The Hispanic-White Achievement Gap in Oregon

Summer 2009

ECONorthwest
ECONOMICS • FINANCE • PLANNING

888 SW Fifth Avenue
Suite 1460
Portland, Oregon 97204
503-222-6060
www.econw.com

Background and Purpose of This Report

A recent report by ECONorthwest explored the achievement gap that persists between black and white students in Multnomah County. The key finding of the report was that significant achievement gaps exist for both math and reading, and that these gaps remain relatively constant over time. This means, on average, black students learn at about the same pace as white students, but they start out behind and never manage to catch up.

As a follow-up to this report, ECONorthwest analyzed available data about achievement growth in reading and math for Hispanic students in Oregon compared to white students. Our purpose is to explore patterns in achievement growth for these groups so that policy makers can better understand the nature of the gap. This report will primarily examine differences in average reading and math scores for the two groups. It will also consider differences in demographic characteristics, student mobility, teacher characteristics at schools with high Hispanic populations, and other underlying factors that that may help explain some of the difference between the two groups.

Summary of Key Findings

Across the U.S., the difference in achievement levels of white and minority students has been well documented. While this report confirms that finding for schools in Oregon, it uses detailed student-level data provided by the Oregon Department of Education to perform a deeper assessment of the condition of education for the state's Hispanic students. The report's key findings include:

- Over the past several decades, Oregon schools have undergone a dramatic demographic shift, with substantial increases in Hispanic enrollment, while white enrollment has declined. But this shift is not evenly distributed throughout the state. Ten of Oregon's 213 school districts enroll 50 percent of the state's Hispanic students. Seven of these school districts are in the Portland metropolitan area, two are located in the mid-Willamette Valley, and one is located in Southern Oregon.

- Oregon's Hispanic student population faces significant barriers to academic success. Hispanic students are more than twice as likely as white students to be economically disadvantaged and are more likely to change schools and to be taught by inexperienced teachers than are their white counterparts.

Summary of Key Findings (continued)

- Comparing the share of Hispanic and white students who meet or exceed the state's benchmarks can be misleading. Doing so suggests that the achievement gap widens in higher grades. For math, 60 percent of Hispanic 3rd graders met or exceeded state benchmarks compared to 84 percent of white students, a 24 percentage point difference. In the 10th grade, 30 percent of Hispanic students met or exceeded benchmarks compared to 58 percent of white, a 28 percentage point difference. In reading, the "proficiency gap" grows from 18 percentage points in 3rd grade to 33 percentage points in 10th grade.

- Average RIT scores tell a different story. On average, Hispanic students in Oregon score significantly lower (by seven to eight points) on achievement tests in reading and math, but this gap remains relatively constant between 3rd and 10th grades. However, when Hispanic students are compared to white students with similar socio-demographic and educational characteristics, across all tested grades, we find much smaller, but persistent, achievement gaps of about three points for reading and math. This means that Hispanic students start out behind, but learn at about the same pace as white students.

- English language proficiency is of critical importance. Half of Hispanic students are enrolled in an ESL program, compared to only one percent of white students. At the same time, the achievement gap between non-ESL Hispanics and non-ESL whites is only two to three RIT points in math and reading, compared. ESL Hispanic students are 10 to 15 points behind non-ESL whites.

- ESL programs may accelerate student learning. On average, ESL Hispanics gain about three points relative to non-ESL whites between 3rd and 6th grade. As a result, test scores for Hispanics who participate in ESL programs and remain in Oregon schools converge towards those of non-ESL Hispanics and non-ESL whites. We do not have detailed data on ESL staffing or other program elements, but it seems likely that implementation varies widely. Factors such as staff training and experience may have a significant impact on the value added by ESL enrollment.

- At most schools, Hispanic students learn at about the same rate as other students, although they often start far behind their white peers. We identify 42 schools that demonstrate statistically significant progress at closing the Hispanic achievement gap and merit a closer look to understand how their practices have helped to close the achievement gap. At these schools, Hispanics demonstrate greater average annual achievement gains than white students at the same school and more quickly than Hispanic students across Oregon:

    - Twenty-three Oregon elementary schools demonstrate statistically significant progress at closing the achievement gap in reading and math. Six additional elementary schools narrowed the gap in a single subject.

    - Five Oregon middle schools and seven high schools demonstrate meaningful progress in closing the achievement gap in math and reading. One additional middle school has closed the gap in math only.

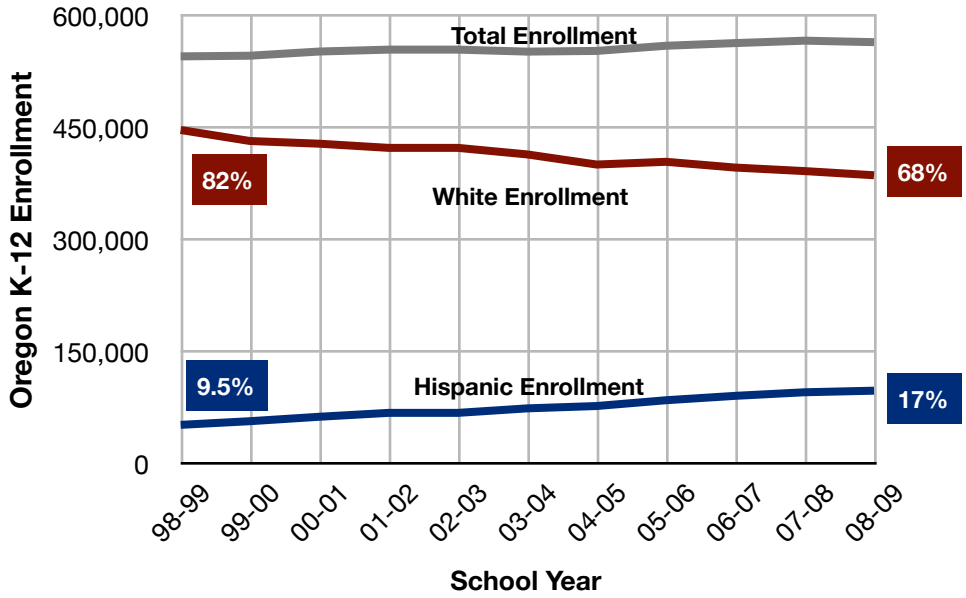
Historical Hispanic and White Enrollment in Oregon Schools

Over the past decade, a significant demographic shift has occurred in many parts of Oregon, with a large increase in the number and proportion of Hispanic residents. This shift has strongly affected the composition of enrollment in Oregon's schools. As Figure 1 shows, since the 1998-99 school year, total enrollment in public K-12 schools in Oregon increased by only 3.5 percent, far lower than the overall population gain of 11.6 percent in that decade. However, the change in school enrollment during that period differs dramatically for Hispanics compared to whites. The number of white students fell by 14 percent between the 1998-99 and 2008-09 school years, while the number of Hispanic students increased by 89 percent.

In the current school year (2008-09), Hispanic students make up 17 percent of Oregon's K-12 student body, up from 9.5 percent in 1998-99. On the other hand, white students now make up 68 percent of Oregon's students, down from 82 percent in 1998-99.

Hispanic students often have demographic characteristics that differ from those of white students in ways that can affect academic achievement. This section examines the demographic differences between Hispanic and white students in Oregon's schools, including socioeconomic status, English as a Second Language enrollment and special education status.

Figure 1: Percentage of white and Hispanic students in all Oregon K-12 Schools, school years 1998-99 through 2008-09



Source: ECONorthwest analysis of ODE data.

Profile of School Districts with High Hispanic Enrollment

Out of Oregon's 213 school districts, ten districts enroll 50 percent of the state's Hispanic students (see Table 1 and Figure 2). Seven of these school districts are in the Portland metropolitan area, two are located in the mid-Willamette Valley, and one is located in Southern Oregon.

The Salem-Keizer school district has by far the largest number of Hispanic students: 11,897 in 2007-08. This amounts to almost twice as many as the second highest district (Beaverton, with 6,589 Hispanic students). Hispanic students make up about 30 percent of the total enrollment of 11,897 students in the Salem-Keizer district.

The proportion of Hispanic enrollment varies widely among districts. Woodburn School District has the highest proportion, with Hispanic students making up 75 percent of its enrollment (3,843 Hispanic students out of 5,121 total enrollment). Forest Grove School District has the second highest proportion, with 44 percent Hispanic enrollment (2,705 Hispanic students out of 6,203 total).

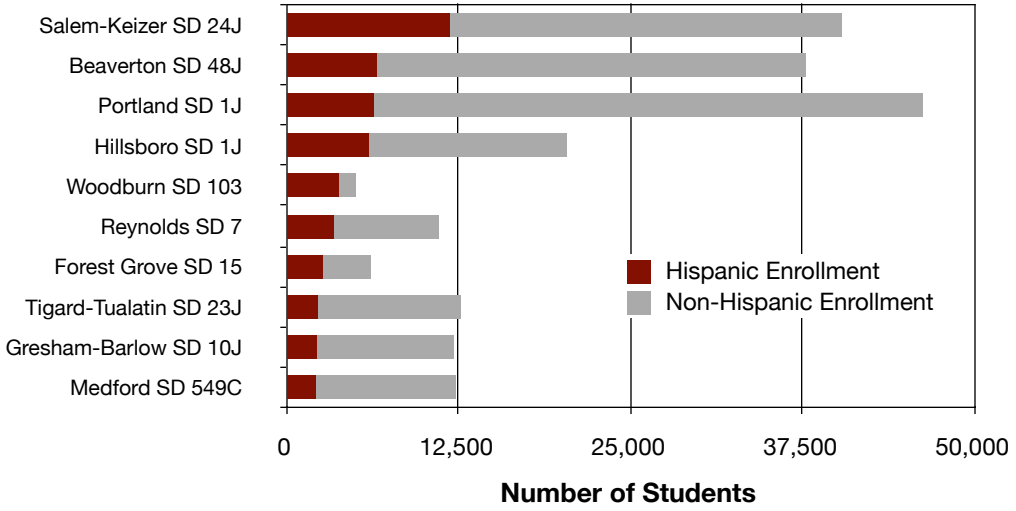
In addition to Woodburn, several school districts in Oregon have Hispanic enrollment that is greater than 50 percent of the total enrollment (Gervais, Umatilla, Nyssa, Milton-Freewater and Ontario), but these districts have relatively small total enrollment.

Table 1: Hispanic enrollment profile for the ten Oregon school districts with the largest number of Hispanic students, SY 2007-08

School District	Total Enrollment	Hispanic Enrollment	District Share of Hispanic Enrollment	Statewide Share of Hispanic Enrollment	Cumulative Share of Statewide Hispanic Enrollment	Share of District Enrolled in ESL	Share of Hispanics Enrolled in ESL
Salem-Keizer	40,451	11,897	29.4%	12.5%	12.5%	17.3%	52.2%
Beaverton	37,821	6,589	17.4%	6.9%	19.4%	15.5%	60.9%
Portland	46,284	6,419	13.9%	6.7%	26.1%	10.2%	38.7%
Hillsboro	20,405	6,036	29.6%	6.3%	32.5%	13.8%	41.0%
Woodburn	5,121	3,843	75.0%	4.0%	36.5%	59.0%	71.8%
Reynolds	11,108	3,461	31.2%	3.6%	40.1%	27.5%	65.4%
Forest Grove	6,203	2,705	43.6%	2.8%	43.0%	25.1%	56.3%
Tigard-Tualatin	12,763	2,319	18.2%	2.4%	45.4%	13.1%	57.6%
Gresham-Barlow	12,215	2,223	18.2%	2.3%	47.7%	10.9%	47.4%
Medford	12,394	2,162	17.4%	2.3%	50.0%	10.0%	51.7%

Source: ECONorthwest analysis of ODE data.

Figure 2: Hispanic and non-Hispanic enrollment in the 10 Oregon school districts with the largest number of Hispanic students, SY 2007-08



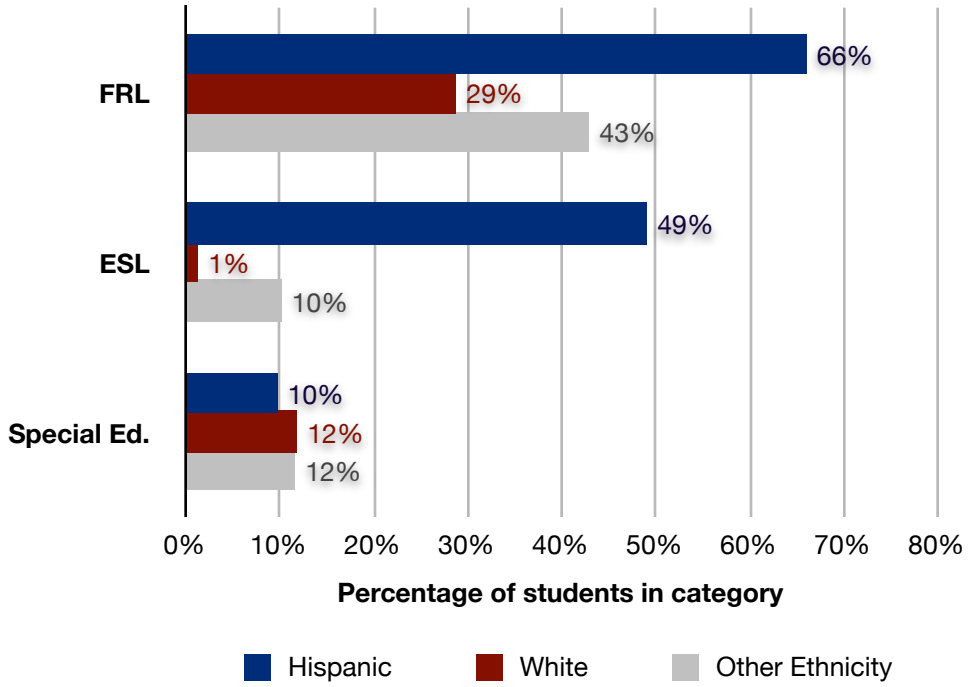
Source: ECONorthwest analysis of ODE data.

Profile of Hispanic Students in Oregon Schools

An analysis of statewide enrollment data shows that Hispanic students differ significantly from white students in at least two important characteristics, while they are close to equal on another (see Figure 3).

- **Economic Disadvantage**: Compared to white students, Hispanic students in Oregon are more than twice as likely to receive free or reduced price lunch (FPL), a commonly used proxy for socioeconomic status. Sixty-six percent of Oregon's Hispanic students receive free or reduced price lunch, compared to 29 percent of white students and 43 percent of other ethnic-minority students.
- **English as a Second Language (ESL) enrollment:** About half of Oregon's Hispanic students are enrolled in ESL programs, compared to only one percent of white students and ten percent of other ethnic-minority students.
- **Special Education Enrollment**: Hispanic students are slightly less likely to receive special education services compared to white or non-Hispanic minority students.

Figure 3: Share of students receiving free/reduced price lunch, special education and ESL services by ethnicity, 2007-08 school year



Source: ECONorthwest analysis of ODE data.

Other Factors Affecting Student Achievement

This analysis uses statistical methods to compare students who are similar in most characteristics that are relevant to academic achievement, so that the only notable difference is the students' ethnicity. Among these potentially relevant factors are student mobility, and teacher turnover and experience, which are discussed below.

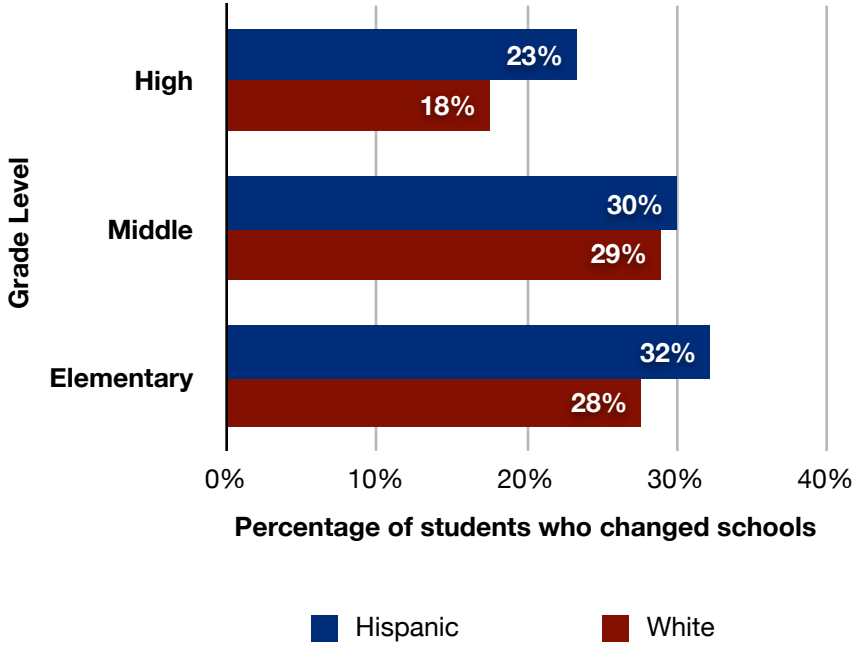
Student Mobility

Moving to a new home and changing schools can create difficult and disruptive transitions for children. Adjusting to these changes, and building new relationships with teachers and peers, can take an academic as well as an emotional toll.

As Figure 4 shows, in all non-transitional grades, Hispanic students are more likely to change schools from one year to the next. In higher grades, as students become less likely to change schools overall, Hispanic mobility increases relative to white mobility. The gap in elementary grades is 4.6 percentage points, while the gap in grades 10 through 12 increases to 5.8 percentage points.

While Figure 4 shows that students are less likely to change schools as they move into higher grades, it is important to note that this does not necessarily mean they are not changing residences at the same rate. Because catchment areas for elementary, middle and high schools get progressively larger, students have a higher likelihood of changing residences within the same catchment area in higher grades. So while students are changing schools less frequently, and experiencing fewer school-related transitional problems, the effects of changing residence may continue to be a problem for them both in and out of school. This analysis shows that this remains a more common problem for Hispanic students than for white students.

Figure 4: Statewide comparison of Hispanic and white student mobility between SY 06-07 and SY 07-08



Source: ECONorthwest analysis of ODE data.

Other Factors Affecting Student Achievement

Teacher Turnover and Experience

In numerous regions across the country, researchers have found strong correlations between student and teacher characteristics within and across school districts. These studies suggest that low-income and minority students are more likely to have lower-paid and less experienced teachers than are other students. Teacher experience is, in turn, correlated with student achievement. In addition, novice teachers appear more likely to leave schools with high proportions of minority, low-income, and low achieving students. Teacher turnover is expensive for schools and school districts, and may negatively impact student achievement.

We do not find any compelling evidence of systematic efforts to enroll Hispanic students in schools with sub-par teaching faculties. However, while the differences between the groups are relatively small, they are all in the negative direction. The largest differences are found for teacher turnover in high school, where Hispanic students are four percentage points more likely to have a teacher who is new to the school, and for teacher experience in middle school, where Hispanic students are four percentage points more likely to have a novice teacher. (Figures 7 and 8.) These figures reflect averages for teachers in 59 school districts in the state that enroll 99 percent of the state's Hispanic students. Differences are greater in some districts, and are smaller or even reversed in others.

The training and experience of ESL teachers may play an even greater role in Hispanic achievement than average teacher quality because a majority of Hispanic students enroll in an ESL program at some point. Investigating characteristics of ESL programs at the schools identified in this report as shrinking the achievement gap could yield additional, valuable information for policy makers.

Figure 5: Probability that a student is taught by a teacher new to the school, by grade level and ethnicity, SY 2007-08

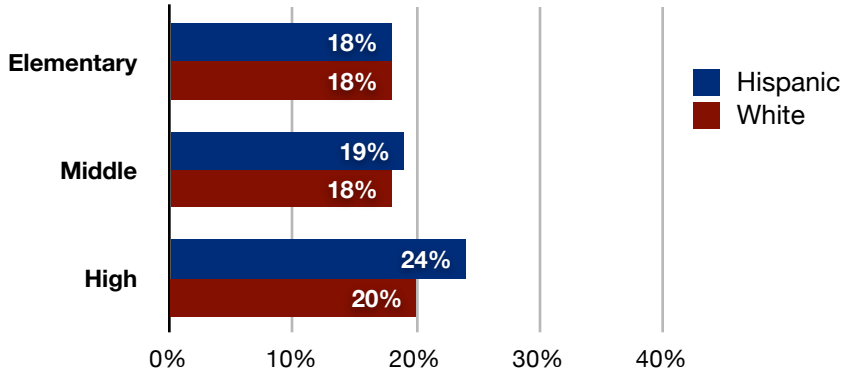
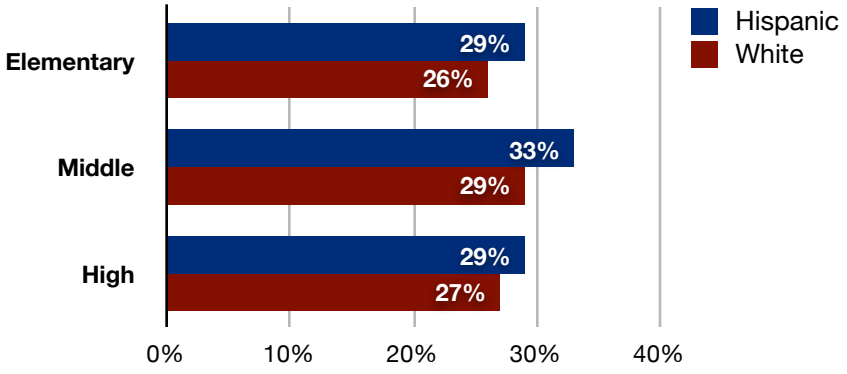


Figure 6: Probability that a student is taught by a teacher with less than five years teaching experience, by grade level and ethnicity, SY 2007-08



Source: ECONorthwest analysis of ODE data.

Student Achievement—Measured by State Benchmarks

Table 2 and Figures 7 and 8 display the percentage of white and Hispanic students in each grade level who meet or exceed the state benchmarks for the Oregon Assessment of Knowledge and Skills (OAKS) achievement tests for math and reading. Benchmarks relate to students' RIT scores on the OAKS test. A RIT score is a standardized measure of academic improvement (see appendix for details).

In 3rd grade, Hispanic students already have a significant achievement gap compared to white students. Across the state in 2007-08, 83 percent of white third-grade students met or exceeded state benchmarks for math compared to 60 percent of Hispanic students, a 23 percentage-point difference. In reading, 89 percent of white third-grade students met or exceeded the benchmark compared to 71 percent of Hispanic students, a 19 percentage-point difference.

By 10th grade, the achievement gap grows significantly based on the meets/exceeds measure of achievement. Hispanic students lag behind their white peers by 28 percentage points in math and 33 percentage points in reading.

Table 2: Share of Oregon students at each benchmark achievement level by grade and ethnicity, 2007-08

	Benchmark Achievement	Math		Reading	
		White	Hispanic	White	Hispanic
3rd Grade	Developing	17.0%	39.8%	10.7%	28.9%
	Meets	51.4%	48.3%	46.3%	53.2%
	Exceeds	31.6%	11.9%	42.9%	17.5%
5th Grade	Developing	18.7%	36.8%	18.0%	43.5%
	Meets	50.5%	50.3%	51.1%	47.7%
	Exceeds	30.9%	12.9%	30.8%	8.5%
8th Grade	Developing	25.6%	49.6%	27.7%	57.7%
	Meets	42.4%	36.3%	45.7%	32.4%
	Exceeds	29.8%	10.8%	24.3%	6.4%
10th Grade	Developing	42.6%	70.0%	28.2%	60.0%
	Meets	40.4%	26.0%	52.9%	33.9%
	Exceeds	17.1%	4.0%	18.1%	4.0%

Source: ECONorthwest analysis of ODE data.

Figure 7: Percent of Oregon students meeting or exceeding benchmarks for MATH by grade level and ethnicity, 2007-08

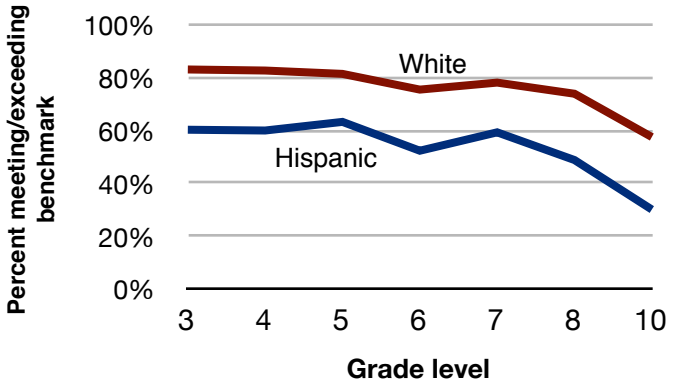
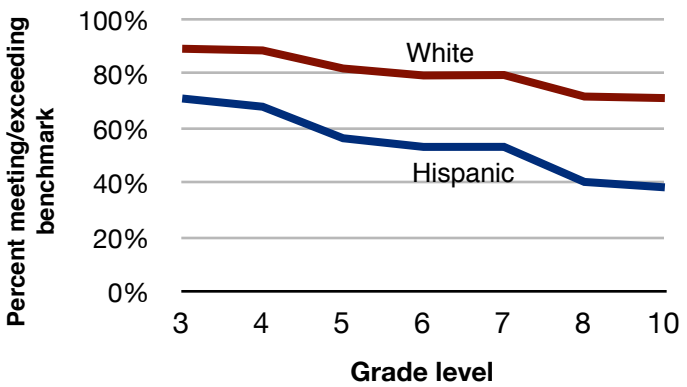


Figure 8: Percent of Oregon students meeting or exceeding benchmarks for READING by grade level and ethnicity, 2007-08



Source: ECONorthwest analysis of ODE data.

Examining the Achievement Gap—Statewide Average Assessment Scores

Table 3 looks at the achievement gap by comparing the average RIT scores of Hispanic and white students across the state, rather than the simple meets/exceeds criterion. This analysis suggests that Hispanic and white students are learning at about the same pace in Oregon schools, maintaining roughly the same achievement gap over the years, and that Hispanic students have a smaller gap when compared to white students with similar characteristics.

Table 3 also examines the difference in RIT scores for math and reading after several student characteristics that may be tied to achievement test scores are taken into account. The statistical analysis controls for school year, sex, age in months, free and reduced price lunch, enrollment in English as a Second Language, enrollment in a migrant education program, identification as intellectually gifted, and special education status.

The analysis shows that for students who are essentially similar in all of these characteristics, the differences between white and Hispanic students' achievement scores are considerably smaller than suggested by raw averages.

Table 3: Average difference between white and Hispanic students' RIT scores, with and without statistical controls, SY 2007-08

	Grade Level			
	3rd	5th	8th	10th
Math RIT Score Difference				
No statistical controls	-7	-7	-8	-7
With statistical controls	-3	-2	-3	-3
Reading RIT Score Difference				
No statistical controls	-9	-8	-8	-8
With statistical controls	-3	-3	-3	-3

Source: ECONorthwest analysis of ODE data

Notes: Analysis includes all Oregon students' scores for 2003-04, 2004-05, 2005-06 and 2006-07. Controls included in the regression include: year, sex, age in months, free and reduced price lunch, enrollment in English as a Second Language, enrollment in a migrant education program, identification as intellectually gifted, and special education status. All differences are statistically significant at the one percent level, meaning that there is only a one percent chance that this result could have occurred by chance.

Significant differences in who drops out (e.g., if a relatively larger share of relatively low-performing Hispanic students drops out between 8th and 10th grades) could affect interpretation of the apparently stable achievement gap. Based on our analysis to date, however, we have no reason to believe that such differences would affect the broad conclusions suggested by Table 3.

Academic Achievement among ESL Students

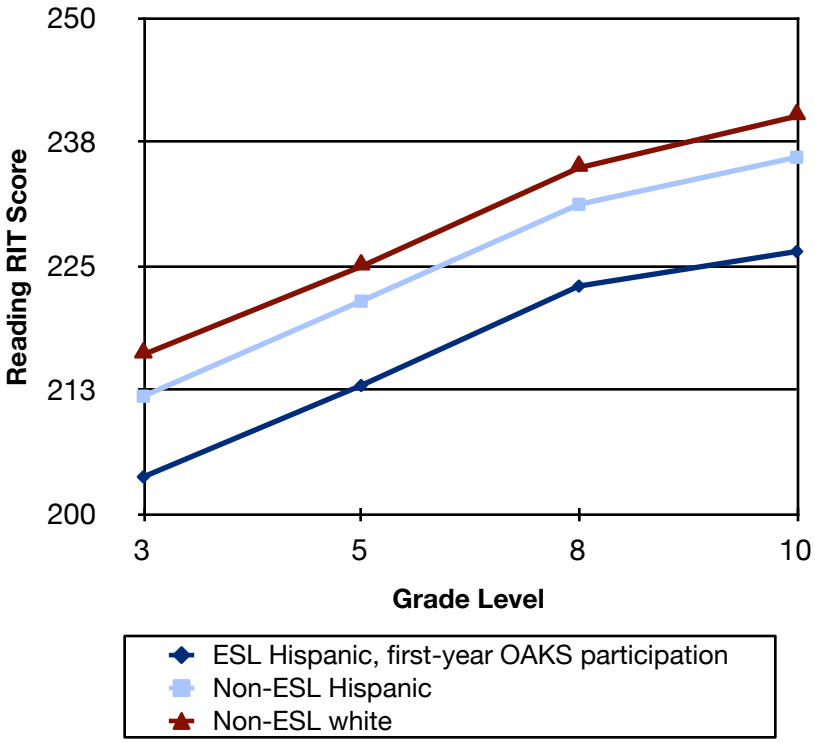
Every year, nearly half of Oregon's Hispanic students participate in an English as a Second Language program, and nearly 60 percent of all Hispanic students participate in an ESL program at some point. ESL programs are designed for students who are not proficient enough in English to benefit from instruction in core subjects in the regular classroom. Federal law allows parents to opt their child out of enrollment in an ESL program.

Individual school districts develop ESL programs following state and federal guidelines. In general, ESL programs have two required components: 1) teaching core subjects using accessible, on-grade level content to ensure academic development; and 2) teaching the English language. The Oregon Department of Education recommends pull-out programs for core subjects. In addition to regular ESL services, some school districts in Oregon have adopted bilingual programs as part of their mainstream programming. When children reach a proficiency level that will allow them to function academically in English in the regular classroom, they no longer receive ESL services.

As might be expected, the scores for Hispanic students enrolled in ESL are below those for non-ESL Hispanics and non-ESL whites. The differences are particularly striking when comparing the scores of ESL Hispanics taking their first standard OAKS tests and those of non-ESL Hispanics and non-ESL whites. Figure 9 presents the raw RIT scores for these three groups not accounting for other differences (e.g., economic status).

On average, Hispanic ESL students taking their first tests score eight to 11 points below non-ESL Hispanics and 12 to 15 points below non-ESL whites in reading (depending on grade level). Differences are similar in math, with Hispanic ESL student scoring five to eight points lower on their first tests than non-ESL Hispanics and nine to 12 points lower than non-ESL whites.

Figure 9: OAKS reading RIT scores by grade, ethnicity, and ESL status, SY 2004-05 to 2007-08



Source: ECONorthwest analysis of ODE data.

As illustrated in Table 3, otherwise similar Hispanic and white students learn at about the same rate and evidence a smaller achievement gap than suggested by unadjusted differences in RIT scores. The large gap between scores for first-year ESL students and others displayed in Figure 9 highlights the extent to which newly arrived Hispanic students drive the unadjusted white-Hispanic gap in RIT scores.

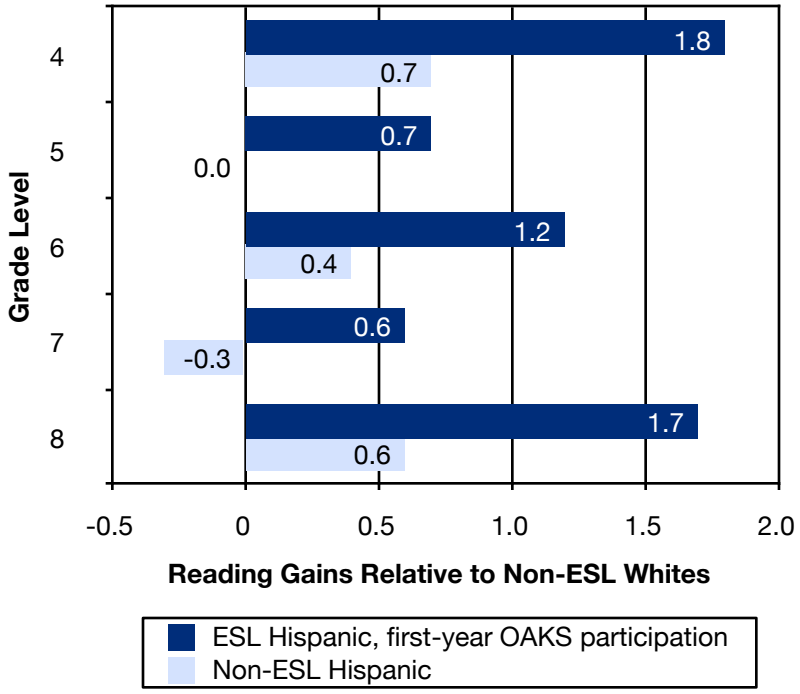
Academic Achievement among ESL Students

Over time, Hispanics participating in ESL programs grow at a faster rate than non-ESL Hispanics and non-ESL whites. On average, Hispanics participating in ESL programs improve their reading score by one point per year more than non-ESL Hispanics and by 1.3 points per year more than non-ESL whites. Figure 10 shows the average reading gains made by Hispanic ESL students relative to white students, depending on the grade level at which they are first observed in ESL. It also compares the reading gains for Hispanic ESL students to the gains made by Hispanic students who have never been in ESL, again, relative to non-ESL white students. In all grades shown in Figure 10, Hispanic ESL students outperform their non-ESL Hispanic and white counterparts.

The difference in gains between ESL and non-ESL students is smaller in math, where Hispanics in ESL programs out-gained non-ESL Hispanics by 0.3 points per year and non-ESL whites by 0.4 points per year.

As a result of the greater achievement gains on test scores by Hispanics who participate in ESL programs, over time their achievement levels approach those of non-ESL Hispanics and non-ESL whites. However, it will likely take the average ESL student several years to completely close the gap, if he or she is able to do so at all.

Figure 10: OAKS reading scores gains by grade and ESL status relative to non-ESL whites, SY 2004-05 to 2007-08



Source: ECONorthwest analysis of ODE data.

Academic Achievement among ESL Students

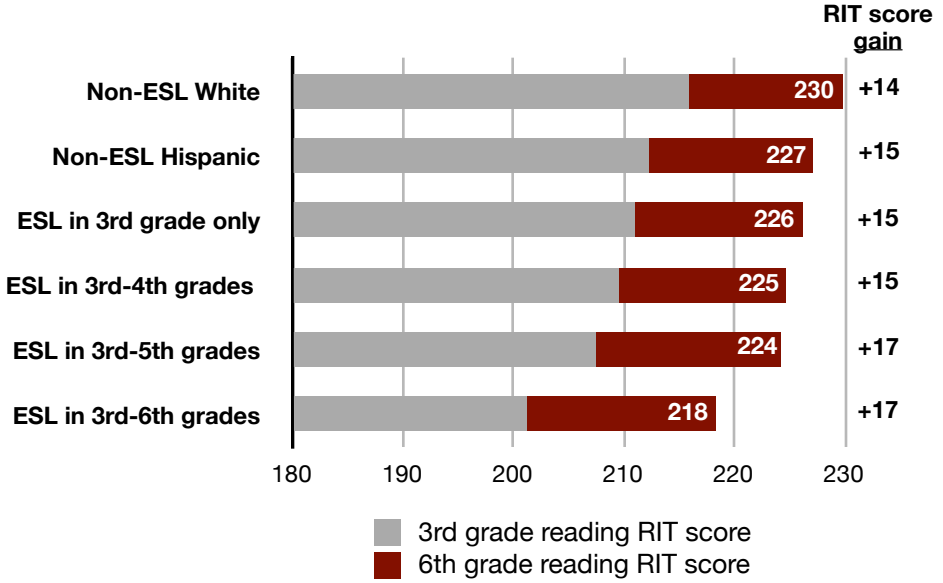
Figure 11 helps to further illustrate how Hispanic ESL students and Hispanic non-ESL students gain over time relative to non-ESL white students. It presents the reading achievement scores and gains over time for a cohort of 3rd graders in the 2004-05 school year who remained in Oregon schools (and completed tests) at least between 3rd and 6th grades. Of this cohort, 12 percent exited the ESL program after the 3rd grade, 10 percent exited after the 4th grade, 19 percent exited ESL after the 5th grade, and 59 of percent remained in ESL through the 6th grade.

In Figure 11, the gray portion of each bar represents the average 3rd grade reading RIT score for each group, and the red portion represents the cumulative gain between the 3rd and 6th grades.

On average, ESL and non-ESL Hispanics in this cohort had lower 3rd grade RIT scores compared to white students. For Hispanic ESL students, the longer they were enrolled in ESL, the lower their initial scores were. This makes sense, because the less proficient in English a 3rd grader is, the longer he or she is likely to need the support offered in an ESL program.

However, the students who spent the longest time in an ESL program achieved the highest cumulative gains on their RIT scores between 3rd and 6th grades. For example, while non-ESL white students gained an average of 14 points between 3rd and 6th grades, ESL students who remained in an ESL program for those four years gained an average of 17 points. In other words, they narrowed the gap with their white peers by three points, although a 12-point gap remains. Shorter-term ESL students narrowed their gap as well, although all the Hispanic groups in this cohort continued to lag behind their white peers at the end of 6th grade.

Figure 11: Reading RIT scores for 3rd and 6th grades by ethnicity and years in ESL program, SY 2004-05 to 2007-08



Notes: This data follows a cohort of 3rd graders in starting in the 2004-05 school year until they exited 6th grade in 2008. Non-ESL Hispanic students are those who were not enrolled in ESL between 3rd and 6th grades.

These results suggest that Hispanics participating in ESL programs are catching up with non-ESL students, although it appears to take some time for most Hispanic ESL students to catch up completely if they are able to do so.

We cannot say definitively whether ESL enrollment caused the improvement demonstrated here. ESL students might improve relative to non-ESL students simply due to the accumulation of additional experience with English. We merely document that students' larger gains from year-to-year are correlated with participation in ESL programs.

Achievement Gaps at the School Level—Raw Comparisons

It is important to note that the achievement gain differences shown in Table 3 are average differences for the entire state. Individual schools fall along a range of achievement differences. The majority of differences are negative, meaning that Hispanic students underperform relative to their white peers.

Without controlling for student characteristics, achievement differences at individual schools range from a negative gap of twelve points at the lower end of the distribution to a negative gap of one point at the high end of the distribution. The median raw achievement score gap for Hispanic students is about six points. This means that half of the schools have larger than a six point gap and half have smaller than a six point gap. With no statistical controls, nearly all schools have a negative gap, and over half of all schools have a gap large enough to be statistically significant.

Table 4 shows the share of schools with negative gaps (where, on average, white students outperform Hispanic students), the share with positive gaps (where Hispanic students outperform white students), and the share of schools with little or no gap between the two groups.

Table 4: Share of Oregon schools with statistically significant differences in achievement test scores, WITHOUT STATISTICAL CONTROLS SY 2003-04 to 2007-08

	Share of schools with negative, positive or no Hispanic gap					
	Reading			Math		
	Negative	Positive	Not significant	Negative	Positive	Not significant
3rd Grade	72%	0%	28%	65%	0%	35%
4th Grade	65%	0%	35%	57%	0%	43%
5th Grade	71%	0%	29%	61%	0%	39%
6th Grade	61%	0%	39%	61%	0%	39%
7th Grade	72%	0%	28%	67%	0%	33%
8th Grade	77%	0%	23%	77%	0%	23%
10th Grade	71%	0%	29%	70%	0%	30%

Source: ECONorthwest analysis of ODE data. See notes for table 3.

Achievement Gaps at the School Level—with Statistical Controls

While Table 4 shows the shares of schools with achievement gaps based on raw comparisons between Hispanic and white students, Table 5 shows that when underlying student characteristics are taken into account, the white-Hispanic achievement gap at individual schools becomes much smaller. This means we are comparing Hispanic and white students who are roughly similar in most relevant characteristics except ethnicity. In this case, the achievement gap ranges from negative six points at the lower end of the distribution to a slightly positive difference at the higher end (meaning that Hispanic students slightly outperform similar white students at the same school). The median achievement score gap is about two points; this means that half of the schools have larger gaps and half have smaller gaps.

Table 5 shows the share of Oregon schools with statistically significant achievement gaps for reading and math after accounting for relevant student characteristics. The results are reported by grade level. The share of schools with a significant negative gap increases considerably between the 6th and 8th grades, so that for the 8th and 10th grades about 40 percent of Oregon's schools have a significant negative achievement gap in both reading and math.

Table 5: Share of Oregon schools with statistically significant differences in achievement test scores, WITH STATISTICAL CONTROLS SY 2003-04 to 2007-08

	Share of schools with negative, positive or no Hispanic gap					
	Reading			Math		
	Negative	Positive	Not significant	Negative	Positive	Not significant
3rd Grade	23%	2%	76%	20%	1%	79%
4th Grade	19%	1%	80%	16%	1%	83%
5th Grade	21%	1%	77%	16%	0%	84%
6th Grade	17%	2%	81%	18%	2%	80%
7th Grade	29%	2%	69%	26%	1%	73%
8th Grade	40%	0%	60%	43%	0%	57%
10th Grade	40%	1%	59%	40%	1%	59%

Source: ECONorthwest analysis of ODE data. See notes for table 3.

Achievement Gaps at the School Level—Year-to-Year Gains

The evolution of the achievement gap – the distribution of gains

In this section, we examine more explicitly the evolution of the achievement gap. Does the gap increase or decrease consistently at any schools? That is, do Hispanic students gain more (or less) than white students attending the same school? The short answer to this question is, for the most part, no. On average, Hispanic students and white students at the same school grow at the same rate. This is consistent with the description of the fairly constant raw achievement gaps outlined above.

Single-grade changes

Table 6 shows that while there are some schools where Hispanics grew at a faster rate than whites from one year to the next (and others where whites grew at a faster rate than Hispanics), at the vast majority of schools there is no difference in the gains made by Hispanic and white students. For example, between 3rd and 4th grades, reading score gains were lower by a statistically significant amount for Hispanic students in only five percent of schools, and higher for only four percent of schools. *Ninety-one percent* of schools had no significant difference in reading gains between the two groups. The distribution of math gains between 3rd and 4th grades are almost identical.

As shown in Table 6, this pattern is apparent in both reading and math in all grades. At the median school, Hispanics and whites gain essentially the same amounts. In most cases, only a small share (less than 10 percent) of schools exhibit statistically significant differences in the sizes of the gains made by Hispanics and whites.

Table 6: Share of Oregon schools with statistically significant differences in year-to-year achievement gains, WITHOUT STATISTICAL CONTROLS SY 2003-04 to 2007-08

Grade Level	Share of schools with negative, positive or no Hispanic gap					
	Reading			Math		
	Negative	Positive	Not significant	Negative	Positive	Not significant
3rd to 4th	5%	4%	91%	6%	5%	90%
4th to 5th	6%	7%	87%	7%	7%	87%
5th to 6th	12%	6%	83%	12%	6%	82%
6th to 7th	9%	5%	86%	9%	5%	86%
7th to 8th	3%	9%	88%	4%	7%	89%
8th to 10th	1%	20%	79%	1%	11%	87%

Source: ECONorthwest analysis of ODE data. See notes for table 3.

Thus, from year to year there are some grades at some schools where the achievement gap grows and some where it shrinks; however, for the most part, whites and Hispanics grow at the same pace. Adding additional student level controls does not significantly change these results. The distribution of gain differential widens a little, but the share of schools with statistically significant differences falls.

Achievement Gaps at the School Level—Year-to-Year Gains

Changes across multiple grades

While it is possible for the achievement gap to increase or decrease in a particular grade from year to year, this measure does not indicate whether or not the school-wide gap is increasing or decreasing. Examining year-to-year gains merely suggests that the gap may be increasing or decreasing in a particular grade at a particular school.

In order to assess cumulative changes in the Hispanic-white achievement gap, we calculated the change in the size of the achievement gap from the first grade it is observed at that school (say, 6th grade) through the last grade at that school (say, 8th grade). This analysis shows that at a large majority of schools the achievement gap does not change substantially from the first grade of observation to the last. At nearly 70% of schools the change in the achievement gap is less than +/- 3 points from the first grade of observation to the last.

However, a few schools did show fairly significant changes in the size of the achievement gap. These schools warrant further investigation. It is possible that these gaps are statistical artifacts driven by a few outlier students, but at some of these schools the change in gap size may reflect policy choices. For instance, at the eight schools with a cumulative gain of greater than 10 points, four reflect schools with small Hispanic populations and two do not show consistent, large gains across multiple grades. Thus, the share of schools showing large cumulative changes that reflect specific policies is likely small.

Closing the Achievement Gap—Notable Schools

While Hispanic students generally have slightly lower achievement scores compared to their white peers, some schools are notable exceptions. At 29 Oregon elementary schools, Hispanic students actually show statistically significantly greater average annual achievement gains in math and/or reading compared to both white students at the same school and to other Hispanic students across the state (Table 7). Twenty-three of these schools have closed the achievement gap for both reading and math.

These schools span all grade levels, vary widely in size, and are located in urban, suburban and rural areas across the state. They merit a closer look to understand how their practices have helped to close the achievement gap.

This list includes only schools where Hispanic students demonstrate greater achievement gains than white students at the same school. In recent years, other schools across the state have demonstrated considerable improvements in overall student achievement. Some of these have a relatively high proportion of Hispanic students. Because of high Hispanic enrollment, these broad-based improvements can also work to close the statewide achievement gap even if the within-school gap does not change. Swegle Elementary School, highlighted in the Salem Statesman Journal in May[1], provides a prime example. The school, where over 50 percent of 2007-08 OAKS test takers were Hispanic, has greatly improved overall student achievement levels. Although overall school improvement was not part of our analysis, schools like Swegle also warrant further investigation regarding practices that have helped boost student performance.

[1]Ryan, Mackenzie. "Case study: How one school is bucking the trend," *Salem Statesman Journal*, May 24, 2009.

Table notes: This analysis included achievement scores from the 2003-04 through 2007-08 school years. It includes schools with a statistically relevant number of Hispanic students, and shows schools with positive Hispanic gain differences at the 10 percent level of statistical significance; that is, there is less than a 10 percent chance that this difference could have occurred by chance.

Table 7: Elementary schools where average annual achievement gains for Hispanic students exceeded gains for white students at the same school and for Hispanics statewide (2003-04 to 2007-08)

Elementary School	Reading Gap	Math Gap	District
Aloha-Huber Park K-8	+	+	Beaverton
Atkinson	+		Portland
Bridgeport	+		Tigard-Tualatin
Capitol Hill	+	+	Portland
Clackamas	+	+	Clackamas
East	+	+	Tillamook
Farmington View	+	+	Hillsboro
Garfield	+	+	Corvallis
Gilbert Park	+	+	David Douglas
Grout		+	Portland
Hammond	+	+	Salem-Keizer
Harrisburg	+	+	Harrisburg
Hartley	+	+	Reynolds
Hoover	+	+	Salem-Keizer
James Templeton	+	+	Tigard-Tualatin
Lee	+	+	Salem-Keizer
Lincoln	+	+	Woodburn
Lincoln Park	+	+	David Douglas
McNary Heights	+		Umatilla
Metzger	+	+	Tigard-Tualatin
Minter Bridge	+	+	Hillsboro
Nellie Muir	+	+	Woodburn
Peter Boscow	+	+	Hillsboro
Philander Lee	+	+	Canby
Reedville	+	+	Hillsboro
Scott		+	Portland
Tumalo Community K-8		+	Redmond
Vern Patrick	+	+	Redmond
Woodland	+	+	Reynolds

Source: ECONorthwest analysis of ODE data

Closing the Achievement Gap—Notable Schools

At five Oregon middle schools, Hispanic students show statistically significantly greater average annual achievement gains in math *and* reading compared to both white students at the same school and to other Hispanic students across the state (Table 8). One middle school has closed the gap in math but not reading.

Similarly, seven high schools have closed the achievement gap in both math and reading. Again, these schools deserve a closer look to understand how they achieved success.

Table 8: Middle and high schools where average annual achievement gains for Hispanic students exceed gains for white students at the same school and for Hispanics statewide (2003-04 to 2007-08)

School	Reading Gap	Math Gap	District
Clara Brownell Middle	+	+	Umatilla
Columbia City Middle (Grade 6)		+	St. Helens
George Middle	+	+	Portland
Hosford Middle	+	+	Portland
Jackson Middle	+	+	Portland
Jane Goodall Environmental Middle Charter	+	+	Salem-Keizer
Canby High	+	+	Canby
Churchill High	+	+	Eugene
Eagle Point High	+	+	Eagle Point
Forest Grove High	+	+	Forest Grove
Oregon City Senior High	+	+	Oregon City
South Salem High	+	+	Salem-Keizer
South Wasco County High	+	+	So. Wasco County

Source: ECONorthwest analysis of ODE data

Table notes: This analysis included achievement scores from the 2003-04 school year through the 2007-08 school year. It includes schools with a statistically relevant number of Hispanic students, and and shows schools with positive Hispanic gain differences at the 10 percent level of statistical significance; that is, there is less than a 10 percent chance that this difference could have occurred by chance.

Appendix—Achievement Testing in Oregon

Each year, Oregon students in the 3rd through 8th grades and the 10th grade take the Oregon Assessment of Knowledge and Skills (OAKS) achievement tests for reading and math (and writing and science in certain grades). OAKS scores are expressed in RIT points. A RIT point is a standardized measure of academic improvement. The term RIT is abbreviated from Rasch Units, where each point, or Rasch Unit, increase identifies an equal amount of improvement. For example, an improvement of ten points from 230 to 240 indicates an equal amount of academic growth as an improvement from 210 to 220.

Students' RIT scores are assessed by comparison to benchmarks set by the Oregon Department of Education. ODE sets the benchmarks separately for each subject . Based on the performance range a student's score falls into, the student receives a performance rating of "Exceed the Standard", "Meet the Standard", "Nearly Meet the Standard", "Low", or "Very Low" for the relevant subject.

The Annual Yearly Progress reports required under the federal No Child Left Behind Act rely, in part, on the share of students who at least "Meet the Standard". The percentage of students meeting this benchmark within a school or district is often used as a summary indicator for the quality of instruction at the school or district.

Table A-1: "Meets" benchmarks for OAKS achievement test RIT scores

Grade	Reading	Math
3	204	205
4	211	212
5	218	218
6	222	221
7	227	226
8	231	230
10	236	236

Note: The benchmarks changed slightly between the 2005-06 and 2006-07 school years. In most cases the standards were raised by a few points.