demographic variables, language factors, home educational supports, school attitudes and behaviors and school characteristics?

What is the Effect of Controlling for Background and Language Variables on Achievement?

We were particularly concerned in this study with the relationships between the use of the non-English language in the home and achievement. Table 81 presents the data on differences between Asians and other groups in mathematics performance in standard deviation units. Inspection of the differences between the various groups and the Asian students in standard deviation units before and after controlling for the background and language variables (column one compared to column two) in Table 44 indicates that these factors at best reduce the difference in mathematics performance at grade 3 from 4 to 10% of a standard deviation depending on ethnic group, at grade seven the reduction varies between -2% and 13%; and grade 11 between 3 and 15% of a standard deviation. Considering all the results from the relational analysis, in particular, the fact that only competency in English had a consistent positive direct effect on mathematics achievement, it would seem that little of the performance differential between Asian and non-Asian language groups, or for that matter performance differences among the Hispanic groups, can be explained by use of non-English language.

What is the effect of controlling for background, language variables and educational home support systems?

Columns three of Table 81 indicates the effect of controlling for the effects of the educational home support variables in addition to the demographic and language factors on mathematics achievement. The standard deviation differences indicate that home support variables reduce the differences between Asians and Hispanics at third grade an additional 3 to 10% depending on subgroup. At grade 7 controlling for the home support variables in addition to the background and language factors does not reduce the standard deviation difference between Asians and Cubans or Puerto Ricans, but they do diminish the difference further for the remaining groups by 1 to 6% depending on the group. At grade 11, once again the difference between Cubans and Asian mathematics performance is not reduced by the additional controls related to educational home supports; however, these variables reduce the difference an additional 4 to 10% depending on the other groups being compared.

Can differential performance of various ethnic groups be explained by differences in background and educational process variables?

Inspection of the differences in standard deviation units between the various groups and the Asian students before and after controlling for the background, language, home support systems and the remaining education process and school variables used in this study (column four) indicates that these variables do reduce the differences for all groups at all grade levels, but a sizeable difference remains, particularly at the third grade level.

Table 81 indicates that controlling for all the variables examined in this study cuts the difference in mathematics achievement of Hispanics compared to Asians about 10 to 20 percent of a standard deviation in the third grade, depending on the ethnic group, but reduces the difference almost in half in the seventh grade (39 to 52 percent depending on the ethnic group), and between 53 and 80 percent at the eleventh grade. The most important variables in the sense that they explained the largest proportion of the differential favoring the Asians were: (1) having positive school related attitudes, (2) doing more homework and taking more rigorous coursework.

Table 81

DIFFERENCES IN STANDARD DEVIATION UNITS IN MATH PERFORMANCE BETWEEN ASIANS AND OTHER GROUPS

	Difference in SD*Units Before Controlling For any Background and Process Variables	Difference in SD Units Controlling for Demographics and Language Use/Competence Supports	Difference in SD Units Controlling for Demographics Language Use/ Competence, and Home	Difference in SD Units After Controlling for All Background and Process Variables
Grade 3				
Mexican Americans	-.80**	-.73	-.66	-.64
Puerto Ricans	-.92	-.84	-.74	-.77
Cubans	-.93	-.84	-.79	-.77
Other Hispanics	-.70	-.67	-.61	-.62
Native Americans	-1.03	-.97	-.94	-.93
Grade 7				
Mexican Americans	-.96	-.84	-.82	- 46
Puerto Ricans	-1.13	-1.05	-1.05	-.66
Cubans	-.95	-.97	-.98	-.57
Other Hispanics	-.97	-.90	-.91	-.54
Native Americans	-1.35	-1.22	-1.21	-.83
Grade 11				
Mexican Americans	-1.06	-.9	-.79	-.30
Puerto Ricans	-1.10	-.93	-.86	-.51
Cubans	-.52	-.50	-.51	-.19
Other Hispanics	-.84	-.73	-.68	-.31
Native Americans	-.97	-.86	-.80	-.19

233

CHAPTER SIX

Discussion and Conclusions

The purpose of this study was to investigate possible differences between ethnic groups in both tested achievement and self-reported grades in school at each of three grade levels. Asian, Mexican American, Puerto Rican, Cuban, Other Hispanic, and Native American students were included in the study. The data from these ethnic groups were gathered as part of the 1985-86 NAEP administration. Students in the third, seventh, and eleventh grade were administered both a mathematics and reading test. The validity of the reading scores in grades three and eleven were circumspect because of floor effects at grade three and ceiling effects at grade eleven. As a result this study analyzed tested mathematics achievement at all three grades, but only analyzed reading achievement at grade seven.

In addition to documenting ethnic group differences in achievement, explanatory models were posed that attempted to explain ethnic group differences in achievement based on differences in language use including self-assessed competence in both English and one's native language; home educational support; attitudes towards schooling, and school behaviors.

Because the vast majority of the students in this study came from homes where a language other than English was spoken, it was of particular interest here to document how the ethnic groups differed on the language variables and then in turn how these differences may or may not be related to school and tested achievement. While there has been considerable debate, both pro and con, about the effect on educational performance of coming from a home where a language other than English is spoken, there has been little empirical evidence available from large representative samples dealing with this issue. Furthermore, the present data set was of sufficient size to allow comparisons with respect to these language issues both within language groups (e.g., Mexican American, Puerto Rican, Cuban, and Other Hispanic) as well as across language groups. However, there were too few Native American students to allow for calculation of reliable standard errors. Thus, the data from this group are presented but not discussed in the text.

Section one of this chapter discusses the findings from the descriptive analysis. It should be borne in mind that the descriptive analysis is based on one-way tables with no control variables. The second section of this chapter discusses the findings from the relational analyses. The final section discusses these results in regard to future research and policy implementation.

The Descriptive Findings

A capsule summary follows of the demographic characteristics of the Hispanic and Asian students in our sample, their achievement and the factors associated with achievement. Differences between ethnic groups in school and tested achievement as well as differences in other variables that were shown to be related to educational achievement are discussed in more detail under the summary of relational findings.

Demographic Findings

Mexican American Students. More than 75% of the Mexican American students reported that they had been born in the United States. And most had lived in the United States 5 years or more (87% of the third graders, 96% of the seventh graders, and 95% of the eleventh graders). Fifty-three percent of the third graders and a third of the seventh and eleventh graders reported that their parents had some postsecondary education. Depending on grade level, students reported that between 16% to 34% of their parents had not completed high school. More than 70% of the students reported that they lived with both parents.

Puerto Rican Students. A majority of the Puerto Rican students were born in the United States (58% of the third graders, 71% of the seventh graders and 82% of the eleventh graders), and approximately 20% were born in Puerto Rico (26% of third graders, 23% of seventh graders and 17% of eleventh graders). The vast majority of students had lived in the United States for five years or more -- 73% of the third graders, 93% of the seventh graders and 96% of the eleventh graders. Fifty-four percent of the third graders, 40% of the seventh graders and 39% of the eleventh graders reported that their parents had some postsecondary schooling, and an additional 17% of the third graders, 30% of the seventh graders and 41% of the eleventh graders reported that their parents had not graduated from high school. Approximately 58% of the students reported living with both parents.

Cubans. Depending on grade level, between 54% and 63% of the students reported that they had been born in the United States, and 80% of the third graders, 90% of the seventh graders and 95% of the eleventh graders reported that they had lived in the United States 5 years or more. Forty-nine percent of the third graders, 57% of the seventh graders and 64% of the eleventh graders reported that their parents had some postsecondary schooling. Fifty-nine percent of the third graders and 79% of the seventh graders and 80% of the eleventh graders lived with both of their parents.

Other Hispanic. A majority (58% - 69%) of the students were born in the United States -- 78% of the third graders, and 82% of the seventh graders, and slightly more than 85% of the eleventh graders reported living here at least 5 years. A bit more than half the students reported that their parents had some postsecondary education (52% to 60% depending on

grade level). Three-quarters of the third graders, 65% of the seventh graders and 70% of the eleventh graders reported that they lived with both parents.

Asian Students. Fifty-two percent of the third graders, 41% of the seventh graders and only 29% of the eleventh graders reported being born in the United States, but the vast majority have lived here five or more years (83% of the third graders, 82% of the seventh graders, and 77% of the eleventh graders). According to the students reports, more than 80% came from homes where parents had some postsecondary education (and more than 65% of the parents had graduated from college), and less than 7% came from homes where parents had failed to attain a high school education. More than three-quarters of the Asians students reported that they were living with both parents.

Achievement Patterns of the Groups Studied

Hispanic Students. The data on Hispanic achievement on the reading tests at grade seven indicate that there were no significant differences among the subgroups studied. This finding is contrary to some results of high school studies that indicate that Cuban and Other Hispanic students often outperform Mexican American and Puerto Rican students (Fligstein & Fernandez, 1985).

White students at the seventh grade from the NAEP assessment outperformed all Hispanic groups in reading, but there were no significant differences in performance between Black seventh graders and the various Hispanic subgroups. This findings is contrary to earlier NAEP studies (Baratz-Snowden & Duran, 1987; NAEP, 1986) showing Hispanic students outperforming Black youngsters. The Baratz-Snowden and Duran (1987) NAEP reading achievement study indicated that Hispanic students who came from homes where most people spoke English outperformed Black students on the reading assessment at all three grades assessed. They found no signific..t differences in the reading performance of language minority Hispanic students, e.g., students who reported that most people in their home spoke Spanish, and Black students in grades four and eight, but Black students in grade 11 read better than did Hispanic language minority eleventh graders. In addition, Koretz (1986), in his review of trends in educational achievement, concluded that Hispanic students, while performing substantially below White students on achievement measures, generally have performed somewhat higher than Black students.

The mathematics test results indicate more heterogeneity in achievement among the various Hispanic subgroups than do the reading achievement data, but the pattern is not consistent across the three grades studied. At grades three and seven, there are no significant performance differences among the subgroups. At grade eleven there are no significant differences between Cuban and Other Hispanic students, but Cuban students outperform Mexican American and Puerto Rican students. These eleventh grade findings tend to confirm earlier studies using the NLS and HS&B data (O'Malley, 1987).

The mathematics performance of Hispanic groups compared to NAEP Black students revealed only one significant difference at the third grade: Other Hispanic students outperformed Black students. However, at the seventh grade both Mexican American and Other Hispanic students outperformed Black students, and at grade 11 the Hispanic subgroups all scored significantly higher than Black students on the mathematics achievement test. An earlier NAEP mathematics assessment revealed Hispanic students (undifferentiated by subgroup) at age 9, 13 and 17 outperformed their Black agemates (NAEP, 1977). Willig et al. in a study of fourth through eighth graders also found that Mexican American youngsters outperformed Black students.

Asian Students. The descriptive analysis indicated that when mean reading test performance among groups is examined, Asian students at grade seven outperform all other groups — Whites, Blacks, and Hispanics — in their reading achievement. Asian students at grades three, seven and eleven outperform all of these groups in mathematics as well. When we were able to control for some of the fact rs that are associated with achievement, the differences between group performance were reduced, but remained significant in grades 3 and 7 as well as in grade 11 (except for the comparison with Cuban students). Asians students also reported receiving A's and mostly A's and B's on their report cards more often than did Hispanic students.

These findings confirm earlier studies on the performance of Asian students regarding mathematics performance. Unlike earlier studies using data on performance of Asians on the verbal and math sections of the SAT (Hsia, 1983), or the Matthews (1979) study of Asian students in grades 2 through 8, the NAEP data indicate no discrepancies in regard to reading achievement in comparison to mathematics achievement at grade seven, that is, in this study Asian students show superior performance in both reading and mathematics when compared to White, Black, and Hispanic grademates.

Factors Associated with Achievement

This study investigated factors that are associated with achievement. The descriptive findings from the study indicate that there are significant differences among the groups on some of the critical variables associated with achievement.

Hispanic Students. The descriptive findings on Hispanic students relating to factors presumed to be associated with achievement document much of the heterogeneity previously identified in the research literature (Ford Foundation, 1984; Hispanic Policy Development Project, 1984; Orum, 1986; Nielsen and Fernandez, 1982). While there is a general pattern in the data from many of the variables of interest that places Cuban and Other Hispanic students towards one end of a continuum and Puerto Rican and Mexican American students at the other end, the results do not consistently reach significance among these groups at all ages. Often, although the percentages appear confirmatory with the pattern described above, the data are not significant because of the large standard errors, perhaps revealing the considerable diversity both within and between the subgroups.

Similar to other research findings, the NAEP language use and competence data revealed differences among the Hispanic groups, with Cubans more likely to use Spanish at home, and Puerto Rican and Cuban students more likely than other subgroups to use Spanish outside the home. When asked to rate their competence in their non-English home language, Cuban students rated their abilities the highest and both Cuban and Puerto Rican students rated their knowledge of Spanish higher than did Mexican American seventh and eleventh graders.

The school behaviors data indicated that Puerto Rican students in grades 7 and eleven were the most likely to report that they had been retained in grade somewhere along their academic career. Unlike the earlier Nielsen and Fernandez (1981) findings from HS&B, there were no other significant differences in retention rates among the other Hispanic subgroups at those grades. There were differences, however, in curriculum and related course-taking behaviors among the students. At the high school level, where there is more diversity in curriculum than at the lower grades, there were differences in the coursetaking patterns among the Hispanic subgroups. Cuban eleventh grade students were more likely to be in an academic track than were Mexican American and Puerto Rican students. This is similar to the results obtained by Rock et al. (1985) and O'Malley (1987) regarding seniors in the HS&B data set.

Asian Students. Asians were generally likely to come from families with considerable amounts of postsecondary education, to use their non-English language with relatively high frequency in the home but less so outside the home. They also tended to have strong home educational supports, coming from families with more literacy related items in the home and from families that were more likely than other groups to send their children to private school. Asian students also tended to have many school related attitudes and behaviors that are associated with high levels of achievement -- they reported that their parents had high educational aspirations for them and the students indicated a high belief in effort as a critical factor in academic success. The Asian students were more often enrolled in the academic track and did more homework than students from other groups. These NAEP findings are supported in census reports on educational attainment of Asians (Gardner et al., 1985) and in the research literature relating to determinants of achievement in Asian students (Peng et al, 1984; Hsia, 1988).

Relational Analysis Summary

The relational analysis attempted to identify the important background and other explanatory variables, where appropriate, for explaining student variation in their: (1) language use and competence, (2) home educational support system, (3) attitudes towards schooling, (4) school behaviors, and (5) school achievement including tested performance. In addition the relational analysis investigated whether these relationships between the explanatory variables and the above outcomes differed by ethnic group. Of particular interest in this respect was whether language usage and competence was a more important explanatory variable for some ethnic groups than for others.

Another issue of particular concern in the relational analysis was whether ethnic group differences in achievement could be substantially reduced by controlling for the more "manipulable" variables such as school behaviors and possibly to a lesser extent school attitudes and literacy related items in the home. Ethnic group differences were defined by contrasts between the Asian group and each of the other ethnic groups. Asians were selected as the "standard" or contrast group since they consistently showed superior achievement on the measures used in this study. The question then becomes whether or not the differential achievement pattern in favor of the Asians can be explained by accompanying differences in the so-called manipulable variables?

The summaries of the relational results will be grouped by outcomes. The ordering of these outcomes as well as which explanatory variables were included were specified by the path analysis model presented in chapter 5.

Language Use and Competence

In general Cubans at all grade levels reported that they spoke their native language in the home more frequently than did the Asians. With the exception of the Mexican Americans who spoke their native language less frequently than did the Asians, there were little or no other group differences in frequency of use in the home. With respect to competence in their native language, the Asians report that they are less competent than the Hispanic groups with the exception of the Mexican American students.

In terms of competence in English at grades 7 and 11, the Asians reported less competence than all but one of the Hispanic groups (Other Hispanics). The picture emerges of a high achieving Asian group who speak their native language in the home with about the same frequency as the Puerto Rican and Other Hispanic students, but at the same time report less competency in their native language. The Asians also report less competence, in general, in their mastery of English when compared to most of the Hispanic groups.

Home Educational Support System

The home educational support system consisted of five variables reflecting parental beliefs and behaviors with respect to providing a positive educational environment. The five variables are (1) attendance at pre-school, (2) literacy related items in the home, (3) family asks about school work, (4) attendance at a private school, and (5) parental educational aspirations for the child. There was a tendency for the Asians to be more likely to come from homes with stronger educational support systems than the other groups. This finding was particularly marked for the Asian versus Mexican American contrast with respect to parents educational aspirations for their child. The other important explanatory variable besides ethnic group membership was parental education, which had a positive effect on many of the home educational support variables.

School Related Attitudes

The constellation of school related attitudes that were used in the path analysis included locus of control related to school achievement, attitudes toward school, and attitudes towards reading. At the seventh grade the Asians report significantly higher locus of control than all of the other groups. That is, the Asians report that their success or failures in school are more likely the result of their own efforts rather than external forces outside of their control. Other important explanatory variables for locus of control at the seventh grade were competence in English, parental education, mother living at home, attendance at a private school, and parents asking about school work. It is important to note that English competence is an important explanatory variable for all groups.

While there is no significant difference between the ethnic groups on locus of control at the eleventh grade, English competence remains an important predictor of locus of control for all groups. Clearly there is a strong association between self-assessments of English competence and positive feelings of locus of control for members of all ethnic groups.

The remaining two attitudinal variables show very similar patterns with respect to their important explanatory variables. That is, Asians tend to have more positive attitudes in the seventh grade than do most of the Hispanic groups. These differences in favor of the Asians show consistent reductions at the eleventh grade. Once again English competency tended to be an important positive predictor for all the attitudinal variables in almost all of the groups.

School Behaviors

The school behaviors that were predicted from background, home educational support, language usage and competence, and school related attitudes were time spent on homework and highest mathematics courses taken (grade 11 only). At both the seventh and the eleventh grade, Asians report doing more homework than the other ethnic groups. This differential increases as one goes from the seventh to the eleventh grade, possibly reflecting the fact that Asians may be taking more demanding courses. Parents asking about school work and a number of the home educational support variables also predicted amount of homework. These latter relationships tended to vary from grade to grade however.

Similar to the homework results, the regression analysis of the highest level of mathematics course taken shows large differentials in favor of the Asians when compared to all other groups. Other important explanatory variables included parental educational aspirations for the child and a number of the home educational support variables.

Achievement

Three achievement outcomes were examined in the path analysis -- grades, mathematics scores, and at grade 7, reading performance. The Asians had

significantly higher grades than all other groups at both grades 7 and 11. That is, after statistically controlling for differences in: (1) background demographics and language variables, (2) home educational support systems, (3) attitudes towards schooling, (4) school behaviors such as courses taken and amount of homework, and (5) type of attended, there remained significant differences in school achievement favoring Asians. Frequency of second language use in the home had a significant positive relationship with grades in the total sample as did English competence. Positive attitudes towards schooling and amount of homework done showed relatively consistent signi-ficant relationships with school achievement as measured by grades. It should be kept in mind that the Asians not only report superior grades but also show advantages over the other groups in those areas that may be driving performance in school, e.g., positive school attitudes and effort as measured by advanced coursework and homework done.

Reading achievement was analyzed at the seventh grade only, and the results indicated that when controlling for the above background and process variables, the Asians performed significantly better than all the other groups. Locus of control, English competency, and not surprisingly, positive attitudes toward reading tended to be important explanatory variables in almost all groups. Frequency of second language usage in the home had little or no relationship with reading performance.

Mathematics performance was measured at all three grades. The Asian versus the other group contrasts in grades 3 and 7 were a complete repli-cation of the results found with the other two achievement variables-grades and reading performance. That is, the Asians demonstrated superior tested mathematics performance when compared to all other ethnic groups in both grades 3 and 7.

The story was quite similar in the eleventh grade with the exception that the differential in favor of the Asian students was only significant when contrasted with the Mexican American, Puerto Rican, and Other Hispanic students. Other important explanatory variables were locus of control at both the seventh and the eleventh grade and school behaviors such as courses taken and homework done at the eleventh grade. There is a tendency for more of the home educational support system variables to be important at the earliest grade (grade 3) and then the attitudinal and school behaviors become more important at the seventh and the eleventh grades. This finding is partly artifactual in the sense that most of the school behavior items simply are not relevant for the third graders.

With respect to differences in achievement within ethnic groups, there was little in the way of consistent performance differences found among the Hispanic groups at grades three and seven. The one exception being that the Puerto Rican students performed less well in reading and mathematics than did the Mexican American students at grade seven. At grade 11, the Cuban students showed significantly better mathematics performance than the Puerto Rican group.

What have we learned about the relationship between language use and competence and achievement? There is little or no consistent relationship

between any of the achievement outcomes and frequency of use of a non-English language in the home. Competency in English, however, shows relatively strong relationships with grades in school and also with important mediating variables such as locus of control. It also showed relatively small but significant relationships with mathematics achievement at grades 7 and 11. It would appear that whether or not one comes from a home where a second language is frequently spoken is not an important issue in itself, but whether or not one is competent in English is.

From a path analysis framework, it is interesting to note that while the frequency of speaking the second language in the home had either little or no direct effect on tested achievement, it did have an indirect effect on grades and tested achievement "working through" English competency. That is, frequency of non-English language use was negatively related to English competency which in turn was positively related to locus of control, grades, and to a lesser extent tested achievement. While frequency of use of one's non-English language in the home is not a variable that can be easily manipulated, the development of English competency is manipulable and should be of high priority within the school systems. Careful inspection of all the data, that is all ethnic groups and all achievement criteria, suggests that when use of a non-English language in the home had a significant direct effect on an achievement outcome it was just as likely to be positive (e.g., grades for Asians) as negative (e.g., mathematics scores for Puerto Ricans).

The question of whether or not differences between the high achieving Asians and the remaining groups can be explained by differences in background and process variables can for the most part be answered "no." Controlling for background and process variables reduces the initial differences in achievement by about a half at grades 3 and 7. The reduction in difference is more marked at grade 11, but one has to temper one's enthusiasm in the sense that selection factors such as differential dropout rates may also be operating here.

In summary the results suggest that there are significant differences favoring Asian students in both overall grades and tested achievement when they are contrasted with students from selected Hispanic groups. These differences were reduced significantly when variables describing background, attitudes toward schooling, and school behaviors were statistically controlled. While the differences in favor of the Asian students were reduced, they still remained significant at grade 3 and 7. At grade 11 the differences favoring the Asians remained significant with respect to grades in school but the differential became non-significant in contrast with Cuban students on tested achievement in mathematics. When the various background, schooling attitudes, and behaviors were statistically controlled, few consistent achievement differences were found among the Hispanic groups.

Language use and competence played a relatively minor role in explaining the higher performance of the Asians. However, language was a factor in explaining achievement within groups. It was primarily competency in English that was the critical factor here, and not the frequency of use of a non-English language in the home.

The most important variables in the sense that they explained the largest proportion of the differential favoring the Asians were: (1) having positive school related attitudes, (2) doing more homework and taking more rigorous coursework.

Implications for Policy Development and Research

Policy Implications

Given the limitations of the data described earlier, one must be cautious in overgeneralizing from the findings here to policy development and implementation. Nonetheless, some of the findings are consistent and confirmatory of previous research and should not be ignored. In particular,

o The findings here, as elsewhere, indicate the importance of coursetaking to achievement. Although there are many reasons why students are not enrolled in more rigorous, academic courses at the high school level -- previous academic performance in the subject area, lack of interest, poor counseling, unavailable teaching personnel, to name a few -- it is important to prepare and encourage Hispanic students to enroll in these courses. Indeed, the data presented here indicate that the differentiation in course taking is already present at the seventh grade, where Asians are far more likely than other groups to be taking pre-algebra or algebra, courses that are an essential element in the academic, college preparatory curriculum.

o Locus of control appears to be an important factor in achievement. This may be an area where schools can intervene to make a difference. Building confidence in one's ability to make the difference, teaching values that stress self-efficacy and the relationship between effort and success, rewarding effort and assuring that unfair institutional barriers to success are not present and undermining individual efforts are areas that schools could develop policies and activities.

o English competence is important. It is related in this study to factors that directly predict achievement. While the methodology employed here cannot identify the most effective practices relating to teaching language minority students English, taken together the findings do serve to illustrate the importance of learning English. to academic success.

Research Needs

In order for NAEP and other national data bases to be more policy relevant, the methodologies related to large scale data collection should be examined in order to develop ways to:

o collect data about young students in a cost-effective manner that identifies sources beyond, or more importantly instead of, self-report for critical variables such as parent education, type of school program and the like.

o collect better, more direct socioeconomic data on respondents. (This issue is related to the first need for more validation of the self-report nature of NAEP student data.) While some might argue that the parent education level and the literacy related items are proxies of socioeconomic status, better data on more direct measures, e.g. family income, would improve the data set considerably.

o collect data on student school histories and related school experiences, and, in the case of language minority students, particularly data regarding participation in special programs and the characteristics of those programs.

o collect data on language minority students that more directly measures language competence.

o collect data on large enough samples of Native Americans to make reliable estimates.

o collect data on Asian American subgroups so as to empirically document the diversity within those groups.

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178

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180

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APPENDIX   A

Appendix A

SPECIAL NAEP ASSESSMENT
SAMPLE DESIGN

A. SPECIAL NAEP ASSESSMENT -- SAMPLE DESIGN

A.1   School Sample -- NAEP and SN-Only

After the regular NAEP school sa. 1ple was selected (including samples for spiral, bridge, and Common Culture assessment), he schools in a PSU were classified as shown in Figure A-1. The sample of schools in w. 'ch only the SNA was administered was selected on the basis of this classification and following the specific rules displayed in Figure A-1 and outlined in Section A.2.2. All NAEP schools in classes 1a and 1b were to be included in the SNA school sample to reduce the total number of schools to be worked.

A.2   School Eligibility: SN-Only Sample

SN-only schools are schools eligible for SN and not already selected for the regular NAEP sample. Prior to SN-only school sample selection, a school was designated as eligible for the Special NAEP Assessment (SNA) if

- There were at least 10 Hispanic or Asian eligibles, and the total grage was less than 150, age 9 (or 200, ages 13 and 17); or

- At least 10 percent of the eligibles were Hispanic or Asian, and the total grage was greater than or equal to 150, age 9 (or 200, ages 13 and 17).

Estimates of grage (grage includes students who are in the specified age or in the modal grade for that age) were based on enrollment and grade span information from the Quality Education Data (QED) school universe file. Estimates of minority enrollment came from the Office of Civil Rights, supplemented by a special survey of selected large school districts not covered or apparently not sufficiently covered by OCR.

A.2.1   Within-PSU Sampling Fractions

Preliminary tabulations on the school universe file showed that of Hispanics, Asians and American Indians, only Hispanics were sufficiently clustered in schools to make their oversampling a principal desig feature of the SN-only school

A-1

Figure A-1. Classification of Schools

A-2

256

257
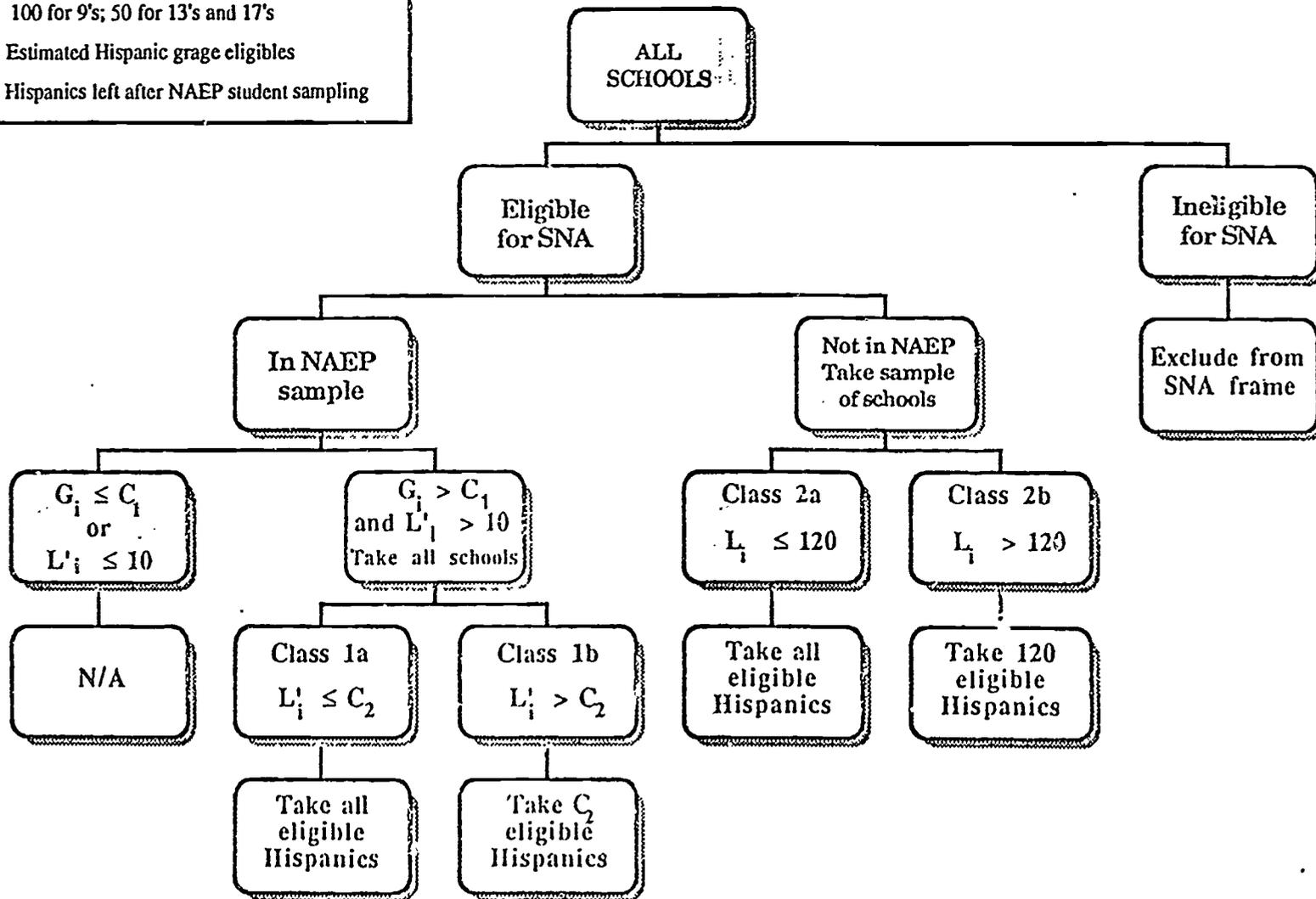
sample (classes 2a and 2b). The target sample sizes per grage for the specified four Hispanic subgroups are shown below.

Hispanic Subgroup	Target SN Student Sample Size
Mexican	1,500
Puerto Rican	1,100
Cuban	800
Other Hispanic	1,100
Total	4,500

The first step in SN-only school sample selection was to determine the fraction of Hispanics to be tested in each PSU. For this purpose, PSU's were classified as being primarily one of the four specified Hispanic subgroups, based on the distribution of those subgroups within the PSU in the 1980 Census of Population.

Before determining the sampling fraction, the targets shown above were inflated for nonresponse, and adjusted by subtracting the expected number of Hispanics, by subgroup, that would come into the SNA sample from the NAEP 1a and 1b sample. For a given age class, the sampling fractions to be applied in each PSU group were obtained by solving the system of linear equations:

$$A f = t$$

where

A   is a matrix containing weighted counts of eligible Hispanics in SN-eligible schools in the sampled PSU's (weighted by the PSU weight and summed across all SN eligible schools not already sampled for NAEP), by subgroup (rows) and PSU group (columns);

t   is the vector of targets by subgroup, adjusted for those coming into the SNA sample through the NAEP overlap schools; and

f   is the vector of sampling rates to be applied to the PSU group.

The resulting sampling rates, f_S, by PSU group are shown below.

A-3

PSU's primarily	9's	13's	17's
Mexican American	.008	.004	0
Puerto Rico	.056	.051	.076
Cuban	.133	.129	.187
Other Hispanic	.027	.027	.041

The sampling rates for Mexican Americans in the SN-only PSUs are low because nearly sufficient samples are obtained from the regular NAEP schools.

A.2.2   School Selection

As indicated in Figure A-1, all NAEP sample schools eligible for SNA and with more than 10 expected Hispanics remaining after the NAEP sampling were to be brought into the SNA sample (classes 1a and 1b).

SN-only schools (classes 2a and 2b) were sampled as follows:

Let

$$f_{h(s)} = f_s/P_h$$

$$= \text{the sampling rate to be applied in PSU h in PSU group s.}$$

where P_h is the probability of selecting PSU h.

Class 2a

Let

M_{h2a} = the number of schools in the class. The number of schools to be selected was

m_{h2a} = $f_{h(s)} M_{h2a}$

and the schools were selected with equal probability. All eligible Hispanic students in each selected school were to be tested.

A-4

Class 2b

Let

M_{h2b} = the number of schools in the class. To each school i was assigned the measure of size L_i = estimated number of eligible Hispanic students in the school. The number of schools to be selected was

$$m_{h2b} = f_{h(s)} \sum_{i=1}^{M_{h2b}} L_i / 120 .$$

The schools were selected with probability proportionate to size L_i, with any school with a measure of size exceeding 2/3 of the final sampling interval taken with certainty. A random sample of expected size 120 was to be selected from among the eligible Hispanic students in the school.

The procedures described above produced a preliminary SN school sample distributed among the four sampling classes as follows:

Class		9	13	17
NAEP	{1a	7	17	15
schools	{1b	1	26	57
SN only	{2a	127	68	14
schools	{2b	11	16	24
Total schools		$\overline{146}$	$\overline{127}$	$\overline{110}$

Under our assumptions concerning school and student attrition and the distribution of the four Hispanic subgroups within each PSU, this sample of schools appeared to be adequate to achieve the sample sizes specified for the four Hispanic subgroups.

A.3   Sampling Asians and American Indians

The strategy developed for sampling Asians and American Indians was different from that chosen for the Hispanic subgroups. We knew that very few schools would have a high concentration of Asian or American Indian students and that the OCR data (as supplemented), so useful in designing the Hispanic sample, would be of limited

value. On the other hand, we expected that there would be some Asians and American Indians in quite a few of our sampled schools, and we needed a mechanism for sampling some of them for the Special NAEP Assessment, whether or not OCR gave advance knowledge of their presence.

The specifics of student selection depended on whether the school was NAEP or SN-only. In NAEP schools, half of all Asian and American Indian students sampled for BIB spiral assessment were to be given SN booklets. Then in schools where fewer than 100 percent of eligibles were sampled for NAEP and where additional sampling of Hispanics for the SNA, if any, did not bring the total sample size to the upper limit permitted by the design, the district supervisor was instructed to sample additional Asians and American Indians, up to the permitted maximum, provided that OCR (or the Principal's Questionnaire) indicated that Asians or American Indians were indeed present. In an SN-only school, a single student selection rate was set for Asians and American Indians, based on advance information on their concentration within that school (the principal's questionnaire if available, otherwise OCR), the goal being to produce the largest combined student sample within the limit established for SN-only schools.

The desired sample size for Asians and American Indians was 800 completed SN booklets for each group, per age. A preliminary look at the expected student yield from our initial sample of schools, following the sampling rules outlined above, showed that serious shortfalls were likely in the age 9 and 13 samples for Asians and across all three ages for American Indians.

A.4   Updated SN Eligibility

The Principal's Questionnaire obtained detailed information on each school's minority composition and enrollment by grade. This was used to update the estimated number of eligibles and to set the final within-school sampling rates for the Special NAEP Assessment. Some NAEP-selected schools which had been classified as "SN ineligible" were found to have significant concentrations of minority students. The rules for deciding which of the NAEP-sampled schools were to have an SN assessment were modified on the basis of this new information:

Hispanics would be SN-assessed in a NAEP-selected school if

- The PQ indicated that there were Hispanics enrolled;

- The school had been allocated a spiral assessment; and

- The PQ estimate of grage was greater than or equal to 166, age 9; 244, age 13; and 233, age 17.

Asians (American Indians) would be SN-assessed in a NAEP-selected school if

- There were Asians (American Indians) enrolled; and

- The school had been allocated a spiral assessment

A.5   SNA Within School Student Sampling

Figure A-2 illustrates the decision procedure underlying the setting of SNA student sampling rates within NAEP schools. Each participating school was asked to prepare three separate lists containing the name, date of birth and current grade of each eligible student. The first list was to contain students that the school identified as Hispanics, the second, Asians and American Indians and the third, all remaining students. The NAEP student samples (spiral and tape) were systematic samples drawn from the three lists combined, as if they constituted one long list. When NAEP sampling was completed, SN sampling proceeded but involved only the first two lists.

Figure A-3 outlines the much simpler procedures implemented in the SN-only schools.

A.6 Sample Sizes Achieved

Table A-1 shows the actual sample sizes achieved for the various components of the SNA school and student samples. Under "cooperating schools" is the count of schools where one or more students of the race/ethnicity specified was sampled for SN. In the adjacent column is the number of such students SN assessed. The race/ethnicity in this table reflects the classification of students identified by each school in preparing its student listing forms. This is in contrast to Table A-2 where race/ethnicity of students assessed for SNA is based on student self-identification. This latter classification is considered more meaningful and will be used in the analysis. Table A-2 also provides more detailed information on Hispanics, showing counts by the four subgroups for which separate analyses were planned. We note that tabulations of the NAEP assessed students can provide information on the number of Hispanic students not included on the lists of Hispanics students prepared by the SN-eligible schools.

Figure A-2. SN student sampling within NAEP schools

G_i = PQ estimate of number of eligibles in school i

C_1 = 166, age; 244, age 13; 233, age 17

C_2 = 250, ages 9 and 17; 300, age 13

P_{H_i} = % Hispanic from PQ

P_{A_i} = % Asian from PQ

P_{I_i} = % American Indian from PQ

NAEP Schools

Spiral-allocated schools — No → Tape-only schools: No SNA

Yes

Sample for NAEP

Give 1/2 of spiral-sampled Asians SN booklets

Give 1/2 of spiral-sampled Indians SN booklets

$G_i > C_1$? — No → No Hispanic SN; no additional SN sampling of Asians or American Indians

Yes

$C_2 - C_1 \geq P_{H_i}(G_i - C_1)$? — No → Hispanics not already sampled for NAEP are sampled for SN with a rate of $(C_2 - C_1)/P_{H_i}(G_i - C_1)$ → No additional SN sampling of Asians or American Indians

Yes

All Hispanics not already sampled for NAEP are given SN booklets

No additional sampling of Asians or American Indians ← No — $P_{A_i} + P_{I_i} > 0$?

Yes

$C_2 - C_1 - P_{H_i}(G_i - C_1)$
$< (P_{A_i} + P_{I_i})(G_i - C_1)$? — No → All Asians and American Indians not already sampled for NAEP or SN are given SN booklets

Asians and American Indians not already sampled for NAEP are sampled for SN at a rate of
$$\frac{C_2 - C_1 - P_{H_i}(G_i - C_1)}{(P_{A_i} + P_{I_i})(G_i - C_1)}$$

A-9

264

Figure A-3. Student sampling within SN-only schools

SN-only schools

$P_{H_i} > 0?$ —No→ No Hispanics sampled

Yes

Sample Hispanics for SN at rate
$$MIN(C_3, P_{H_i} G_i) / P_{H_i} G_i$$

$P_{A_i} + P_{I_i} > 0?$ —No→ No Asians or American Indians sampled

Yes

Sample Asians and American Indians at rate
$$MIN(C_3, (P_{A_i} + P_{I_i}) G_i) / ((P_{A_i} + P_{I_i}) G_i)$$
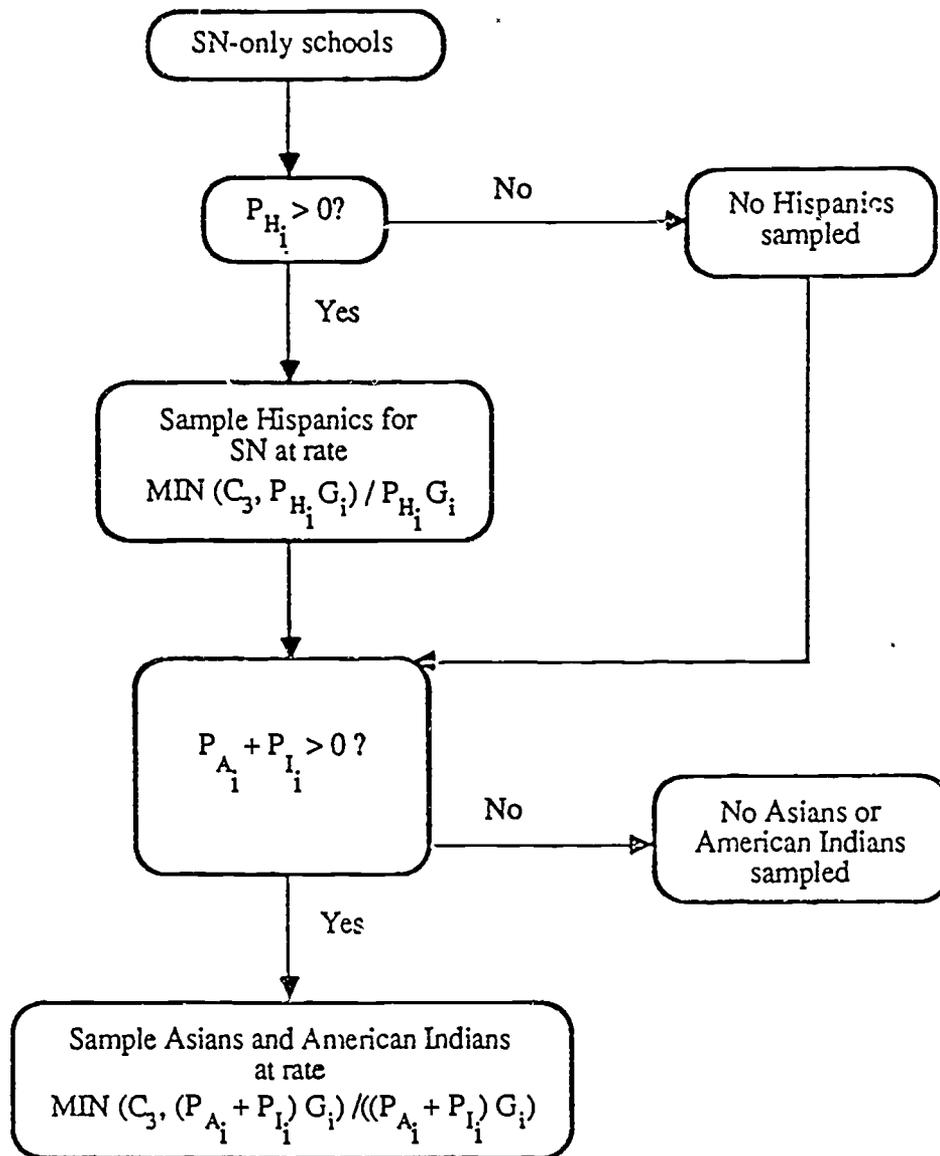
G_i = PQ estimates of number of eligibles in school i

C_3 = 120, ages 9 and 17; 150, age 13

P_{H_i} = % Hispanic from PQ

P_{A_i} = % Asian from PQ

P_{I_i} = % American Indian from PQ

A-10

Table A-1. NAEP, Year 17: Special NAEP sample -- school and student sample sizes

Age/Grade	NAEP or SN-only School	Hispanics*		Asians and American Indians*		All SN	
		Cooperating schools	SN-assessed students	Cooperating schools	SN-assessed students	Cooperating schools	SN-assessed students
9/4	NAEP	17	232	147	408	153	640
	SN-only	116	3.778	61	352	116	4,130
	Total	133	4,010	208	760	269	4,770
13/7	NAEP	66	1,766	148	835	159	2,601
	SN-only	59	2,334	32	344	59	2,678
	Total	125	4,100	180	1,179	218	5,279
17/11	NAEP	146	2,281	207	1,185	231	3,466
	SN-only	27	1,535	17	241	27	1,776
	Total	173	3,816	224	1,426	258	5,242

* Racial/Ethnic classification according to school

Table A-2. Counts of Special NAEP assessed students, by school sample type and race/ethnicity: NAEP, Year 17

Age	Racial / Ethnic self-identification	Regular NAEP Schools	SN only schools	Total SN assessed
	White	120	385	505
	Black	40	71	111
	Total Hispanic	249	3,417	3,666
	Mexican American	100	1,371	1,471
9	Puerto Rican	45	722	767
	Cuban	10	354	364
	Other Hispanic Background	67	768	835
	Hispanic, no background info.	27	202	229
	Asian or Pacific Islander	147	179	326
	American Indian or Alaskan Native	81	73	154
	Unclassified	3	5	8
	Total	640	4,130	. 4,770
	White	159	104	263
	Black	33	31	64
	Hispanic	1,770	2,278	4,048
	Mexican American	1,175	747	1,922
13	Puerto Rican	157	555	712
	Cuban	79	345	424
	Other Hispanic Background	280	514	794
	Hispanic, no background info.	79	117	196
	Asian or Pacific Islander	496	213	709
	American Indian or Alaskan Native	139	52	191
	Unclassified	4	0	4
	Total	2,601	2,678	5,279
	White	259	36	295
	Black	39	29	68
	Total Hispanic	2,160	1,515	3,675
	Mexican American	1,264	122	1,386
17	Puerto Rican	288	444	732
	Cuban	119	555	674
	Other Hispanic Background	437	369	806
	Hispanic, no background info.	. 52	25	77
	Asian or Pacific Islander	842	193	1,035
	American Indian or Alaskan Native	162	3	165
	Unclassified	4	0	4
	Total	3,466	1,776	5,242

SPECIAL NAEP ASSESSMENT
WEIGHTING PROCEDURES

209

B. SPECIAL NAEP ASSESSMENT -- WEIGHTING PROCEDURES AND VARIANCE ESTIMATION

B.1   Base Weights

The base weight assigned to an SN-assessed student is the reciprocal of the probability that the student was sampled for the Language Probe. That probability is the product of four factors:

(1)   the probability that the PSU was selected;

(2)   the conditional probability, given the PSU, that the school was selected;

(3)   the conditional probability, given the sample of schools in a PSU, that the school was allocated an SN session; and

(4)   the conditional probability given the school that the student was invited to the SN session.

Thus, the base weight for a student may be expressed as the product

$$W = W_1 \cdot W_2 \cdot W_3 \cdot W_4$$

where

W_1 = PSU weight;

W_2 = school weight, conditional on the PSU;

W_3 = SN session allocation weight, conditional on the sample of schools; and

W_4 = student weight, conditional on the individual school.

The PSU weight, W_1, is the reciprocal of the probability of selection for the PSU. In the 94 PSU sample, 34 large PSUs were selected with certainty and have a PSU weight of 1.0. The remaining 60 PSUs were selected using a one PSU per stratum design with probabilities proportional to 1980 population.

The school weight, W_2, is the reciprocal of the probability of selection of the school conditional on the PSU. For regular NAEP schools this probability equals:

B-1

[1 - Pr(school was selected for bridge sample)] ×
Pr(school selected for NAEP | school not selected for bridge).

For SN-only schools in the 94 PSU sample this probability equals:

[1 - Pr(school was selected for bridge or regular NAEP samples)] ×
Pr(school selected for SN-only | school not selected for bridge or regular NAEP).

The session allocation weight, W_3, is equal to 1.0 for all SN-only schools. In the regular NAEP sample, an SN assessment was conducted only in spiral-allocated schools. The session allocation weight therefore reflects the probability that the NAEP-selected school was allocated a spiral session.

For language minority sessions in SN-only schools, the within-school student weights, W_4, are simply the sampling intervals that were applied to the lists of eligible Hispanics, Asians and American Indians prepared by the school. For SN sessions in regular NAEP schools, the within-school student weights account for the conditional sampling intervals for SN, as well as any sampling for spiral or tape sessions that preceded SN sampling. The weights are the reciprocals of the sampling rates for students eligible for SN assessment.

B.2   Adjustment of Base Weights for Nonresponse

The base weight for a student was adjusted by three nonresponse factors: one to adjust for noncooperating schools, the second to adjust for allocated sessions which were not conducted, and the third to adjust for students who were invited to the assessment but did not appear either in the scheduled session or a makeup session. Thus, the nonresponse adjusted weight for a student was of the form:

$$W' = W_1 \cdot W_2 \cdot f_2 \cdot W_3 \cdot f_3 \cdot W_4 \cdot f_4$$

where the nonresponse adjustment factors, f_2, f_3, and f_4 were computed, when appropriate, as described below for the different parts of the SN sample.

B-2

270

B.2.1 Nonresponse Adjustments for the SN Sampie Within Regular NAEP Schools

The base weights for SN students in regular NAEP schools were adjusted by all three of the nonresponse factors; f_2, f_3, and f_4. Because in these schools SN assessments were conducted only in conjunction with spiral assessments, the spiral allocation weight and the associated nonresponse adjustment factor are incorporated into the nonresponse adjusted base weight for these students.

B.2.1.1 Regular NAEP School Nonresponse Adjustment

For the regular NAEP schools, the school nonresponse adjustment was intended to compensate for school nonresponse occurring prior to spiral and/or tape session assignment. These factors were computed separately within a PSU for up to three classes of schools. The number of classes within a PSU was based on the number of sampled schools, the nonresponse pattern, and the distribution of grage-eligible students. In most cases, only one class was identified in the PSU for each of the three age groups.

For any school nonresponse class "n_2" in PSU "h", the school nonresponse adjustment facto., f_{2hn_2}, was given by

$$f_{2hn_2} = \frac{\displaystyle\sum_{i \in A_{hn_2}} W_{2hi} \cdot G_{hi}}{\displaystyle\sum_{i \in B_{hn_2}} W_{2hi} \cdot G_{hi}}$$

where

W_{2hi} = the school weight for school "i" in PSU "h";

G_{hi} = the estimated number of grage-eligible students in school "i" in PSU "h" based on QED data;

set A_{hn_2} consists of the original sample of schools (cooperating and noncooperating schools, but not substitutes);

and

set B_{hn_2} consists of all schools cooperating at the time of session allocation (including schools that were substituted for noncooperating schools).

Note that, for a substitute school, W_{2hi} was defined as the school weight of the originally-selected school for which it was a substitute.

B.2.1.2 Regular NAEP Session Nonresponse Adjustment

The spiral session nonresponse adjustment was intended to compensate for school nonresponse occurring after spiral session assignment. For the regular NAEP schools, these factors were computed separately within a PSU for one or two classes of school in each of the three age groups. The number of classes within a PSU was based on the same considerations described in the preceding section. In most cases, only one nonresponse class was identified in the PSU for each age group.

For any nonresponse class "n3" in PSU "h", the spiral session nonresponse adjustment factor, f_{3hn_3}, was given by

$$ f_{3hn_3} = \frac{\displaystyle\sum_{i \in A_{hn_3}} W_{2hi} \cdot f_{2hi} \cdot W_{3hi} \cdot G_{hi}}{\displaystyle\sum_{i \in B_{hn_3}} W_{2hi} \cdot f_{2hi} \cdot W_{3hi} \cdot G_{hi}} $$

where

W_{2hi} = the school weight for school "i" in PSU "h";

f_{2hi} = the school nonresponse adjustment for school "i" in PSU "h";

W_{3hi} = the spiral session allocation weight for school "i" in PSU "h";

G_{hi} = the estimated number of grage-eligible students in school "i" in PSU "h", based on QED data;

set A_{hn_3} consists of all schools considered inscope and cooperating at the time of spiral session allocation;

and

set B_{hn_3} consists of all spiral-allocated schools which ultimately cooperated.

B-4

B.2.1.3 Student Nonresponse Adjustment for SN-Sampled Students in Regular NAEP Schools

For SN sessions in regular NAEP schools, the student nonresponse adjustment was made separately for two classes of students in PSU "h" by age class: those in or above the modal grade for their age and those below. For each class "c" in PSU "h", the student nonresponse adjustment factor, f_{4hc}, was computed by

$$
f_{4hc} = \frac{\sum_{A_{hc}} W_{2hi} \cdot f_{2hi} \cdot W_{3hi} \cdot f_{3hi} \cdot W_{4hi}}{\sum_{B_{hc}} W_{2hi} \cdot f_{2hi} \cdot W_{3hi} \cdot f_{3hi} \cdot W_{4hi}}
$$

where

W_{2hi} = the school weight for school "i" in PSU "h";

f_{2hi} = the school nonresponse adjustment factor for regular NAEP school "i" in PSU "h";

W_{3hi} = the session allocation weight for spiral sessions in school "i" in PSU "h";

f_{3hi} = the session nonresponse adjustment factor for spiral sessions in school "i" in PSU "h";

W_{4hij} = the within school SN-selected student weight for student "j" in school "i" in PSU "h";

Set A_{hc} = consists of the students in class "c" in school "i" in PSU "h" who were invited to an SN session;

and

Set B_{hc} = consists of the students in class "c" in school "i" in PSU "h" who were assessed in an SN session.

B.2.2 Nonresponse Adjustment for the SN-Only Sample

The base weights for students from the SN-Only school sample were adjusted by two of the three potential nonresponse factors, f_2 and f_4. The adjustment

B-5

factor f_3 applies only to SN students assessed in regular NAEP schools, and was set uniformly to 1.0 for students in the SN-Only sample.

B.2.2.1   SN-Only School Nonresponse Adjustment

A school nonresponse adjustment factor for the SN-Only schools was computed separately for each of four classes of schools in the three age groups. These nonresponse adjustment classes were composed of PSUs grouped by the predominant Hispanic cultural subgroup: (1) Mexican, (2) Puerto Rican, (3) Cuban, and (4) other Hispanic, according to which within-PSU rates for SN-Only school sample selection had been set.

For any nonresponse class "n_2", the school nonresponse adjustment factor, f_{2n_2}, is given by

$$f_{2n_2} = \frac{\sum_{i \in A_{n_2}} W_{1h} \cdot W_{2hi} \cdot H_{hi}}{\sum_{i \in B_{n_2}} W_{1h} \cdot W_{2hi} \cdot H_{hi}}$$

where

W_{1h} =   the PSU weight for PSU "h";

W_{2hi} =   the school weight for school "i" in PSU "h";

H_{hi} =   the estimated number of eligible Hispanics in school "i" in PSU "h";

set A_{n_2} consists of the original sample schools (cooperating and noncooperating schools, but not substitutes); and

set B_{n_2} consists of all cooperating schools (including schools that were substituted for noncooperating schools).

Note that, for a substitute school, W_{2hi} was defined as the school weight of the originally-selected school for which it is a substitute and that the H_{hi} was obtained by multiplying the estimated proportion Hispanic in the school (obtained from OCR or the

274

supplemental survey) by the estimated number of eligible in the school for the specified age and grade class (from QED).

B.2.2.2 Student Nonresponse Adjustment for Students Sampled in SN-Only Schools

For sessions in SN-Only schools, the student nonresponse adjustment was made separately for two classes of students in PSU "h" by age class: those in or above the grade modal for their age, and those below. For each class "c" in PSU "h", the student nonresponse adjustment factor, f_{4hc}, was computed by

$$ f_{4hc} = \frac{\sum_{A_{hc}} W_{2hi} \cdot f_{2h_i} \cdot W_{4hij}}{\sum_{B_{hc}} W_{2hi} \cdot f_{2h_i} \cdot W_{4hij}} $$

where

W_{1h} = the PSU weight for PSU "h";

W_{2hi} = the school weight for school "i" in PSU h;

f_{2hi} = the school nonresponse adjustment factor for Hispanic SNA school "i" in PSU "h";

W_{4hij} = the within school student weight for student "j" in school "i" in PSU "h";

Set A_{hc} = consists of the students in class "c" in school "i" in PSU "h" who were invited to an SN session;

and

Set B_{hc} = consists of the students in class "c" in school "i" in PSU "h" who were assessed in an SN session.

B.3 Combining SN Assessment Data from NAEP Schools with that from SN-Only Schools

The Special NAEP Assessment sample was not designed to be representative of all eligible SN students nationwide, but rather of a particular

subpopulation of SN students. (See Section A.2.) Fully aggregated estimates of SN student characteristics and performance may be made independently using the nonresponse adjusted weights of SN-assessed students from either NAEP schools or from SN-Only schools, although the subpopulations to which those estimates weight are not identical. Specifically:

Asians and American Indians (as classified by school)

1. Estimates from NAEP school data should weight up to all eligible Asians (American Indians)

2. Estimates from SN-only school data should weight up to all eligible Asians (American Indians) in SN-eligible school (as defined in Section A.2).

Hispanics (as classified by school)

1. Estimates from NAEP school data weight up to all eligible Hispanics in "large" schools (where by large we mean large enough not to have had all eligible students sampled for spiral or tape assessment. See Figure A-2.)

2. Estimates from SN-only school data weight up to all eligible Hispanics in SN-eligible schools. (See Section A.2)

From the above discussion it should be apparent that for Asians and American Indians population 2 is a subset of population 1. Simple pooling of data from NAEP and SN-only schools then would double count population 2.

Similarly, for Hispanics the subpopulation that would be double counted by the simple pooling of data would be Hispanics in large SN-eligible schools.

We note that estimates of the fraction of the total SN eligible population based on self responses can be made from the regular NAEP for comparison with the results of the SN probe.

A weighting factor f_5 was developed separately for Asians and American Indians and for Hispanics that allows the pooling of SN data from both samples without double-counting. Table B-1 details how the sample of SN-assessed students was distributed across the determinants of the subpopulation to which each sample weights:

B-8

Table B-1. NAEP, Year 17: Special NAEP Assessment

Counts of SNA-assessed students by SLF, school attributes and sample type showing partial overlap of domain between NAEP and SN-only samples and factors for composite SN estimator

Hispanics (SLF A)

Age	School attributes		Assessed students in NAEP schools (a)	Factor for composite estimator a/(a+b)	Assessed students in SN-only schools (b)	Factor for composite estimator (b/a+b)	
	Large	SN eligible					
9	Yes	No	28	1.0000	-	-	Overlap
	Yes	Yes	204	0.1528	1,131	0.8472	
	No	Yes	-	-	2,647	1.0000	
13	Yes	No	178	1.0000	-	-	Overlap
	Yes	Yes	1,588	0.4932	1,632	0.5068	
	No	Yes	-	-	702	1.0000	
17	Yes	No	731	1.0000	-	-	Overlap
	Yes	Yes	1,550	0.5217	1,421	0.4783	
	No	Yes	-	-	114	1.0000	

Asians and American Indians (SLF B)

Age	SN eligible	Assessed students in NAEP schools (a)	Factor for composite estimator a/(a+b)	Assessed students in SN-only schools (b)	Factor for composite estimator b/(a+b)	
9	No	233	1.0000	-	-	
	Yes	175	0.3321	352	0.6679	Overlap
13	No	502	1.0000	-	-	
	Yes	333	0.4919	344	0.5081	Overlap
17	No	752	1.0000	-	-	
	Yes	433	0.6424	241	0.3576	Overlap

size of school and SN-eligibility. If x' is an unbiased estimate based on SN-assessed student data in NAEP schools and x" is an unbiased estimate of the same quantity using SN-Only school data, then

$$y' = wx' + (1-w)x'' , \qquad (0 \leq w \leq 1)$$

is also an unbiased estimate. The factor $f_5 = w$ for SN-assessed students in NAEP schools, (or $1-w$ for students from SN-only schools). In an effort to reduce the variance of $\cdot'$, we chose w to be proportional to the number of assessed students whose responses contribute to the estimate x'. For subpopulations uniquely represented by the NAEP or SN-Only samples f_5 was set to 1.0.

B.4 Variation in the Weights

The variation in weights for the Special NAEP Assessment was caused by a number of factors, some of which were common to all NAEP samples and some of which were unique to the SN sample. Variation arose from undersampling, by a factor of four, of schoo... with less than seven expected grage-eligibles. Variation also arose from the use of the same PSUs for each age class, with some PSUs being self-representing and others selected with probabilities proportionate to average measures of size. This variation increased the variability of weights because adjustments were made to the within PSU sampling fractions in order to achieve approximately the desired numbers of students to be assessed, PSU by PSU. Adjustments for noncooperation and nonresponse at the school, session allocation, and student levels added to the variation in weights. The use of the composite estimator, which enables combining of SN students from different samples without a "double-counting" effect, had a large impact on the variation of the weights.

Such variability in weights contributed to the variance of overall estimates by approximately a factor of $F = 1 + V^2$, where V^2 denotes the relvariance of the SN student weights. The calculated factors for the Special NAEP Assessment are displayed below.

Regular NAEP Age Class	+ SN-only
9	3.11
13	3.38
17	4.50

B-10

278

B.4.1   Trimming the Weights for Outliers

The SN students in some schools were assigned extremely large weights because the school was predicted (on the basis of QED data) to have a small number of SN-eligible students, yet in fact had a large number. Other excessively large weights may have been the result of extreme levels of nonresponse. To reduce the effect of large contributions to variance from a small set of sample schools, the weights of such schools were reduced, i.e., trimmed. The trimming procedure introduces a bias, but is expected to reduce the mean square error of sample estimates.

The trimming algorithm was identical to that used in Year 15 NAEP and had the effect, approximately, of trimming the weight of any school that contributed more than a specified proportion, θ, to the estimated variance of the estimated number of students eligible for language minority assessment. The trimming was done separately for the assessment of Hispanics (Student Listing Form Type A) and for Asians and American Indians (Student Listing Form Type B).

Let

$$M \quad = \quad \text{number of schools in which SN assessments were conducted;}$$

$$W_i \quad = \quad \text{weight assigned to school "i" (i.e., the product of the PSU weight, the school weight, the school nonresponse factor, the session allocation weight; and the session nonresponse factor);}$$

$$x_i' \quad = \quad \text{estimated number of SN-eligible students in school "i" (i.e., the sum of the within-school weights for the students assessed);}$$

$$x_i'' \quad = \quad W_i x_i'; \text{ and}$$

$$\bar{x}'' \quad = \quad (1/M) \sum_{i=1}^{M} x_i'' \; .$$

A rough approximation to the variance of $\bar{x}''$ is

$$\frac{1}{M} \sum_i (x_i^{"} - \bar{x}^{"})^2 .$$

We adopted a trimming method that reduced the weight W_i for a small number of schools in such a manner that no school makes a contribution to the sum shown above that is greater than a specified proportion θ. That is, for any school "j", the weight W_j, after all weights have been trimmed if required, satisfies the condition

$$(x_j^{"} - \bar{x}^{"})^2 \leq \theta_i \sum (x_i^{"} - \bar{x}^{"})^2 .$$

The weight is not to be altered if $x_j^{"} < \bar{x}^{"}$. Hence the condition is equivalent to

$$x_j^{"} - \bar{x}^{"} \leq \sqrt{\theta_i \sum (x_i^{"} - \bar{x}^{"})^2}$$

or

$$W_j \leq \frac{1}{x_j^{"}} [\bar{x}^{"} + \sqrt{\theta_i \sum (x_i^{"} - \bar{x}^{"})^2}] .$$

The trimming was done iteratively. Using the initial weights, the weight for each school which failed to satisfy the inequality was reduced to the value given by the right-hand side of the inequality. Using the weights as trimmed, the procedure was iterated.

The value of θ to be used was chosen by judgement to provide negligible bias while substantially reducing variance. The chosen value of θ was $10/M$, which resulted in a trimming of the weights for schools as follows:

B-12

Age class	Number of schools with trimmed weights	
	With Hispanics SN assessed	With American Indians and/or Asians assessed
9	5	10
13	4	9
17	2	8

The iteration proceeded as follows. In each school "i", define

$$\theta_i = \frac{(x_i'' - \bar{x}'')^2}{V},$$

where

$$V = \sum_i (x_i'' - \bar{x}'')^2.$$

The initial candidate schools for trimming were those for which $\theta_i > 10/M$. We began with school "j", which has the maximum value θ_j, and obtained values of the variables for the kth iterate as follows:

$$W_j(k+1) = W_j(k)\left[\frac{\bar{x}''(k)}{x_j''(k)} + \sqrt{\frac{10/M}{\theta_j(k)}}\left|1 - \frac{\bar{x}''(k)}{x_j''(k)}\right|\right]$$

$$\bar{x}''(k+1) = \bar{x}''(k) + \left[W_j(k+1) - W_j(k)\right]x_j'(k)/M$$

$$x_j''(k+1) = W_j(k+1)x_j'(k)$$

$$V(k+1) = \left[x_j''(k+1)\right]^2 - \left[x_j''(k)\right]^2 - M\left([\bar{x}''(k+1)]^2 - [\bar{x}''(k)]^2\right) + V(k)$$

B-13

$$\theta_j(k+1) = \left[\dot{x}_j(k+1) - \bar{\bar{x}}(k+1) \right]^2 / V(k+1)$$

$$\dot{x}_j(k+1) = \dot{x}_j(k).$$

Iteration proceeded until convergence to five significant figures.

For the next school whose weight was to be trimmed, $\bar{\bar{x}}$ and V were replaced by the values attained in the iteration for the previous school, and then iteration proceeded as above. After all necessary weights were trimmed in an iteration, the process was repeated if the weight for any school violated the condition.

B.5   Final Student Weights

NAEP estimates of student characteristics are based on final student weights, that is, the weight resulting after adjusting the student base weight for nonresponse, and overlap between the NAEP and SN-only sample domains and lastly, trimming. The student final weight, W'', is given by

where

$$W'' = W' \cdot f_5 \cdot f_6;$$

W' = nonresponse adjusted student base weight, (as defined in Section B.2);

f_5 = factor allowing pooling of NAEP and SN-only data (as discussed in Section B.3); and

f_6 = trimming factor (as discussed in Section B.4.1).

B-14

283

APPENDIX   B

284

Grade 3

Math items

▶ **Questions 8–10.** Subtract.

8. $39 - 26 =$ _____   N277901

9. $79 - 45 =$ _____ .   N277902

10. $65 - 7 =$ _____   N277903
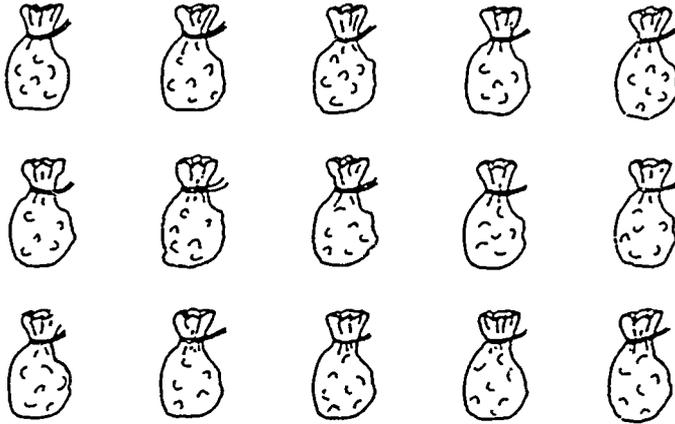
11. Each bag has 10 marbles in it. How many marbles are there in all?

   ○ 10

   ○ 15

   ○ 25

   ○ 140

   ○ 150

   ○ 160

   ○ I don't know.   N272302

$$3 \times \boxed{} = 21$$

12. What number should go in the $\boxed{}$ to make this number sentence TRUE?

ANSWER_____   N267301

8. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
9. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
10. ⓪ ① ② ③ ⊖ ⑤ ⑥ ⑦ ⑧ ⑨
12. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Please continue on next page. ▶

13. Which coins are the same amount of money as a quarter?

○ 2 dimes

○ 3 nickels and 1 dime

○ 3 dimes

○ 4 nickels

○ I don't know.   N251601

14. Which unit would you use to measure the length of a pencil?

○ centimeter

○ meter

○ kilometer

○ I don't know.   N265201

$$9 = 12 - \boxed{}$$

15. What number should go in the box to make this number sentence TRUE?

ANSWER_____   N270902

16. Sam has 68 baseball cards. Juanita has 127. Which number sentence could be used to find how many more cards Juanita has than Sam?

○ $127 - 68 = \boxed{}$

○ $127 + \boxed{} = 68$

○ $68 - \boxed{} = 127$

○ $68 + 127 = \boxed{}$

○ I don't know.   N259101

17. Write this fraction using numerals.

three-fourths

ANSWER_____   N272601

15. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
17. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Please continue on next page. ▷

18. In Elm School, 15 children play basketball. Each basketball team has 5 players. How many teams are there?

- ○ 3
- ○ 5
- ○ 10
- ○ 12
- ○ 15
- ○ 20
- ○ I don't know.

N276501

19. There is only one red marble in each of the bags shown below. Without looking, you are to pick a marble out of one of the bags. Which bag would give you the greatest chance of picking the red marble?
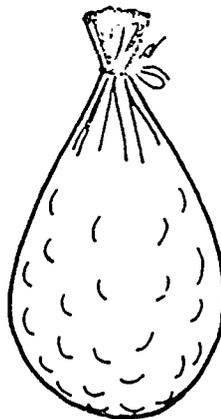
!0 marbles   100 marbles   1000 marbies
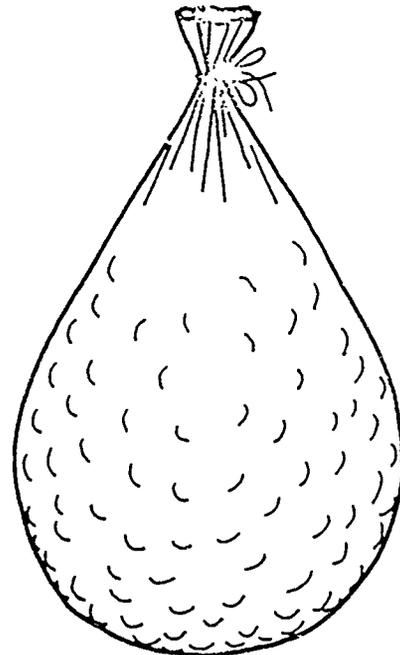
- ○ Bag with 10 marbles
- ○ Bag with 100 marbles
- ○ Bag with 1000 marbles
- ○ It makes no difference.
- ○ I don't know.

N250201

20. What value of N makes the following sentence TRUE?

13 × N = 13

ANSWER_____
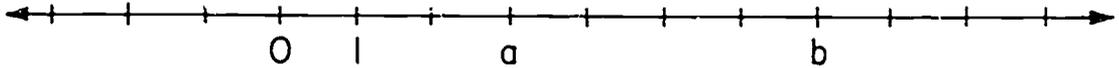
21. Which of the following is shown by the number line?

○ a = b

○ a < b

○ a > b

○ Can't tell anything about a and b

○ I don't know.

4.32

22. What is the number in this box?

○ Forty-three and two-tenths

○ Four hundred thirty-two

○ Four and thirty-two hundredths

○ Forty-three hundredths

○ I don't know.

20. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

Please continue on next page. ▷

centimeters
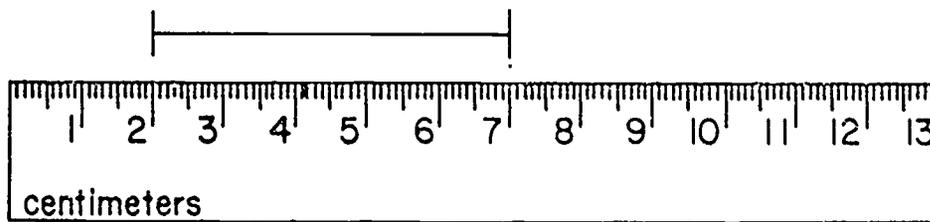
23. How long is this line segment?

○ 2 cm

○ 5 cm

○ 6 cm

○ 7 cm

○ 9 cm

○ I don't know.   N252901

24. Here are the ages of five children:

13, 8, 6, 4, 4

What is the average age of these children?

○ 4

○ 6

○ 7

○ 8

○ 9

○ 13

○ I don't know.   N263501

ANIMAL WEIGHTS

Animal	Weight
Fox	
Beaver	
Monkey	
Sheep	
Lion	
Alligator	
Seal	

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

Pounds
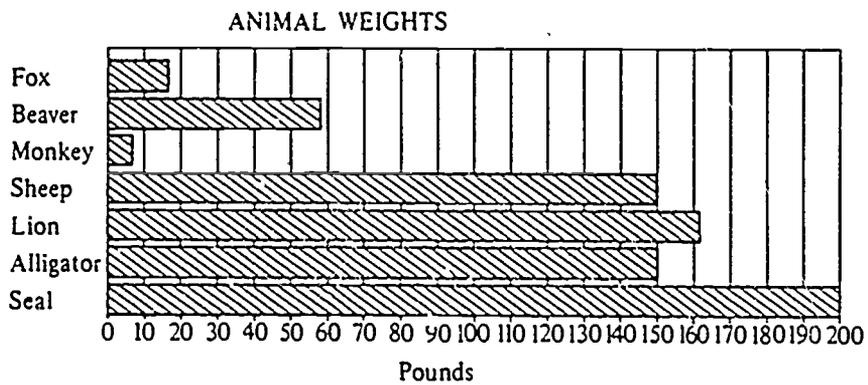
25. Which animal is heavier than a lion?

○ Fox

○ Seal

○ Alligator

○ Sheep

N224701

Grade 7

Math Items

$$29 = \boxed{} + 16$$

17. What number should go in the box to make the number sentence above TRUE?

ANSWER_____   N271101

18. In a certain school, 10% of the students bring their lunch, 60% buy a lunch in the cafeteria, and the remaining students go home for lunch. What percent of the students go home for lunch?

○ 30%

○ 50%

○ 70%

○ More facts are needed to answer.   N204101

19. Chang has three coins. Only one is a penny. Exactly two are each worth less than a dime. Each of the coins is worth less than a quarter. What three coins does Chang have?

○ 1 penny, 2 dimes

○ 1 penny, 1 nickel, 1 dime

○ 3 dimes

○ 1 penny and 2 quarters

○ I don't know.   N262301

20. Which of the following decimals represents 15%?

○   15.

○   .15

○   1.5

○ 1500

○ I don't know.   N258804

21. $^{+}5 + {}^{-}5 =$

ANSWER_____   N260601

17. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
21. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

50 grams   5 grams

20 grams   30 grams
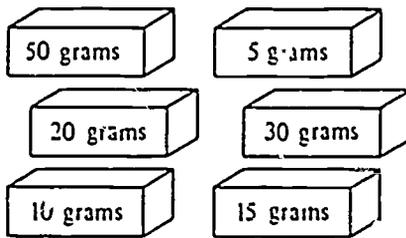
10 grams   15 grams

22. Some boxes are shown above. Ann wants to take enough boxes so that she has half the total weight. Which of the boxes could she take?

○ 50 grams, 30 grams

○ 50 grams, 20 grams, 10 grams

○ 50 grams, 10 grams, 5 grams

○ 20 grams, 15 grams, 10 grams, 5 grams   N205201

3 ▣ 53

23. In the numeral above, the hundreds digit is covered by a dark box. If the number is less than 3100, what is the largest digit that can be under the box?

○ 0

○ 1

○ 5

○ 8

○ 9

○ I don't know.   N257401

24. On the average, a baby's head is one-fourth the total length of the baby. If a baby's head is 10 centimeters long, about how long is the baby?

○   2.5 cm

○ 14 cm

○ 24 cm

○ 40 cm   N207801

293   Please continue on next page. ▷

25. Which fraction is GREATER?

$\frac{4}{6}$ $\frac{3}{8}$ I don't know.

    ◯   ◯   ◯

N274101
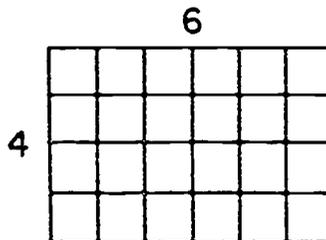
26. Which one of the figures below has the same area as the figure above.?

◯   5

◯   3

◯   i2

◯   2
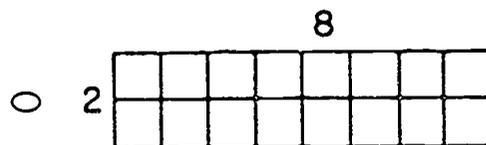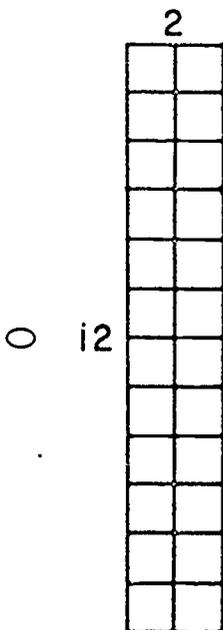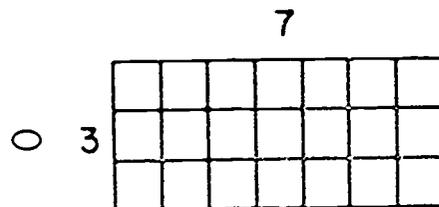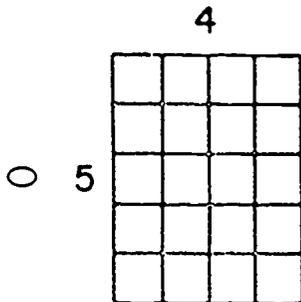
◯   I don't know.

N251901

Favorite Color	
Blue (B)	~~HHT~~ ~~HHT~~ ~~HHT~~
Red (R)	~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~
Green (G)	~~HHT~~ ~~HHT~~
Yellow (Y)	~~HHT~~ ~~HHT~~ II

27. Which graph best fits the data in the tally chart above?

○   ○   ○   ○

N231101

S 4.70
Tax included
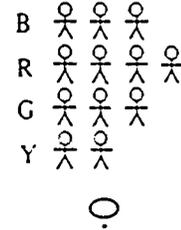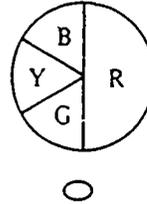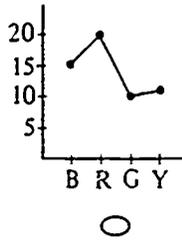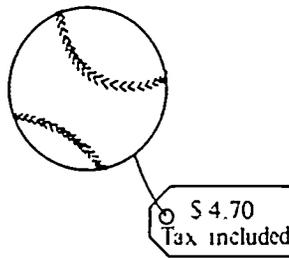
28. Which is the smallest bill that is enough to pay for 4 baseballs?

○ Five-dollar bill

○ Ten-dollar bill

○ Twenty-dollar bill

○ Fifty-dollar bill

N206601

29. Rulers cost 35¢ each. How many rulers can Tom buy if he has $3.00?

ANSWER_____ ;

▶ Questions 30–32. Find the products.

30. $12 \times \frac{3}{4} =$ _____

31. $3 \times 2\frac{1}{3} =$ _____

32. $5 \times \frac{1}{6} =$ _____

Table

West Wall

Stereo

Scale: —— represents $1\frac{1}{2}$ feet
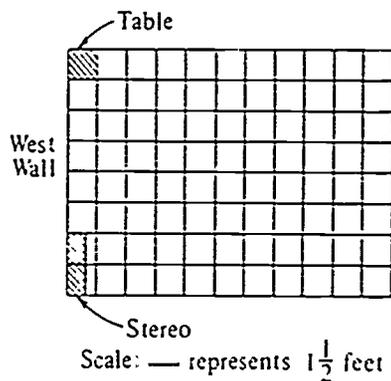
33. The scale drawing above shows the floor plan of a living room. A sofa is to be placed along the west wall between the table and the stereo. What is the maximum length for the sofa?

○ 5 feet

○ $6\frac{1}{2}$ feet

○ $7\frac{1}{2}$ feet

○ 8 feet

29. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
30. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
31. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
32. ⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

34. Carlos' basketball team won 75% of its games last season. If they played 80 games, how many games did they win?

○ 20

○ 60

○ 68

○ 75

○ I don't know.   N259901
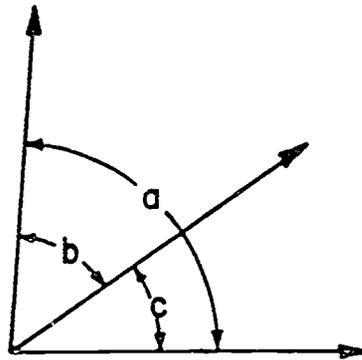
35. If angle a measures 85° and angle b measures 52°, what does angle c measure?

○ 33°

○ 38°

○ 137°

○ Not enough information given

○ I don't know.   N254301

36. Which of these figures has all of its points the same distance from point P?

N213001

297   Please continue on next page. ▶
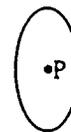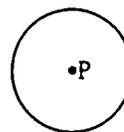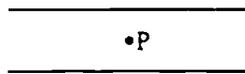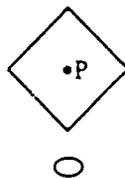
37. Which is one way to find $\frac{4}{5}$ of a number?

○ Divide by 4 and multiply by 5.

○ Divide by 5 and multiply by 4.

○ Divide by 4 and divide by 5.

○ Multiply by $\frac{5}{4}$.

38. Allen's batting average is 0.425. What is his batting average as a percent?

○   0.0425%

○   4.25%

○ 42.5%

○ 425%

     Please continue on next page. ▶

Grade 11

Math Items

16. In a certain school, 10% of the students bring their lunch, 60% buy a lunch in the cafeteria, and the remaining students go home for lunch. What percent of the students go home for lunch?

   ○ 30%

   ○ 50%

   ○ 70%

   ○ More facts are needed to answer.   N204101

17. In a pet shop there are 12 animals. Seven are dogs and the rest are cats. What is the ratio of dogs to cats?

   ○ 12:7

   ○ 5:7

   ○ 7:12

   ○ 7:5   N208101
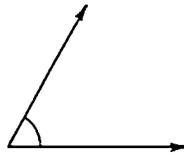
18. The measure of the angle above is nearest to which of the following?

   ○ 15°

   ○ 30°

   ○ 60°

   ○ 90°   N215701

300

Favorite Color	
Blue (B)	~~HHT~~ ~~HHT~~ ~~HHT~~
Red (R)	~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~
Green (G)	~~HHT~~ ~~HHT~~
Yellow (Y)	~~HHT~~ ~~HHT~~ II

19. Which graph best fits the data in the tally chart above?
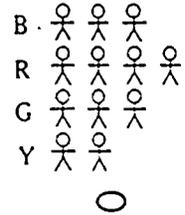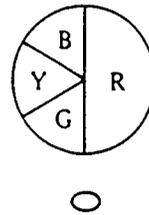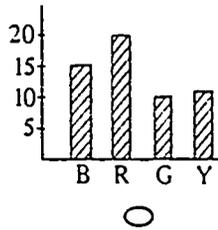
N231101
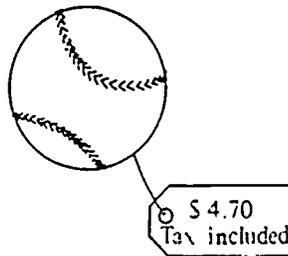
20. Which is the smallest bill that is enough to pay for 4 baseballs?

○ Five-dollar bill

○ Ten-dollar bill

○ Twenty-dollar bill

○ Fifty-dollar bill

N206601
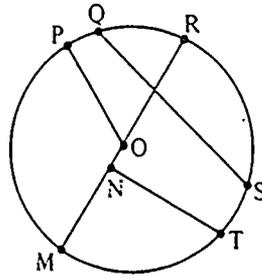
21. Which of the following is a diameter of the circle?

- ○ $\overline{OP}$
- ○ $\overline{QS}$
- ○ $\overline{RM}$
- ○ $\overline{NM}$

N212901

22. Which of the following is a radius of the circle?

- ○ $\overline{OP}$
- ○ $\overline{QS}$
- ○ $\overline{RM}$
- ○ $\overline{NT}$

N212902

23. Which points are the end points of an arc?

- ○ O, P
- ○ Q, S
- ○ N, T
- ○ N, M

N212903

Please continue on next page. ▶

$$\square \times \square = \square$$

24. The same number is to be placed in each box above. Which of these numbers would work?

    I. 0

    II. 1

    III. −1

○ II only

○ I and II only

○ I and III only

○ I, II, and III

25. A taxi driver estimates that she drives about 250 miles a day. If she drives every day of the week, about how many miles does she drive in one week.

○   1,000 miles

○   2,000 miles

○   3,000 miles

○   10,000 miles

N206501
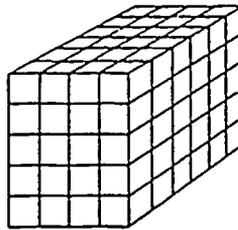
26. This is a diagram of a rectangular solid model made of wooden cubes with 1-centimeter edges. What are the dimensions of the solid in centimeters?

○   30 by 20 by 24

○   7 by 5 by 6

○   6 by 4 by 5

○   5 by 3 by 5

N215601

Please continue on next page. ▶

27. Which of these figures has all of its points the same distance from point P?

◇ •P   ═══ •P   ⬭ •P   ◯ •P
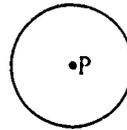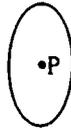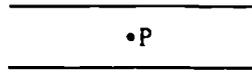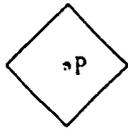
○   ○   ○   ○   N213001

28. Which is one way to find $\frac{4}{5}$ of a number?

○ Divide by 4 and multiply by 5.

○ Divide by 5 and multiply by 4.

○ Divide by 4 and divide by 5.

○ Multiply by $\frac{5}{4}$.   N228501
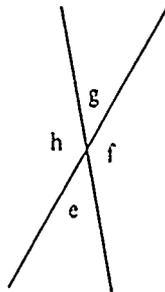
29. In the figure above, the angles g and h are

○ complementary

○ equal

○ supplementary

○ vertical   N213201

30.4

Please continue on next page. ▷

```
0                                          1
├──┼──┼──┼──┼──┼──┼──┼──┼──┼──┤
P   Q   R   S   T   U   V   W   X   Y   Z
```
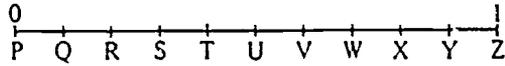
30. The decimal 0.43 is between which two points?

    ○ P and Q

    ○ Q and R

    ○ T and U

    ○ U and Z   N201701

31. A newspaper reported that about 18,200 trees had been planted in a state forest. In the report, the actual number of trees planted was rounded to the nearest hundred. Which of the following could have been the actual number of trees planted?

    ○ 18,043

    ○ 18,189

    ○ 18,289

    ○ 18,328   N200101

32. If $7(t - 5) = \square - 35$, what is $\square$?

    ○ 2t

    ○ 7t

    ○ 7t − 35

    ○ 30   N209401

33. John tosses a coin twice and then Paul tosses a coin twice. Which of the following is most likely to occur?

    ○ They both get the same number of heads.

    ○ John gets more heads than Paul.

    ○ Paul gets exactly two heads.

    ○ John gets exactly two tails.   N222801

305

34. Which is NOT the same as 100%?

○ $\frac{10}{10}$

○ 1

○ 1.00

○ 1.00%

N200901

35. $3\frac{1}{5} =$

○ $3 \div \frac{1}{5}$

○ $3 - \frac{1}{5}$

○ $3 \times \frac{1}{5}$

○ $3 + \frac{1}{5}$

N230201
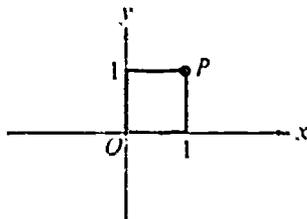
36. A square is drawn in the coordinate plane as shown in the figure above. If the square is shifted to the right 3 units and up 4 units, what are the new coordinates of point P?

○ (3,4)

○ (4,3)

○ (4,5)

○ (5,4)

N210901

306

Please continue on next page. ▶

•Matt

•Ann

•P

•Raúl

37. The teacher put a dot on the chalkboard and marked it P. Then she asked three children to measure 2 centimeters from P and put a dot. The picture shows where the children put their dots. If 20 children measured and each put a different dot, the picture would look most like a

○ circle

○ rectangle

○ square

○ triangle   N234901

38. The number of tomato plants (t) is twice the number of pepper plants (p). Which equation best describes the sentence above?

○ t = 2p

○ 2t = p

○ t = 2 ÷ p

○ 2 ÷ t = p   N: ~601

39. A jar contains 5 red, 6 blue, and 7 green marbles. One marble is drawn from the jar. What is the probability that the marble drawn at random is red or green?

○ $\frac{1}{12}$

○ $\frac{1}{5}$

○ $\frac{1}{2}$

○ $\frac{2}{3}$ N222501

Please continue on next page. ▷

40. Jan has 3 dimes in her pocket and nothing else. If she takes 1 coin from her pocket, what is the probability that it will be a dime?

- ○ $\frac{1}{10}$

- ○ $\frac{3}{10}$

- ○ $\frac{1}{3}$

- ○ 1

N236101

5 cm

←—5 cm—→
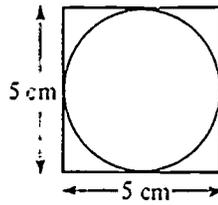
41. From the diagram above, which is the best estimate of the circumference of the circle?

- ○ Less than 20 centimeters

- ○ About 20 centimeters

- ○ More than 20 centimeters

N232101

42. If $6.74 \times 10^n = 6,740.000$, what is the value of n?

- ○ 4

- ○ 5

- ○ 6

- ○ 10

N201001

303

Please continue on next page. ▷
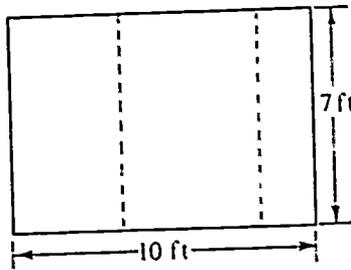
43. If the rectangle above is cut along the dotted lines and the three pieces are separated, what is the combined area of the three pieces?

○   49 sq ft

○   70 sq ft

○   100 sq ft

○   It cannot be determined from the information given.

Reading Items

Grade 3

▶ **Questions 15–17.** Read the article and then answer the questions based on it.

Did You Know That . . .

Crickets "talk" to each other. They make sounds that are very high in pitch and sometimes called chirps. The sounds are made by the rubbing actions of their wings. Only male crickets produce these sounds. But both males and females have "ears" located on their front legs just below their knees. In China and Japan, people keep crickets as pets!

15. How do crickets make sounds?

○ By making noises in their throats

○ By scraping their knees together

○ By rubbing their front legs on the ground

○ By rubbing their wings back and forth

○ I don't know.   N008601

16. Which crickets produce the chirping sounds?

○ Only female crickets

○ Only male crickets

○ Only crickets kept as pets

○ Both male and female crickets

○ I don't know.   N008602

17. Where are the "ears" of the crickets located?

○ On their front legs

○ On their wings

○ On their heads

○ On their hind legs

○ I don't know.   N008603

▷ STOP Do not continue until told to do so.

Getting the Goods to Market

In the early 1700's, farming was an important way for American colonists to make a living. Even though farming methods and tools were crude, many farmers could produce enough vegetables, grain, and meat to feed their families and still have some left over for sale.

Getting the goods to market, however, was not easy. People stayed close to home because roads were poor and transportation difficult. To get what they wanted, settlers usually traded products with each other. Many items came from the Indians, who traded furs and hides for clothing and metal goods.

As communities grew, blacksmiths, cabinetmakers, and silversmiths opened shops in the village square, or sold their goods and services by traveling from one town to another.

One popular character of early colonial times was the Yankee peddler. With his pack on his back or leading a pack-train, he visited the villages and farms, bringing scissors, tableware, boots, and bottles—whatever he knew would sell. In many places, he was the only outsider the farmers saw for months.

12. Why was getting the goods to market difficult?

○ The roads were poor.

○ Farming methods were crude.

○ Vegetables, grain, and meat spoiled quickly.

○ The towns grew larger.

○ I don't know.   N003101

13. What would we call a Yankee peddler today?

○ A blacksmith

○ A farmer

○ A salesperson

○ A tax collector

○ I don't know.   N003102

What is Quicksand?

Quicksand can swallow a pig, or a human, or even an elephant.

Quicksand often looks like plain wet sand. But it is really a soupy sand with so much water between the grains that you can't stand on it.

If you step into quicksand, you will slowly sink up to your knees. If you thrash and squirm, you will sink deeper and deeper. But if you lie flat on your back with your arms stretched out, you can float on the sand, as you can float in water.

Watch out for quicksand on sand bars, on the bottoms of streams, or along sandy seacoasts.

You can test for quicksand by poking it with a long stick or pole. If the sand shakes and quakes, don't try to walk on it! It may be quicksand.

8. According to the article, how can you test to see if sand is really quicksand?

   ○ Stick your hand into it.

   ○ Step lightly on it.

   ○ Poke it with a stick.

   ○ Look at it.

   ○ I don't know.   N010501

9. What is the main purpose of the article?

   ○ To tell people ways to avoid the dangers of quicksand

   ○ To encourage people to protect the beauty of nature

   ○ To describe how people and animals have been swallowed by quicksand

   ○ To explain how quicksand got its name

   ○ I don't know.   N010502

10. What is quicksand?

   ○ Wet sand you can walk on

   ○ Soupy sand you can't stand on

   ○ Sand that forms clouds in the wind

   ○ Dry sand which flows quickly through your fingers

   ○ I don't know.   N010503

11. According to the article, what should you do if you step into quicksand?

○ Thrash your arms and try to shake yourself out.

○ Grab a stick and try to pull yourself out.

○ Stand still and yell for someone to help you.

○ Lie on your back with your arms stretched out.

○ I don't know.

N010504

315

Reading Items

Grades 7 & 11

Mary McLeod Bethune

Mary McLeod Bethune was born in Mayesville, South Carolina on July 10, 1875. Her parents had been slaves. When Mary was nine, she worked picking 250 pounds of cotton a day. She did not go to school because there were no schools for Black children in the South in 1884.

Then a free school for Black children was started near Mayesville. The McLeods could only afford to let one of their children go to the school. They decided to send their daughter Mary. Each day she walked five miles to school and five miles back home.

When Mary was 15, she was ready to go to high school. Her parents were too poor to send her there. Mary had a chance to go because a rich person offered to pay for the education of a child from the Mayesville school. The teacher picked Mary for this honor.

When Mary finished her education, she became a teacher. She wanted to help educate Black children. Most Black children in the South were still without schools.

Mrs. Bethune worked hard to start a school for Black children. In 1904, with $1.50, she rented a broken-down cottage near Daytona Beach, Florida. She and some friends fixed up the cottage to make it into a school. Finally the school was ready. The first class had six pupils.

As the years passed, the school grew. Many wealthy people gave Mrs. Bethune money to build new, modern buildings. In 1923, her school became Bethune-Cookman College.

In 1936, President Roosevelt made Mary Bethune a director of the National Youth Administration. The National Youth Administration trained hundreds of thousands of unemployed boys for jobs.

20. How did President Roosevelt honor Mary Bethune?

  ○ By giving her a school of her own

  ○ By appointing her president of a college

  ○ By helping her become the mayor of Daytona Beach, Florida

  ○ By appointing her a director of the National Youth Administration

  ○ I don't know.   N002801

21. Why did Mary Bethune want to start a school of her own?

  ○ To teach the subjects that she liked

  ○ To provide a school for her own children

  ○ To start a college for the Black people of South Carolina

  ○ To educate Black children

  ○ I don't know.   N002802

▶ Questions 22-24.   Read the article below and then answer the questions based on it.

Have You Ever Wished You Could Fly?

Have you ever wished you could fly like a bird? Most people have. Since ancient times, there have been stories about people who could fly—and people who tried to fly. Some inventors strapped on winglike gadgets and tried to flap into the air. But none of the flapping machines really flew. In time, people invented engines that would move heavy planes through the air. But people still dreamed of flying on their own power. Then in 1959, a prize was offered for the first successful muscle-powered flight. Recently, a scientist in Californ...: won it.

Silent as a butterfly, a superbike with huge see-through wings cruises a few feet above the ground. Made of lightweight plastic, wood, card-board, wire, and aluminum tubing, it made history by flying around a figure-eight course on pedal-power.

"When we started, I did most of the flying," 15-year-old Tyler Mac-Cready said. "I trained on an exercise bike. But I wasn't strong enough to be the pilot. An experienced bike racer flew the Gossamer Condor when it won the prize."

Many people tried to win the prize by building expensive, compli-cated planes. Tyler's father, Dr. Paul B. MacCready, designed something different—a simple machine that weighed only 70 pounds.

For a year, Dr. MacCready tested and improved his design. Tyler and his older brother, Parker, helped. "It was a little like making a model airplane," said Tyler. "We saw what worked and what didn't. If it crashed, nobody got hurt. It was only a few feet off the ground." The final model had clear plastic wings and a plastic shell around the pilot. The pilot pedaled to move a propeller on the back. On August 23, 1977, Bryan Allen pedaled hard enough to keep the Condor on course for 6 minutes and 22½ seconds—a prize winning flight.

Dr. MacCready thinks the work was more valuable than the prize. "The boys realized they should never give up on something just because it hasn't been done. Maybe it can be."

22. Why was the flight of the Gossamer Condor in 1977 important?

○ It was humans' first attempt at trying to fly.

○ It was the first flying machine built by a scientist.

○ It was the first flying machine flown by an experienced bike racer.

○ It was the first successful muscle-powered flight.

○ I don't know.   N002001

317   Please continue on next page. ▶

23. Who flew the Gossamer Condor on its prizewinning flight?

   ◯ The younger son, Tyler

   ◯ The father, Dr. MacCready

   ◯ The older son, Parker

   ◯ A bike racer, Bryan Allen

   ◯ I don't know.   N002002

24. How was the MacCready's plane different from the others that were competing for the prize?

   ◯ It was simpler and lighter.

   ◯ It was heavier and stronger.

   ◯ It had a more complicated engine.

   ◯ It looked like a butterfly.

   ◯ I don't know.   N002003

► Questions 25–28. Read the story and then answer the questions based on it.

nuts!

One day the Devil was sitting in his throne room eating walnuts from a large bag and complaining, as usual, about the terrible nuisance of having to crack the shells, when all at once he had an idea. "The best way to eat walnuts," he said to himself, "is to trick someone else into cracking them for you."

So he fetched a pearl from his treasure room, opened the next nut very carefully with a sharp knife so as not to spoil the shell, and put the pearl inside along with the meat. Then he glued the shell back together. "Now all I have to do," he said, "is give this walnut to some greedy soul who'll find the pearl in it and insist on opening the lot to look for more!"

So he dressed himself as an old man with a long beard and went up into the World, taking along his nutcracker and the bag of walnuts with the special nut right on top. And he sat himself down by a country road to wait.

Pretty soon a woman came marching along.

"Hey, there!" said the Devil. "Want a walnut?"

The woman looked at him shrewdly and was at once suspicious, but she didn't let on for a minute. "All right," she said. "Why not?"

"That's the way," said the Devil, chuckling to himself. And he reached into the bag and took out the special walnut and gave it to her.

However, much to his surprise, she merely cracked the nut open, picked out the meat and ate it, and threw away the shell without a single word or comment. And then she went on her way and disappeared.

"That's strange," said the Devil with a frown. "Either she swallowed my pearl or I gave her the wrong walnut to begin with."

He took out three more nuts that were lying on top of the pile, cracked them open, and ate the meat, but there was no pearl to be seen. He opened and ate four more. Still no pearl. And so it went, on and on all afternoon, till the Devil had opened every walnut in the bag, all by himself after all, and had made a terrible mess on the road with the shells. But he never did find the pearl, and in the end he said to himself, "Well, that's that. She swallowed it." And there was nothing for it but to go back down to the Underworld. But he took along a stomachache from eating all those nuts, and a temper that lasted for a week.

In the meantime the woman went on to the market, where she took the pearl out from under her tongue, where she'd been saving it, and she traded it for two turnips and a butter churn and went on home again well pleased.

319

25. What did the Devil put in the special walnut?

○ Money

○ Poison

○ A pearl

○ Another walnut

○ I don't know.   N001501

26. What kind of person was the woman?

○ Mean

○ Foolish

○ Joyful and kind

○ Clever and practical

○ I don't know.   N001502

27. Why did the Devil go up into the World?

○ To make someone wealthy

○ To make someone sick from his walnuts

○ To trick someone into cracking his walnuts

○ To get rid of his walnuts

○ I don't know.   N001503

28. What went wrong with the Devil's plan?

○ The Devil had to clean up the mess on the road.

○ The woman swallowed the pearl.

○ The Devil lost the walnuts on the road.

○ The woman was too clever for him.

○ I don't know.   N001504

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Getting the goods to market, however, was not easy. People stayed close to home because roads were poor and transportation difficult. To get what they wanted, settlers usually traded products with each other. Many items came from the Indians, who traded furs and hides for clothing and metal goods.

As communities grew, blacksmiths, cabinetmakers, and silversmiths opened shops in the village square, or sold their goods and services by traveling from one town to another.

One popular character of early colonial times was the Yankee peddler. With his pack on his back or leading a pack-train, he visited the villages and farms, bringing scissors, tableware, boots, and bottles—whatever he knew would sell. In many places, he was the only outsider the farmers saw for months.

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○ A blacksmith

○ A farmer

○ A salesperson

○ A tax collector

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Reading Items

Grade 3

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   ○ Step lightly on it.

   ○ Poke it with a stick.

   ○ Look at it.

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   ○ To encourage people to protect the beauty of nature

   ○ To describe how people and animals have been swallowed by quicksand

   ○ To explain how quicksand got its name

   ○ I don't know.   N010502

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   ○ Soupy sand you can't stand on

   ○ Sand that forms clouds in the wind

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   ○ I don't know.   N010503

11. According to the article, what should you do if you step into quicksand?

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○ Grab a stick and try to pull yourself out.

○ Stand still and yell for someone to help you.

○ Lie on your back with your arms stretched out.

○ I don't know.

N010504

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13. What would we call a Yankee peddler today?

   ○ A blacksmith

   ○ A farmer

   ○ A salesperson

   ○ A tax collector

   ○ I don't know.   N003102

▶ Questions 15–17.   Read the article and then answer the questions based on it.

Did You Know That . . .

Crickets "talk" to each other. They make sounds that are very high in pitch and sometimes called chirps. The sounds are made by the rubbing actions of their wings. Only male crickets produce these sounds. But both males and females have "ears" located on their front legs just below their knees. In China and Japan, people keep crickets as pets!

15. How do crickets make sounds?

○ By making noises in their throats

○ By scraping their knees together

○ By rubbing their front legs on the ground

○ By rubbing their wings back and forth

○ I don't know.   N008601

16. Which crickets produce the chirping sounds?

○ Only female crickets

○ Only male crickets

○ Only crickets kept as pets

○ Both male and female crickets

○ I don't know.   N008602

17. Where are the "ears" of the crickets located?

○ On their front legs

○ On their wings

○ On their heads

○ On their hind legs

○ I don't know.   N008603

▷ STOP   Do not continue until told to do so.

326

Reading Items

Grades 7 & 11

Mary McLeod Bethune

Mary McLeod Bethune was born in Mayesville, South Carolina on July 10, 1875. Her parents had been slaves. When Mary was nine, she worked picking 250 pounds of cotton a day. She did not go to school because there were no schools for Black children in the South in 1884.

Then a free school for Black children was started near Mayesville. The McLeods could only afford to let one of their children go to the school. They decided to send their daughter Mary. Each day she walked five miles to school and five miles back home.

When Mary was 15, she was ready to go to high school. Her parents were too poor to send her there. Mary had a chance to go because a rich person offered to pay for the education of a child from the Mayesville school. The teacher picked Mary for this honor.

When Mary finished her education, she became a teacher. She wanted to help educate Black children. Most Black children in the South were still without schools.

Mrs. Bethune worked hard to start a school for Black children. In 1904, with $1.50, she rented a broken-down cottage near Daytona Beach, Florida. She and some friends fixed up the cottage to make it into a school. Finally the school was ready. The first class had six pupils.

As the years passed, the school grew. Many wealthy people gave Mrs. Bethune money to build new, modern buildings. In 1923, her school became Bethune-Cookman College.

In 1936, President Roosevelt made Mary Bethune a director of the National Youth Administration. The National Youth Administration trained hundreds of thousands of unemployed boys for jobs.

20. How did President Roosevelt honor Mary Bethune?

○ By giving her a school of her own

○ By appointing her president of a college

○ By helping her become the mayor of Daytona Beach, Florida

○ By appointing her a director of the National Youth Administration

○ I don't know.   N002801

21. Why did Mary Bethune want to start a school of her own?

○ To teach the subjects that she liked

○ To provide a school for her own children

○ To start a college for the Black people of South Carolina

○ To educate Black children

○ I don't know.   N002802

"The Girl From the Cotton Patch" from *Read and Reason* by Paul Berg, published by Scholastic Book Services © 1979.

323

Have You Ever Wished You Could Fly?

Have you ever wished you could fly like a bird? Most people have. Since ancient times, there have been stories about people who could fly—and people who tried to fly. Some inventors strapped on winglike gadgets and tried to flap into the air. But none of the flapping machines .eally flew. In time, people invented engines that would move heavy planes through the air. But people still dreamed of flying on their own power. Then in 1959, a prize was offered for the first successful muscle-powered flight. Recently, a scientist in California won it.

Silent as a butterfly, a superbike with huge see-through wings cruises a few feet above the ground. Made of lightweight plastic, wood, cardboard, wire, and aluminum tubing, it made history by flying around a figure-eight course on pedal-power.

"When we started, I did most of the flying," 15-year-old Tyler Mac-Cready said. "I trained on an exercise bike. But I wasn't strong enough to be the pilot. An experienced bike racer flew the Gossamer Condor when it won the prize."

Many people tried to win the prize by building expensive, complicated planes. Tyler's father; Dr. Paul B. MacCready, designed something different—a simple machine that weighed only 70 pounds.

For a year, Dr. MacCready tested and improved his design. Tyler and his older brother, Parker, helped. "It was a little like making a model airplane," said Tyler. "We saw what worked and what didn't. If it crashed, nobody got hurt. It was only a few feet off the ground." The final model had clear plastic wings and a plastic shell around the pilot. The pilot pedaled to move a propeller on the back. On August 23, 1977, Bryan Allen pedaled hard enough to keep the Condor on course for 6 minutes and 22½ seconds—a prize winning flight.

Dr. MacCready thinks the work was more valuable than the prize. "The boys realized they should never give up on something just because it hasn't been done. Maybe it can be."

22. Why was the flight of the Gossamer Condor in 1977 important?

○ It was humans' first attempt at trying to fly.

○ It was the first flying machine built by a scientist.

○ It was the first flying machine flown by an experienced bike racer.

○ It was the first successful muscle-powered flight.

○ I don't know.   N002001

23. Who flew the Gossamer Condor on its prizewinning flight?

○ The younger son, Tyler

○ The father, Dr. MacCready

○ The older son, Parker

○ A bike racer, Bryan Allen

○ I don't know.   N002002

24. How was the MacCready's plane different from the others that were competing for the prize?

○ It was simpler and lighter.

○ It was heavier and stronger.

○ It had a more complicated engine.

○ It looked like a butterfly.

○ I don't know.   N002003

nuts!

One day the Devil was sitting in his throne room eating walnuts from a large bag and complaining, as usual, about the terrible nuisance of having to crack the shells, when all at once he had an idea. "The best way to eat walnuts," he said to himself, "is to trick someone else into cracking them for you."

So he fetched a pearl from his treasure room, opened the next nut very carefully with a sharp knife so as not to spoil the shell, and put the pearl inside along with the meat. Then he glued the shell back together. "Now all I have to do," he said, "is give this walnut to some greedy soul who'll find the pearl in it and insist on opening the lot to look for more!"

So he dressed himself as an old man with a long beard and went up into the World, taking along his nutcracker and the bag of walnuts with the special nut right on top. And he sat himself down by a country road to wait.

Pretty soon a woman came marching along.

"Hey, there!" said the Devil. "Want a walnut?"

The woman looked at him shrewdly and was at once su.picious, but she didn't let on for a minute. "All right," she said. "Why not?"

"That's the way," said the Devil, chuckling to himself. And he reached into the bag and took out the special walnut and gave it to her.

However, much to his surprise, she merely cracked the nut open, picked out the meat and ate it, and threw away the shell without a single word or comment. And then she went on her way and disappeared.

"That's strange," said the Devil with a frown. "Either she swallowed my pearl or I gave her the wrong walnut to begin with."

He took out three more nuts that were lying on top of the pile, cracked them open, and ate the meat, but there was no pearl to be seen. He opened and ate four more. Still no pearl. And so it went, on and on all afternoon, till the Devil had opened every walnut in the bag, all by himself after all, and had made a terrible mess on the road with the shells. But he never did find the pearl, and in the end he said to himself, "Well, that's that. She swallowed it." And there was nothing for it but to go back down to the Underworld. But he took along a stomachache from eating all those nuts, and a temper that lasted for a week.

In the meantime the woman went on to the market, where she took the pearl out from under her tongue, where she'd been saving it, and she traded it for two turnips and a butter churn and went on home a , well pleased.

25. What did the Devil put in the special walnut?

○ Money

○ Poison

○ A pearl

○ Another walnut

○ I don't know.   N001501

26. What kind of person was the woman?

○ Mean

○ Foolish

○ Joyful and kind

○ Clever and practical

○ I don't know.   N001502

27. Why did the Devil go up into the World?

○ To make someone wealthy

○ To make someone sick from his walnuts

○ To trick someone into cracking his walnuts

○ To get rid of his walnuts

○ I don't know.   N001503

28. What went wrong with the Devil's plan?

○ The Devil had to clean up the mess on the road.

○ The woman swallowed the pearl.

○ The Devil lost the walnuts on the road.

○ The woman was too clever for him.

○ I don't know.   N001504

Getting the Goods to Market

In the early 1700's, farming was an important way for American colonists to make a living. Even though farming methods and tools were crude, many farmers could produce enough vegetables, grain, and meat to feed their families and still have some left over for sale.

Getting the goods to market, however, was not easy. People stayed close to home because roads were poor and transportation difficult. To get what they wanted, settlers usually traded products with each other. Many items came from the Indians, who traded furs and hides for clothing and metal goods.

As communities grew, blacksmiths, cabinetmakers, and silversmiths opened shops in the village square, or sold their goods and services by traveling from one town to another.

One popular character of early colonial times was the Yankee peddler. With his pack on his back or leading a pack-train, he visited the villages and farms, bringing scissors, tableware, boots, and bottles—whatever he knew would sell. In many places, he was the only outsider the farmers saw for months.

29. Why was getting the goods to market difficult?

○ The roads were poor.

○ Farming methods were crude.

○ Vegetables, grain, and meat spoiled quickly.

○ The towns grew larger.

○ I don't know.   N003101

30. What would we call a Yankee peddler today?

○ A blacksmith

○ A farmer

○ A salesperson

○ A tax collector

○ I don't know.   N003102

333

APPENDIX C

Items Used for Analyses

Variables

Race/Ethnicity

1. Which best describes you?

   ○ White

   ○ Black

   ○ Hispanic (Mexican, Mexican American, Chicano, Puerto Rican, Cuban, or other Spanish or Hispanic background)

   ○ Asian or Pacific Islander

   ○ American Indian or Alaskan Native

   ○ Other (what?)_____ B003001

2. If you are Hispanic, what is your Hispanic background?

   ○ I am not Hispanic.

   ○ Mexican, Mexican American, or Chicano

   ○ Puerto Rican

   ○ Cuban

   ○ Other Spanish or Hispanic background   B003101

Place of Birth

1. Where were you born?

   ○ In the United States

   ○ In Puerto Rico

   ○ Somewhere else (Where?)_____ ____

   ○ I don't know   A

Years of Residence in U.S.

2. How long have you lived in the United States?

   ○ Less than 1 year

   ○ 1 year to less than 3 years

   ○ 3 years to less than 5 years

   ○ 5 years to less than 10 years

   ○ 10 years   more   C-1   336   A

Mother Living at Home

&

Type of Household =
Questions 43 & 44

43. Does either your mother or your step-mother live at home with you?

  ○ Yes   ○ No   B005601

44. Does either your father or your stepfather live at home with you?

  ○ Yes   ○ No   B005701

5. How far in school did your mother go?

  ○ She did not finish high school.

  ○ She graduated from high school.

  ○ She had some education after high school.

  ○ She graduated from college.

  ○ I don't know.   B003501

Parents' Education

6. How far in school did your father go?

  ○ He did not finish high school.

  ○ He graduated from high school.

  ○ He had some education after high school.

  ○ He graduated from college.

  ○ I don't know.   B003601

▷ Questions 7-11.   Fill in one oval for each question.

Literacy-Related Items in the Home (Grades 7 & 11)

(Items are broken into separate questions for grade 3)

	Yes	No	I don't know.
7. Does your family get a newspaper regularly?	○	○	○
8. Is there a dictionary in your home?	○	○	○
9. Is there an encyclopedia in your home?	○	○	○
10. Are there more than 25 books in your home?	○	○	○
11. Does your family get any magazines regularly?	○	○	○

C-2   B000900

Someone at Home Asks About Schoolwork

15. How often does someone from your family ask about your schoolwork?

○ Almost every day

○ About once a week

○ About once a month

○ Hardly ever or never   B00400:

Grades

39. Which of the following best describes your grades so far in school?

○ Mostly A

○ About half A and half B

○ Mostly B

○ About half B and half C

○ Mostly C

○ About half C and half D

○ Mostly D

○ Mostly below D   B005401

48. Were you ever left back a grade in school?

Grade Retention

○ No

○ Yes, I repeated grade(s): (Fill in all ovals that apply.)

○ Kindergarten

○ One

○ Two

○ Three

○ Four

○ Five

○ Six

○ Seven

○ Eight

○ Nine

○ Ten

○ Eleven

A804300

Time Spent on Homework (Grade 3)

14. How much time do you usually spend on homework each day?

○ None

○ 15 minutes or less

○ 1/2 hour

○ 1 hour

○ More than 1 hour   B003101

Time Spent on Homework (Grades 7 & 11)

14. How much time do you usually spend on homework each day?

○ I don't usually have homework assigned.

○ I have homework but I don't usually do it.

○ 1/2 hour or less

○ 1 hour

○ 2 hours

○ More than 2 hours   B003901

Preschool Attendance

17. Did you go to preschool, nursery school, or day care before kindergarten?

○ Yes   ○ No   ○ I don't know.
                                       B004201

Type of High School Program (Grade 11)

20. Which of the following best describes your high school program?

○ General

○ Academic or college preparatory

○ Vocational or technical   B005001

Type of English Class (Grade 11)

21. What kind of English class are you in?

○ I am not taking English.

○ Advanced placement or honors

○ College preparatory

○ General

○ Remedial   B005101

**Coursework
(Grade 11 only)**

> Questions 22-25. ... a class in any of the following subjects? Fill in only one oval on each line.

	Yes	No
22. Mathematics	O	O
23. Science	O	O
24. Computers	O	O
25. United States or American history	O	O

B005200

> Questions 26-38. Counting what you are taking now, have you ever taken any of the following mathematics, science, and computer courses? Fill in only one oval on each line.

	Have taken	Have not taken
Mathematics:		
26. General, business, or consumer mathematics	O	O
27. Pre-algebra or introduction to algebra	O	O
28. First-year algebra	O	O
29. Second-year algebra	O	O
30. Geometry	O	O
31. Trigonometry	O	O
32. Pre-calculus or calculus	O	O
Science:		
33. General science	O	O
34. Biology	O	O
35. Chemistry	O	O
36. Physics	O	O
Computer science:		
37. Computer competence or computer literacy	O	O
38. Computer programming	O	O

B005300

Grade 7
Math Coursework

22. What kind of mathematics class are you in this year?

○ I am not taking mathematics this year.

○ Regular mathematics

○ Pre-algebra

○ Algebra

○ Other   BOO4801

Minority Language Use
in Home (Grade 3)

3. How often do the people in your home speak a language other than English?

○ Never

○ Sometimes

○ Always

B003201

3. Do you speak a language other than English in your home?

○ No

○ Yes (What language?) _____

A805601

4. What language do you use when you speak to your mother?

○ Almost always English

○ Mostly English, but sometimes another language

○ Mostly another language, but sometimes English

○ Almost always another language

A800301

5. What language do you use when you speak to your father?

○ Almost always English

○ Mostly English, but sometimes another language

○ Mostly another language, but sometimes English

○ Almost always another language

A800401

10. What language does your mother speak to you?

○ Almost always English

○ Mostly English, but sometimes another language

○ Mostly another language, but sometimes English

○ Almost always another language

A800901

11. What language do your relatives in the United States speak around you?

○ Almost always English

○ Mostly English, but sometimes another language

○ Mostly another language, but sometimes English

○ Almost always another language

A801001

C-7

341

Minority Language   Use in Home
(Grades 7 & 11)

...speak a language other than English?

○ Never

○ Occasionally

○ About half of the time

○ Most of the time

○ Always·   BO:.

4. Do you speak a language other than
English in your home?

○ Yes   ○ No   BO:

▷ Questions 12–19.   What language do you use in each of the situations listed
below? Fill in one oval on each line.

	Always English	More English than another language	English and another language equally	Another language more than English	Always another language
The language(s) used when . . .					
12. You speak to your mother	○	○	○	○	○
13. You speak to your father	○	○	○	○	○

▷ Questions 20–23.   What language do others use in each of the situations
listed below? Fill in one oval on each line.

	Always English	More English than another language	English and another language equally	Another language more than English	Always another language
The language(s) used when . . .					
20. Your mother speaks to you	○	○	○	○	○
21. Your father speaks to you	○	○	○	○	○
22. Your parents speak to each other	○	○	○	○	○
23. Other relatives in the U.S. speak while around you	○	○	○	○	○

C-8   A803100

Minority Language   Use   Outside Home   (Grade 3)

7. What language do you use when you speak to your best friends?

○ Almost always English

○ Mostly English, but sometimes another language

○ Mostly another language, but sometimes English

○ Almost always another language   A800601

8. What language do you use when you speak to your teachers?

○ Almost always English

○ Mostly English, but sometimes another language

○ Mostly another language, but sometimes English

○ Almost always another language   A800701

9. What language do you speak when you go to stores?

○ Almost always English

○ Mostly English, but sometimes another language.

○ Mostly another language, but sometimes English

○ Almost always another language   A800801

LANGUAGE FACTORS

English Competence & Other Language Competence
(Grades 7 & 11)

▷ Questions 4–11. How well do you do the following? Fill in one oval on each line.

		Very well	Pretty well	Not very well	Not at all
English Competence = Questions 4,6,8 & 10	4. Understand English when people speak it	○	○	○	○
	5. Understand another language when people speak it	○	○	○	○
	6. Speak English	○	○	○	○
Other Language Competence = Questions 5,7,9 & 11	7. Speak another language	○	○	○	○
	8. Read English	○	○	○	○
	9. Read another language	○	○	○	○
	10. Write English	○	○	○	○
	11. Write another language	○	○	○	○

A802900

Minority Language Use Outside Home
(Grades 7 & 11)

▷ Questions 12–19. What language do you use in each of the situations listed below? Fill in one oval on each line.

The language(s) used when...	Always English	More English than another language	English and another language equally	Another language more than English	Always another language
16. You speak with other students in class	○	○	○	○	○
17. You speak with other students in the halls	○	○	○	○	○
18. You speak with your teachers	○	○	○	○	○
19. You speak in the stores you go to most often	○	○	○	○	○

A803000

30. What kinds of things in your home are in a language other than English? Fill in all the ovals that apply.

Minority
Language in
Print Media
(Grades 7 & 11)

O Newspapers

O Magazines

O Books

12. Do you listen to radio programs in a language other than English?

Minority
Language in
Electronic
Media
(Grade 3)

O Yes

O No

13. Do you watch television programs in a language other than English?

O Yes

O No

14. Do you listen to records or tapes in a language other than English?

O Yes

O No

Minority
Language in
Electronic
Media
(Grades 7 & 11)

▷ Questions 24-29.   How often does each of the following things happen at home? Fill in one oval on each line.

	Almost every day	Once or twice a week	Once or twice a month	Never or hardly ever
27. You listen to a radio program in another language	O	O	O	O
28. You watch a television program in another language	O	O	O	O
29. You listen to records or tapes in another language	O	O	O	O

PARENT FACTOR

Educational
Aspirations

▷ Questions 33-36.   Do you agree with the following statements? Fill in one oval on each line.

	Yes	No	I don't know.
35. My parents expect me to graduate from high school	O	O	O
36. My parents expect me to go to college	O	O	O

A8036

Positive Attitude Toward School

(Grade 3)   21. Do you like to go to school?

       ○ Yes

       ○ No   A802001

(Grades 7 & 11)

▷ Questions 60-63.　How often is each of the following statements true for you? Fill in one oval on each line.

	Almost every day	Once or twice a week	Once or twice a month	Never or hardly ever
60. I like to go to school.	○	○	○	○
61. I do my homework on time.	○	○	○	○

A804600

	Yes	No	I don't know.
75. Teachers control your life in school by being easy or hard on you.	○	○	○

A805200

76. When you do well on a test is it mainly because:

  ○ You studied hard

  ○ The test was easy

  ○ You are smart

  ○ You were lucky   A805301

▷ Questions 64–69.　Do you agree with the following statements? Fill in one oval on each line.

	Yes	No	I don't know
67. My teacher likes the way I read.	○	○	○

A804700

ATTITUDE FACTORS

Positive Attitude Toward Reading

(Grade 3)

22. Do you like to read?

○ Yes

○ No   A802:01

(Grades 7 & 11)

▷ Questions 60-63. How often is each of the following statements true for you? Fill in one oval on each line.

	Almost every day	Once or twice a week	Once or twice a month	Never or hardly ever
63. I read on my own outside of school.	○	○	○	○ A804600

▷ Questions 64–69. Do you agree with the following statements? Fill in one oval on each line.

	Yes	No	I don't know
65. I like to read.	○	○	○
66. I think reading is a waste of time.	○	○	○
67. My teacher likes the way I read.	○	○	○ A804700

Locus of Control   (Grades 7 & 11)

▷ Questions 72-75. Do you agree with the following statements? Fill in one oval on each line,

	Yes	No	I don't know.
72. Doing well in school is mainly a matter of luck.	○	○	○
74. If you weren't born smart, there's not much you can do about it.	○	○	○
75. Teachers control your life in school by being easy or hard on you.	○	○	○ A805200

School Variables

Questions 109-117. Approximately how many students in your school receive the following *special services*? (Enter a number or a zero in the boxes in each column.)

Number

Poverty Level/

Students Receiving Free Lunch.

115. Federal school lunch program .... ☐☐☐

Questions 50-71. Indicate the size of your school staff in each of the following categories and how many of the staff in each category speak the language of any of the language-minority students. (Enter number or zero on each line.) Use decimal numbers to indicate less than full-time equivalent staff. Numbers should sum to total school staff.

	Number of full-time (or full-time equivalent) personnel	How many speak the language of the language-minority students?

Number of Bilingual/ESL Specialists

61. Bilingual/ESL specialists ..... ☐☐ • ☐   ☐☐ • ☐

A300600

Appendix C

INTERNAL CONSISTENCY RELIABILITY COEFFICIENTS OF COMPOSITE VARIABLES

(Split Halves)

Composite Variables	#items Gr. 7 & 11	#items Gr. 3	Reliability 3	7	11
1. Minority Language at Home	6	5	.77	.95	.91
2. English Competence	4	---	---	.91	.87
3. Other Language Competence	4	---	---	.91	.87
4. Minority Language Outside Home	4	3	.57	.80	.80
5. Minority Language Electronic Media	3	3	.62	.77	.74
6. Minority Language Print Media	3	---	---	.68	.58
7. Parental Aspirations for Child	2	---	---	.23	.40
8. Positive Attitude Toward School	4	---	---	.45	.50
9. Attitude Toward Reading	4	---	---	.66	.67
10. Locus of Control	2	---	---	.46	.48