Web Appendix E
Additional Information about Achievement Gaps between Various Student Subgroups in San Diego

This appendix supplements the data presented in Chapter 4, where we presented patterns of achievement within subgroups in San Diego. The figures follow the same order as in Chapter 4 (reading scores, math scores, gains in reading, gains in math), and this appendix includes additional discussion regarding those figures.

English Learners vs. Non-English Learners

Figures E.1 and E.2 show large gaps in both reading and math achievement between English Learners and non-EL students. In the case of reading, the 1998 gap appears to be slightly wider at higher grades. In counterpoint to this initial disparity, two-year improvements by individual EL students on average outstripped that of non-EL students. Figures E.3 and E.4 illustrate gains in reading and math scores, respectively. Both figures reveal that regardless of the initial grade that we examine, EL student improvement always exceeds that of non-EL students.

Because many EL students in the district are Spanish-speaking, we examined patterns in the gap between the achievement of Hispanic EL students and Hispanic non-EL students. The data are presented in Figures E.5 to E.8. The same pattern appears within this subgroup as with EL versus non-EL students, with large initial differences in scores that have narrowed substantially over time. We also used this disaggregation to test the notion that perhaps the large reductions in the Hispanic-white achievement gap are accounted for entirely by the facts that many Hispanic students are EL, and that EL students have improved their achievement levels more quickly than have students who are proficient in English. Accordingly, we compared two-year achievement gains between white students and Hispanic non-EL students by each grade. In 13 of 16 cases,

Hispanic non-EL students' scores improved more rapidly than did white students' scores over the two-year period.

Male vs. Female Students

Figures E.9 and E.10 show spring 1998 test scores for male and female students by grade. They weakly corroborate the aforementioned findings in the broader literature. Girls have marginally higher reading scores in all grades, while boys do slightly better at math in the middle and high school years. But in some elementary grades, girls outperform boys in math. Clearly, any achievement gap between boys and girls is quite minor relative to the enormous achievement gaps related to race, English Learner status, and socioeconomic status.

Figures E.11 and E.12 suggest that in both reading and math, there is no consistent pattern indicating that students of one gender improved their achievement more than did the other gender between spring 1998 and spring 2000.

Are Achievement Gaps Really Shrinking?

There is another way to look at trends in the achievement gap. Instead of following individual students over time, as they progress from, for example, grade 2 to 4, we could instead compare students in different cohorts as they pass through grade 4. The latter comparison is akin to comparing apples to oranges because the background characteristics of students with different birth years could vary substantially over time. Still, this is the only way that one can analyze the achievement gap using school-level data such as that provided on the state Department of Education website. It is worthwhile to test whether this alternative approach yields the same conclusion that achievement gaps in the district have narrowed over time.[1]

[1] There is a second reason to try this alternative approach. To this point, we have claimed that if the gap in mean scaled scores between, say, Hispanic and white students in grade 2 was 37 points in 1998, but had fallen to 35 points by the time they reached grade 4 in 2000, then this represents a decline in the size of the achievement gap over time. This

When we compare scores in a given grade in 1998 and 2000 we almost always find that a reduction of gaps in achievement has occurred between SES groups, whites and minorities and EL and non-EL students. This across-cohort comparison of the test score trends appears in Table E.1. The results are not identical to our earlier results, which is not surprising because now we are comparing different groups of students in the same grade in different years. But in all cases these new results suggest that on average the achievement gap narrowed between various demographic groups between 1998 and 2000.

interpretation rests upon the declaration by the publisher of the Stanford 9 test that a gap of 37 points in grade 2 represents the same size gap in achievement as a 37-point gap in grade 4. Suppose that these reductions in the achievement gap always occur as students progress between grades, simply due to a quirk in the test scaling. Suppose that instead of following individual students over time, we instead compared trends in the achievement gap by grades, comparing students of different cohorts as they pass through a given grade. If there is some quirk in the test scaling, then it is possible that over time we would see no reduction at all in the achievement gap if we looked at a specific grade in successive years.

Table E.1

Percentage Reduction in Test Score Gaps, 1998-2000, Based on Comparison of Different Birth Cohorts of Students in a Given Grade

Groups Being Compared	Reading	Math
SES Quintiles 1 and 5	6.6	4.5
Hispanic-White	9.1	5.6
Asian-White	20.1	24.9
Black-White	6.9	1.4
EL/non-EL	16.6	12.6

Note: These percentage reductions represent a simple average across grades

Figure E.1

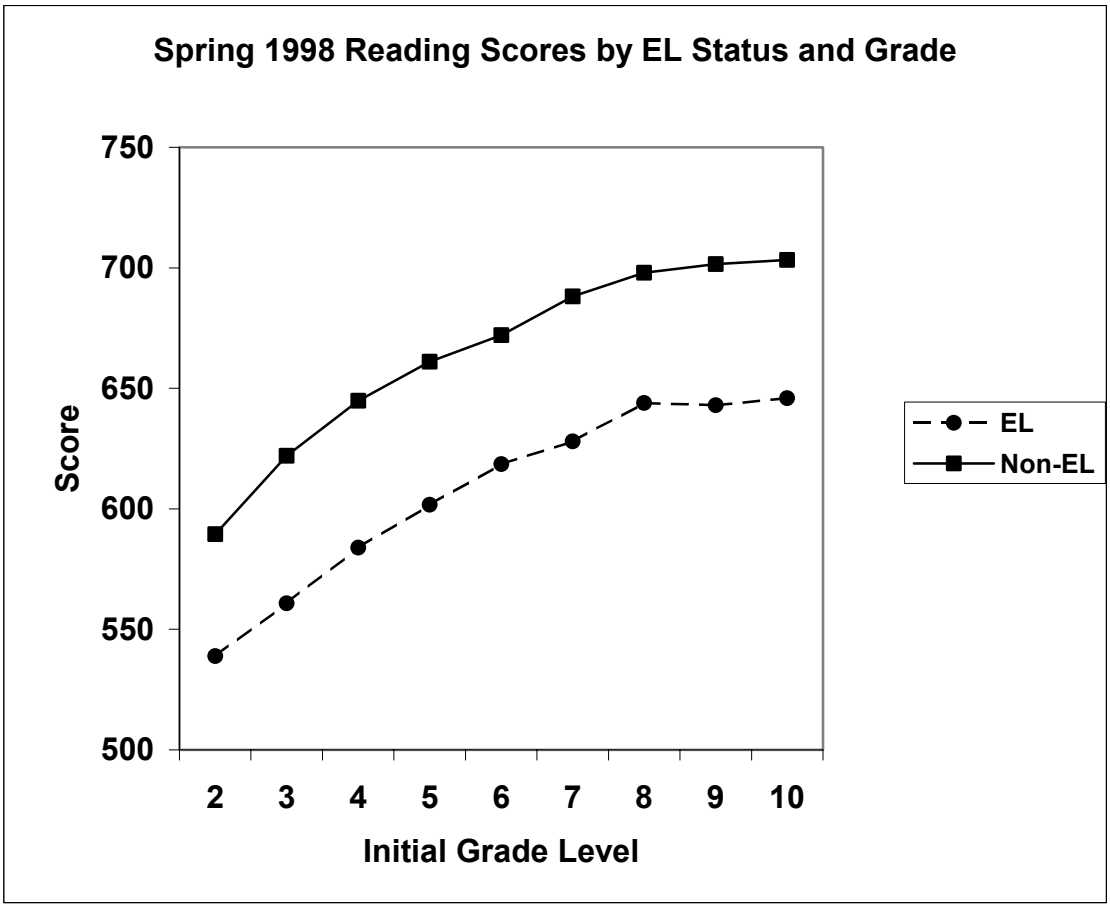

Spring 1998 Reading Scores by EL Status and Grade
750
700
650
600
550
500
Score
2
3
4
5
6
7
8
9
10
Initial Grade Level
EL
Non-EL

Figure E.2

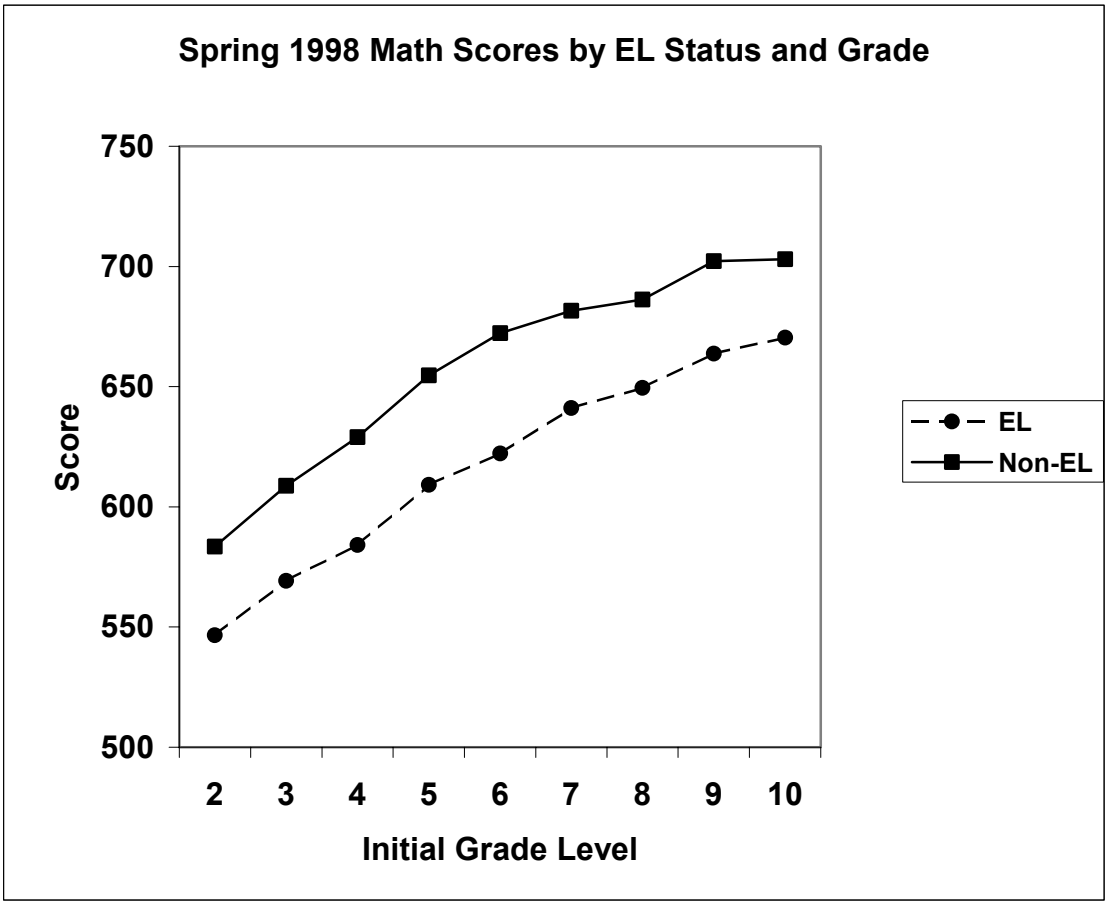

Spring 1998 Math Scores by EL Status and Grade
750
700
650
600
550
500
Score
2
3
4
5
6
7
8
9
10
Initial Grade Level
EL
Non-EL

Figure E.3

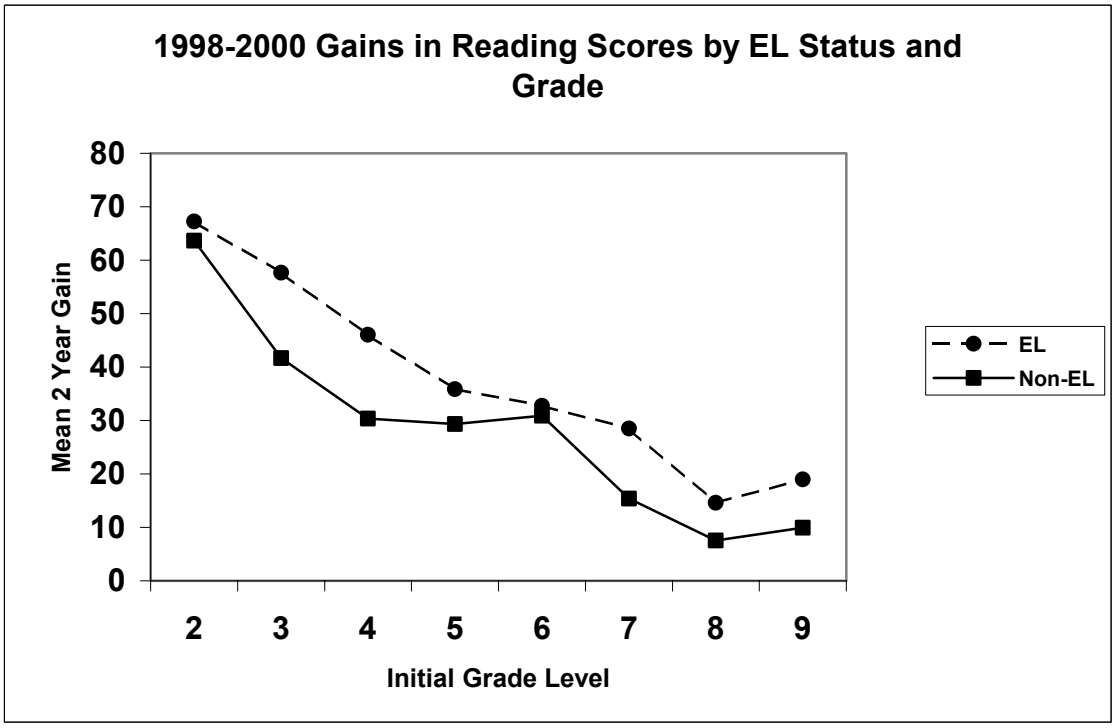

1998-2000 Gains in Reading Scores by EL Status and Grade
Mean 2 Year Gain
80
70
60
50
40
30
20
10
0
2
3
4
5
6
7
8
9
Initial Grade Level
EL
Non-EL

Figure E.4

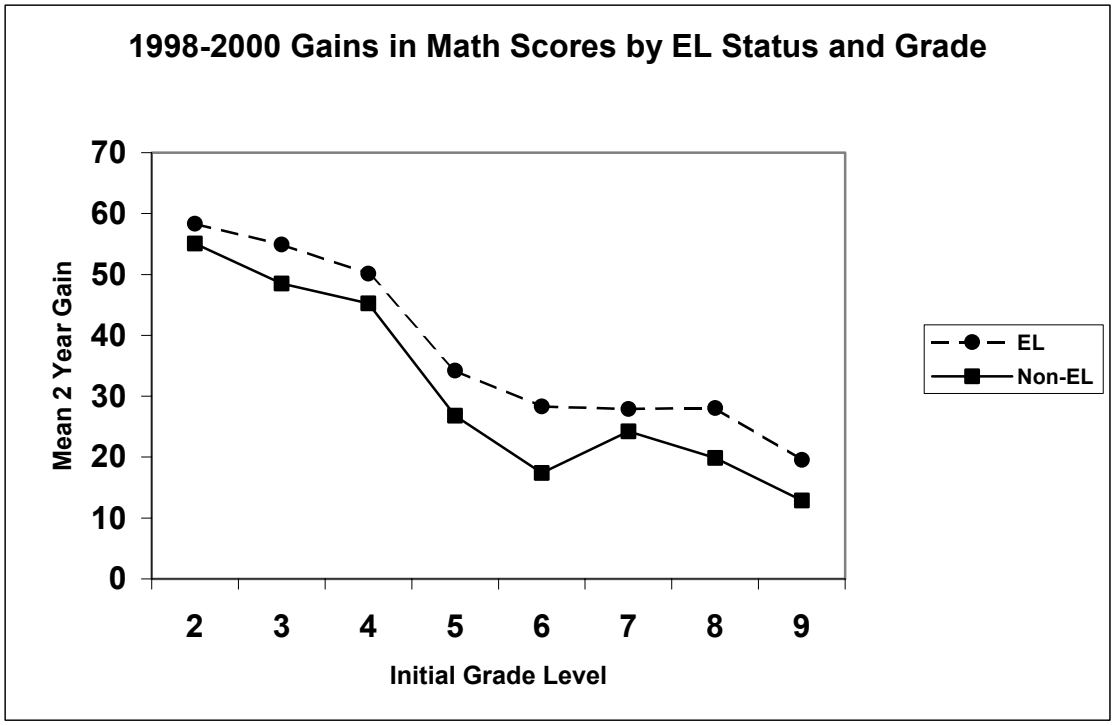

1998-2000 Gains in Math Scores by EL Status and Grade
Mean 2 Year Gain
70
60
50
40
30
20
10
0
2
3
4
5
6
7
8
9
Initial Grade Level
EL
Non-EL

Figure E.5

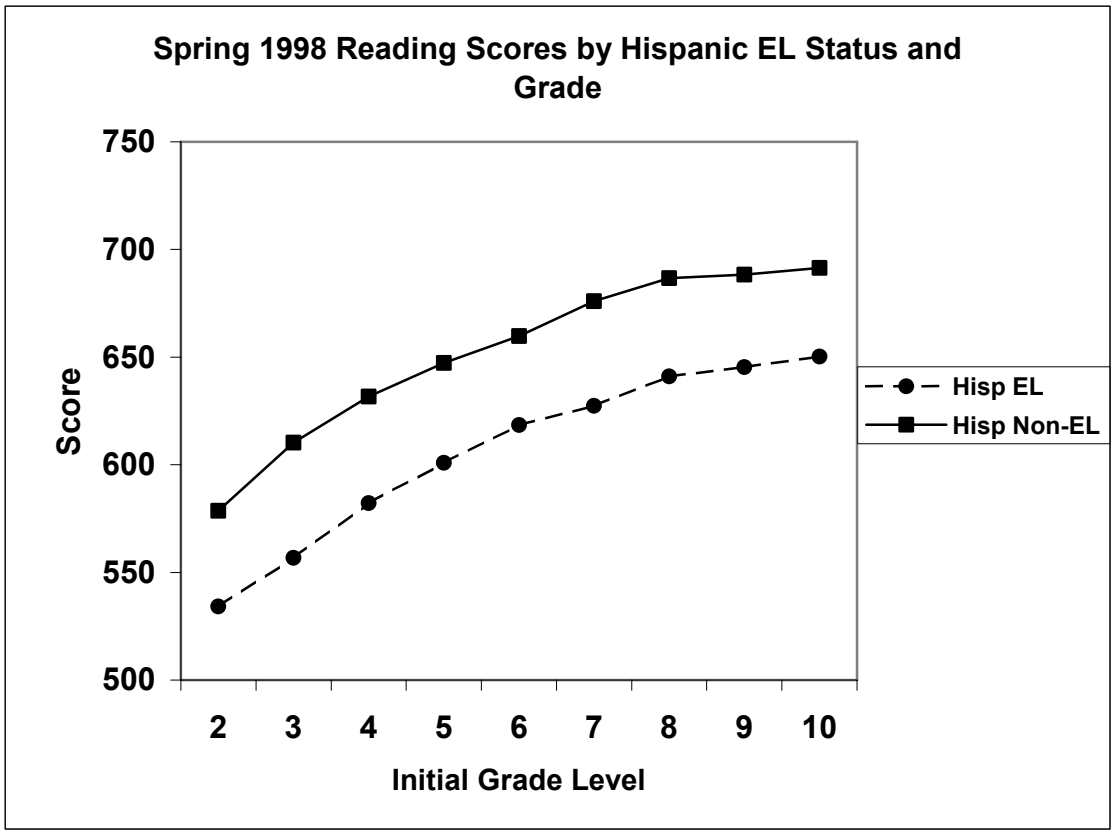

Spring 1998 Reading Scores by Hispanic EL Status and Grade
750
700
650
600
550
500
Score
2
3
4
5
6
7
8
9
10
Initial Grade Level
Hisp EL
Hisp Non-EL

Figure E.6

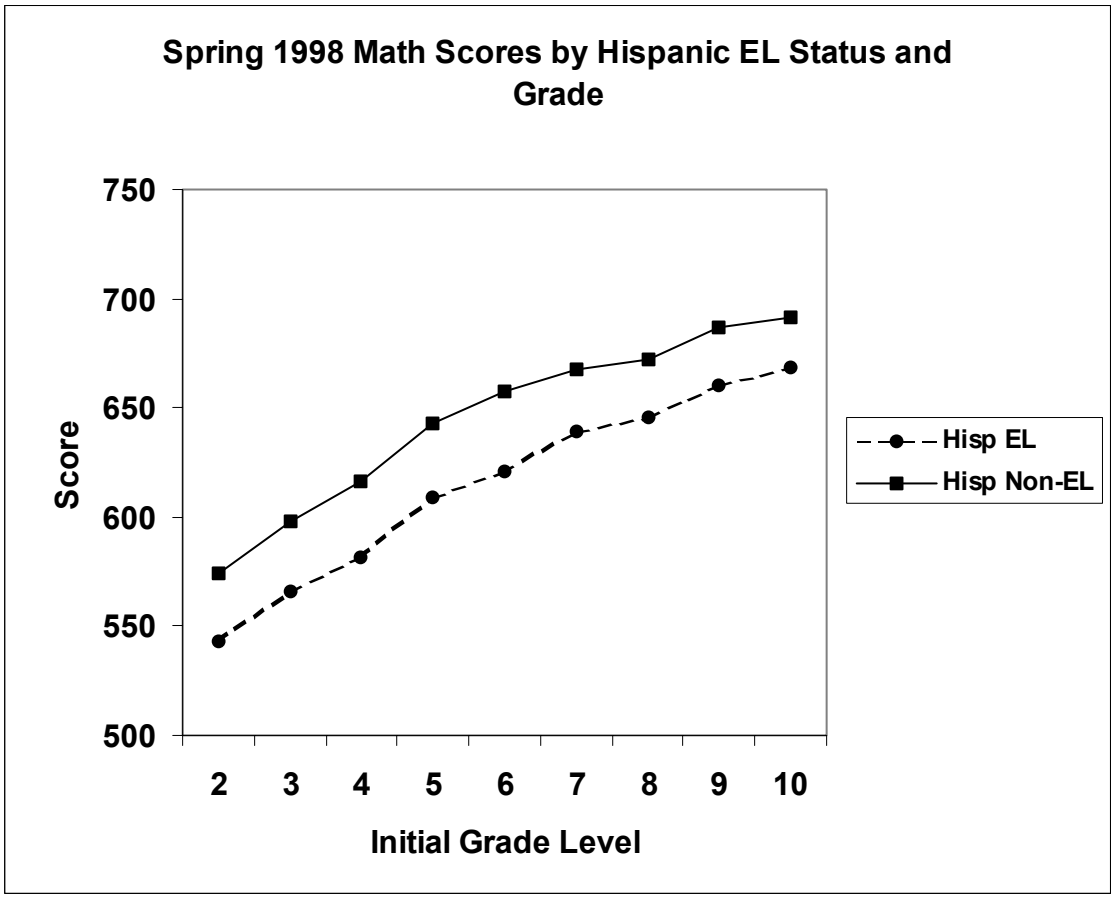

Spring 1998 Math Scores by Hispanic EL Status and Grade
750
700
650
600
550
500
Score
2
3
4
5
6
7
8
9
10
Initial Grade Level
Hisp EL
Hisp Non-EL

Figure E.7

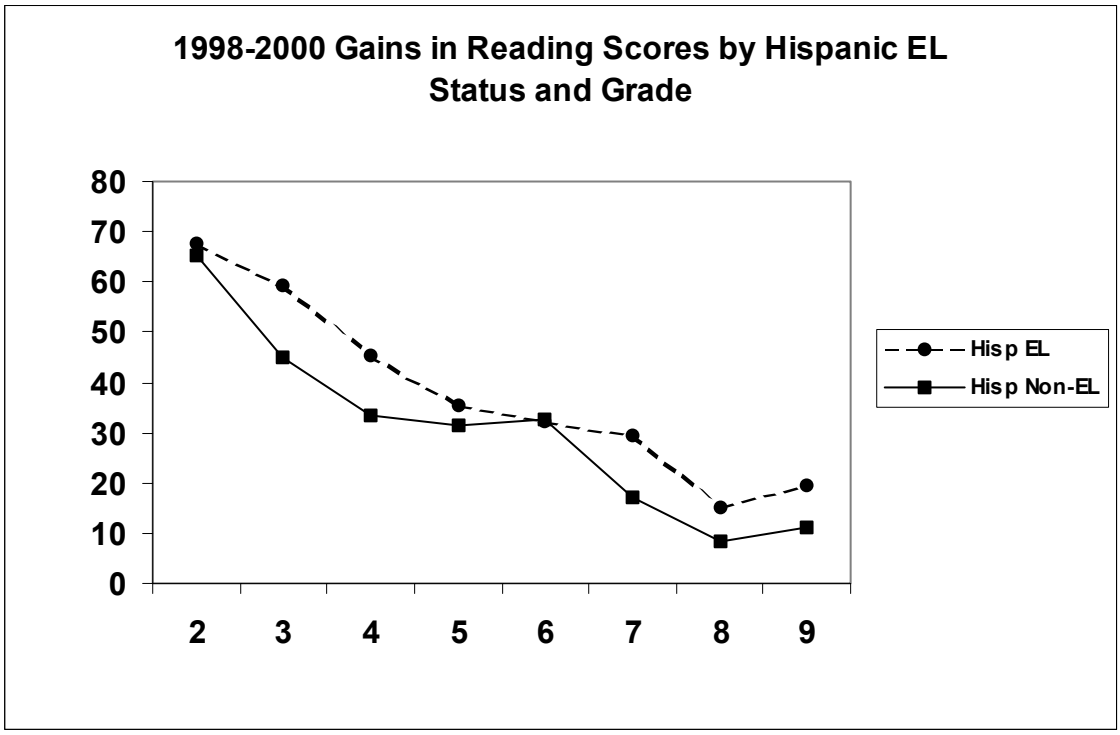

1998-2000 Gains in Reading Scores by Hispanic EL Status and Grade
80
70
60
50
40
30
20
10
0
2
3
4
5
6
7
8
9
Hisp EL
Hisp Non-EL

Figure E.8

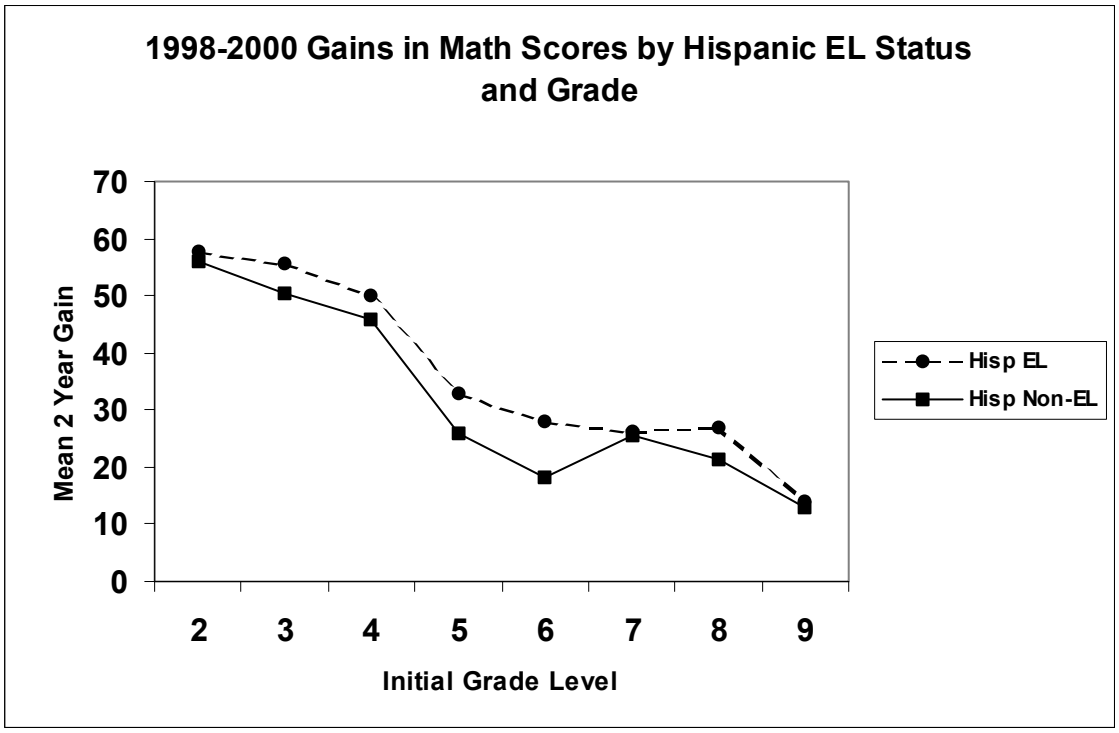

1998-2000 Gains in Math Scores by Hispanic EL Status and Grade
Mean 2 Year Gain
70
60
50
40
30
20
10
0
2
3
4
5
6
7
8
9
Initial Grade Level
Hisp EL
Hisp Non-EL

Figure E.9

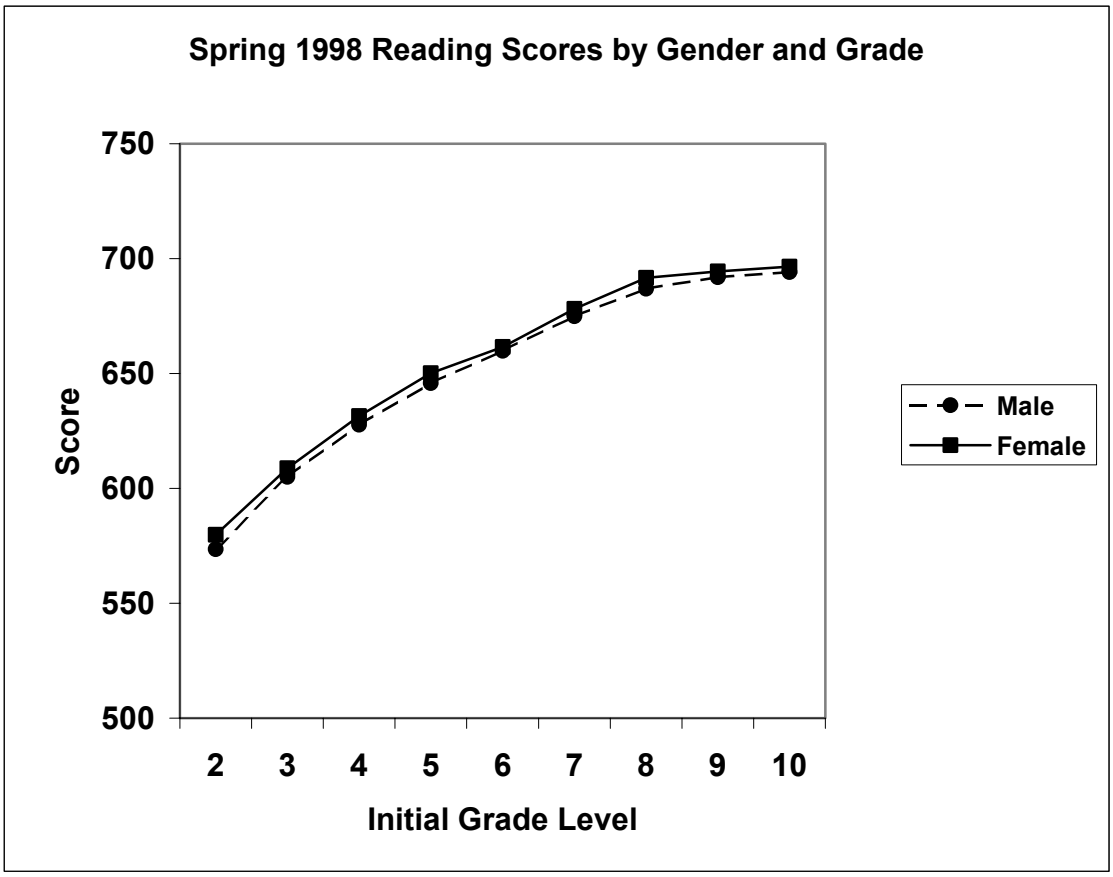

Spring 1998 Reading Scores by Gender and Grade
750
700
650
600
550
500
Score
2
3
4
5
6
7
8
9
10
Initial Grade Level
Male
Female

Figure E.10

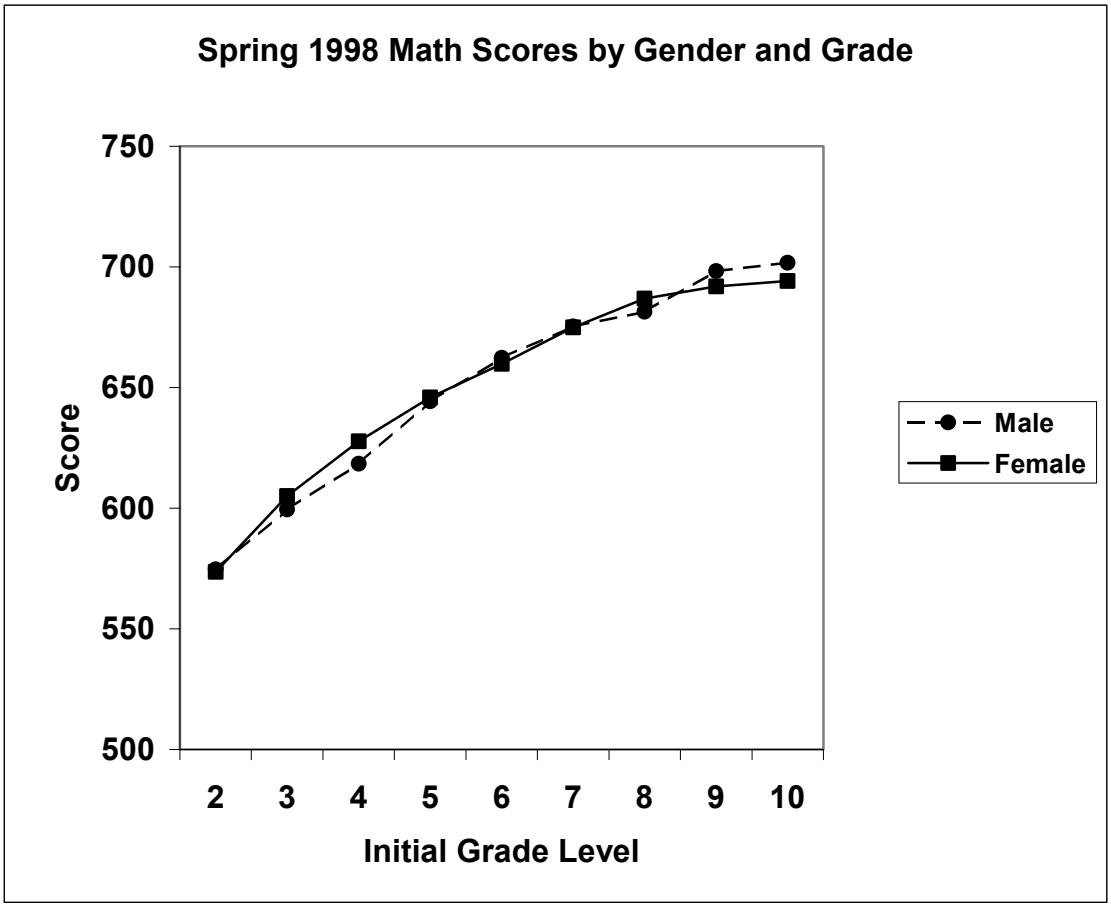

Spring 1998 Math Scores by Gender and Grade
750
700
650
600
550
500
Score
2
3
4
5
6
7
8
9
10
Initial Grade Level
Male
Female

Figure E.11

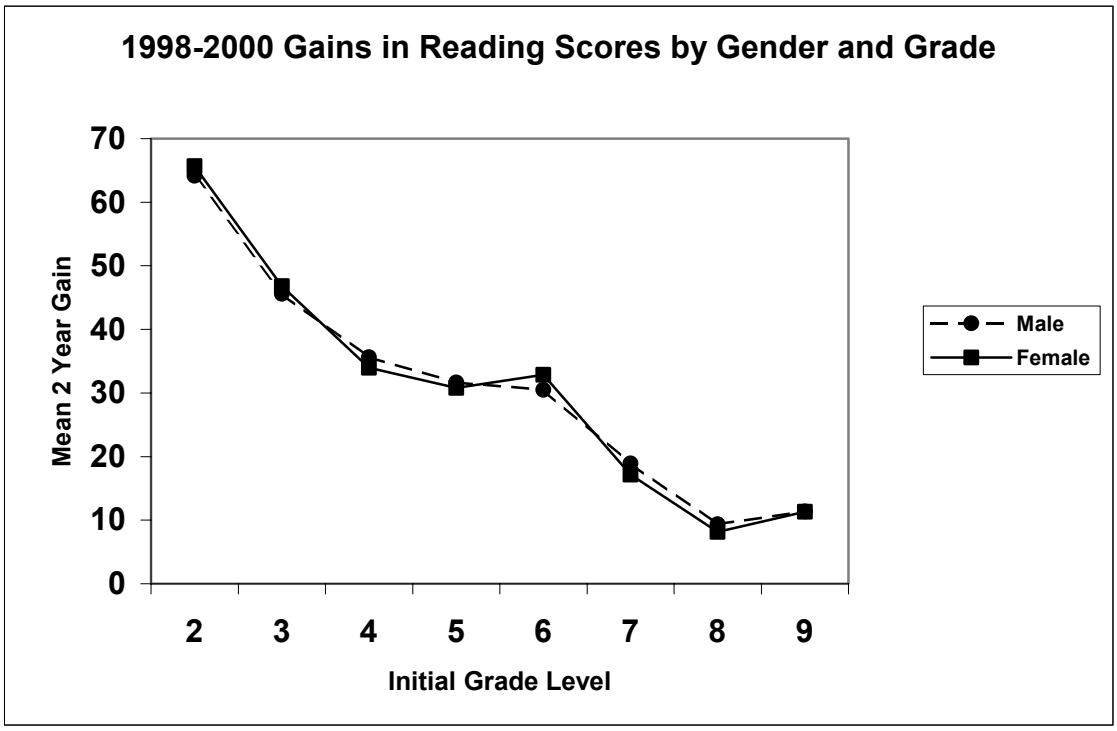
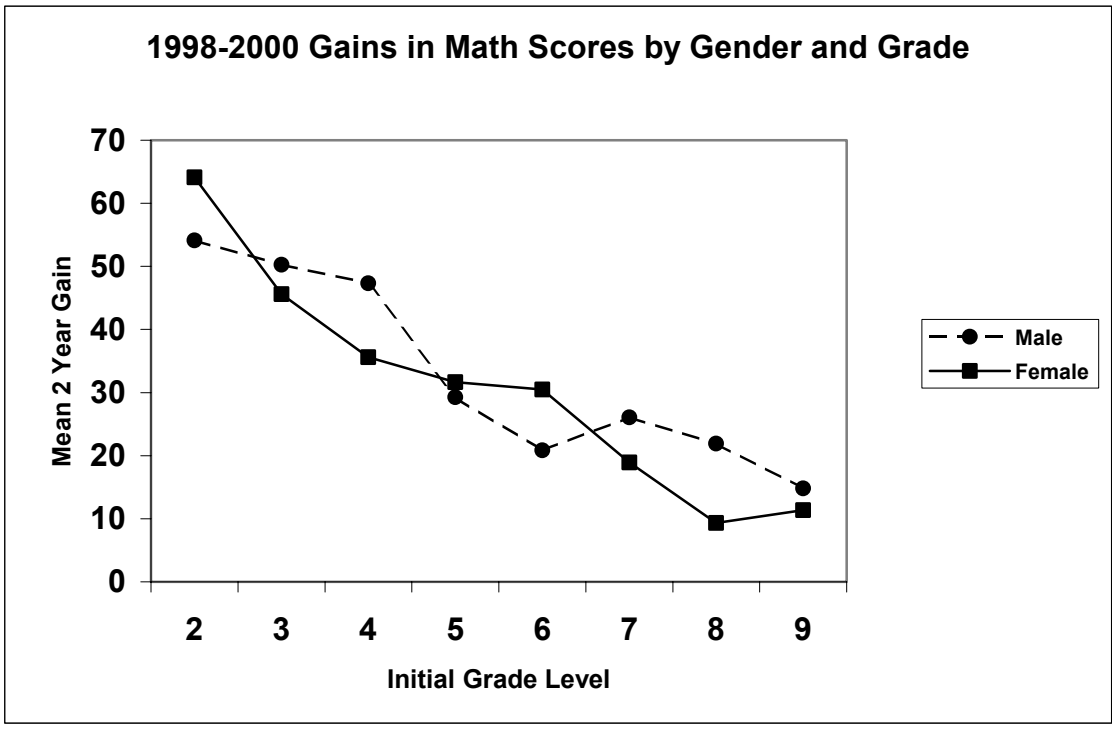

1998-2000 Gains in Reading Scores by Gender and Grade
Mean 2 Year Gain
70
60
50
40
30
20
10
0
2
3
4
5
6
7
8
9
Initial Grade Level
Male
Female

Figure E.12


1998-2000 Gains in Math Scores by Gender and Grade
Mean 2 Year Gain
70
60
50
40
30
20
10
0
2
3
4
5
6
7
8
9
Initial Grade Level
Male
Female