January 2007

Tenth-Grade WASL Results in Spring 2006:
Association Between Poverty and WASL Performance by Race/Ethnicity

In 2006, the Legislature directed the Washington State Institute for Public Policy (Institute) to identify the characteristics of students who do not meet standard on the Washington Assessment of Student Learning (WASL).[1] In a previous report, we summarized results of the 10th-grade WASL in spring 2006 by the racial/ethnic characteristics of students.[2]

This report examines 10th-grade WASL results in spring 2006 for students who are classified as in poverty and not in poverty, by race/ethnicity.

In this report, we continue to adopt the racial/ethnic categories and terminology used by the Office of Superintendent of Public Instruction (OSPI):

- **American Indian**: American Indian or Alaska Native;
- **Asian**: Asian, Native Hawaiian, or Pacific Islander;
- **African American**: Black or African American;
- **Hispanic**: Hispanic or Latino/a; and
- **White**: Caucasian or White.[3]

In addition, students are categorized as "in poverty" if they:

- Were eligible for **free or reduced-price meal** benefits, or
- Received services from the **Title I Targeted Assistance** Program, or
- Received services from the **Title I Migrant Education** Program.

The analyses that follow are based on those students with available data for WASL performance in spring 2006, race/ethnicity, and at least one of the poverty indicators (n=71,154).

Summary

This report examines 10th-grade WASL results in spring 2006 for students who are in poverty and not in poverty, by race/ethnicity.

For this study, students are "in poverty" if they are eligible for free or reduced-price meal benefits, or if they receive Title I services from the Targeted Assistance or Migrant Education programs.

The following table shows the percentage of 10th graders who met standard in all three subject areas of the spring 2006 WASL—reading, writing, and math—by race/ethnicity and poverty status:

Race/Ethnicity	Percentage Who Met Standard		
	Not in poverty	In poverty	Overall*
Asian	63%	41%	56%
White	58%	33%	53%
American Indian	37%	20%	28%
Hispanic	38%	17%	24%
African American	29%	16%	23%
All students	56%	28%	48%

For each racial/ethnic group, students in poverty have lower met-standard rates than students who are not in poverty.

When gauging the *relative* association between race/ethnicity and poverty with met-standard rates, our analysis finds that:

- For **reading and writing**, poverty is a much stronger predictor of low WASL performance than is race/ethnicity (American Indian, Hispanic, and African American).

- For **math**, the relative impact of poverty and race/ethnicity on WASL performance is roughly equivalent.

- Because WASL met-standard rates are largely driven by performance in math, the net effects of poverty and race/ethnicity on **overall met-standard rates** are also equivalent.

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[1] SSB 6618, Chapter 352, Laws of 2006.

[2] W. Cole & R. Barnoski. (2006). *Tenth-grade WASL in spring 2006: Results by race and ethnicity—Revised*. Olympia: Washington State Institute for Public Policy, Document No. 06-11-2203.

[3] Office of Superintendent of Public Instruction. (2006). *Core student record system: Monthly collection data manual for the 2006–2007 school year*. Olympia, WA: OSPI, p. 56.

* To ensure comparability, overall results are based on a restricted sample of students for whom poverty indicators are available.

POVERTY BY RACE/ETHNICITY

Exhibit 1 displays the percentage of students who, based on the aforementioned definition, were classified as living in poverty during the 2005–06 school year by race/ethnicity. Overall, 27 percent of 10th graders with available data were in poverty.[4] Disaggregated by race/ethnicity, the percentage ranges from 20 percent of White students to 69 percent of Hispanic students. Approximately half of African American and American Indian students were in poverty, compared with 28 percent of Asian students.

MEETING STANDARD ON THE WASL BY RACE/ETHNICITY AND POVERTY

Exhibit 2 displays the percentage of students who met standard in all three WASL subject areas—reading, writing, and math—in spring 2006 by race/ethnicity and poverty. For each racial/ethnic group, students who were not in poverty met standard at substantially higher rates than students in poverty.

For example, at the upper end of the performance distribution, 63 percent of Asian students who are not in poverty met standard on the WASL compared with 41 percent of Asian students in poverty. Conversely, among African Americans, 29 percent of students who are not in poverty and 16 percent of students in poverty met standard on the WASL in spring 2006.

READING PERFORMANCE BY RACE/ETHNICITY AND POVERTY

Exhibit 3 illustrates reading performance on the spring 2006 WASL by race/ethnicity and poverty. Slightly more than 90 percent of Asian and White students who are not in poverty met standard in reading compared with 80 to 83 percent of African American, Hispanic, and American Indian students who are not in poverty.

Relative to students who are not in poverty, met-standard rates among students in poverty were 13 percentage points lower for Asian and White students and 14 to 20 percentage points lower among African American, American Indian, and Hispanic students.

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[4] Nationwide in 2005, 22.8 percent of 5- to 17-year-olds lived in households with incomes below 130 percent of the federal poverty level (FPL), and 35.8 percent lived in households with incomes below 185 percent of FPL; see: *Annual Demographic Survey* <http://pubdb3.census.gov/macro/ 032006/pov/new01_000.htm>. The 130 percent and 185 percent of FPL thresholds correspond to the eligibility guidelines for free and reduced-price meal benefits, respectively; see: Department of Agriculture, *Child nutrition programs—Income eligibility guidelines* <http://www.fns.usda.gov/cnd/governance/notices/iegs/IEG05-06.pdf>. Note that our data include 10th-grade students only, who are typically 15 to 16 years old.

Exhibit 1
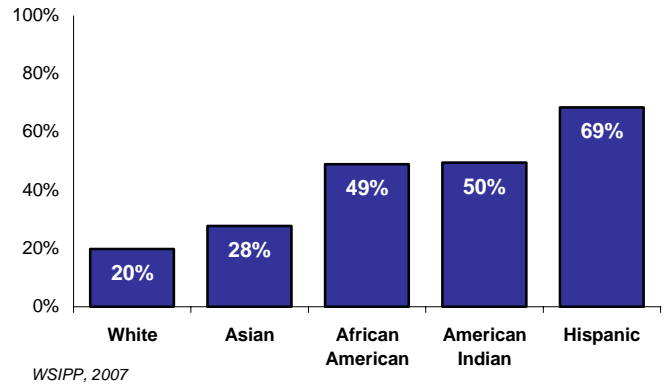**Percentage of Students in Poverty by Race/Ethnicity in Spring 2006**

White 20%, Asian 28%, African American 49%, American Indian 50%, Hispanic 69%

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Exhibit 2
Percentage of Students Who Met Standard in *All Three Subject Areas* of the WASL by Race/Ethnicity and Poverty in Spring 2006
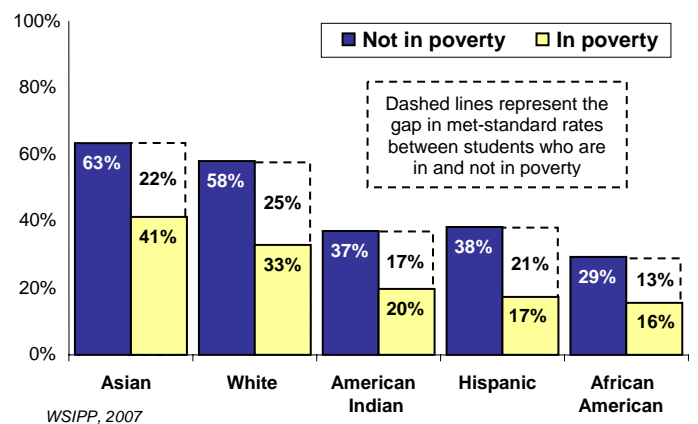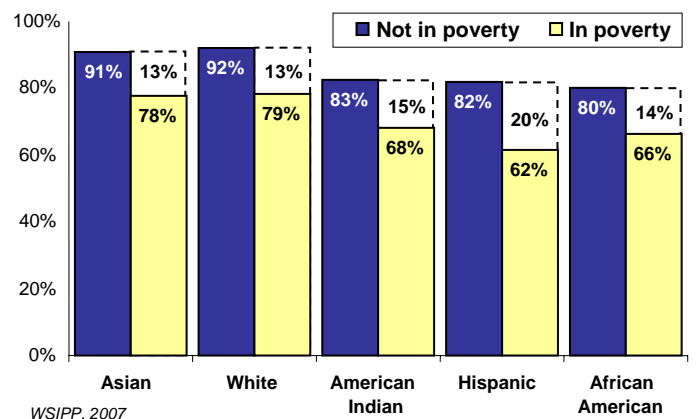

Legend: Not in poverty, In poverty

Dashed lines represent the gap in met-standard rates between students who are in and not in poverty

Asian: Not in poverty 63%, In poverty 41%, gap 22%
White: Not in poverty 58%, In poverty 33%, gap 25%
American Indian: Not in poverty 37%, In poverty 20%, gap 17%
Hispanic: Not in poverty 38%, In poverty 17%, gap 21%
African American: Not in poverty 29%, In poverty 16%, gap 13%

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Exhibit 3
Percentage of Students Who Met Standard in *Reading* by Race/Ethnicity and Poverty in Spring 2006

Legend: Not in poverty, In poverty

Asian: Not in poverty 91%, In poverty 78%, gap 13%
White: Not in poverty 92%, In poverty 79%, gap 13%
American Indian: Not in poverty 83%, In poverty 68%, gap 15%
Hispanic: Not in poverty 82%, In poverty 62%, gap 20%
African American: Not in poverty 80%, In poverty 66%, gap 14%

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WRITING PERFORMANCE BY RACE/ETHNICITY AND POVERTY

As shown in **Exhibit 4**, writing performance on the spring 2006 WASL is similar to performance in reading. For each category of students, met-standard rates in writing fell within ±3 percentage points of the corresponding rates for reading. Approximately 90 percent of Asian and White students who are not in poverty and 80 percent of American Indian, Hispanic, and African American students who are not in poverty met standard in writing.

By comparison, met-standard rates among students in poverty ranged from 79 percent of Asian students to 59 percent of Hispanic students. Again, these percentages largely mirror those for reading.[5]

MATH PERFORMANCE BY RACE/ETHNICITY AND POVERTY

Finally, **Exhibit 5** displays met-standard rates in math by race/ethnicity and poverty. These results demonstrate that the overall met-standard rates depicted in Exhibit 2 were largely driven by student performance in math.

Fewer than half of students in poverty met standard in math on the spring 2006 WASL, although the rates varied widely by race/ethnicity: nearly half of Asian students in poverty (48 percent) met standard in math compared with 19 percent of African American students in poverty. Even among students who are *not* in poverty, fewer than half of non-Asian minorities—45 percent of American Indian students, 43 percent of Hispanic students, and 33 percent of African American students—met standard in math.

Exhibit 4
Percentage of Students Who Met Standard in *Writing* by Race/Ethnicity and Poverty in Spring 2006
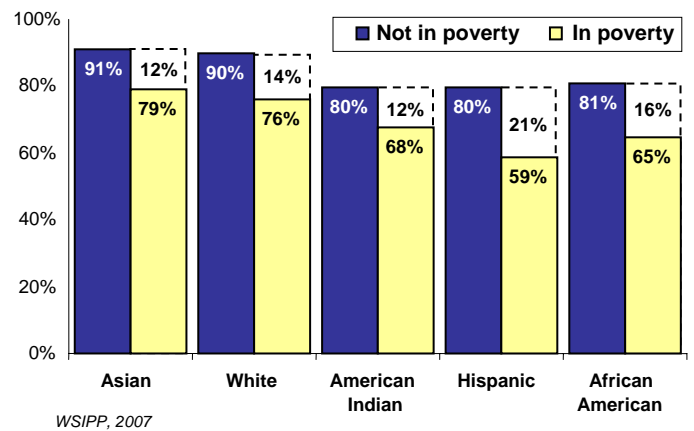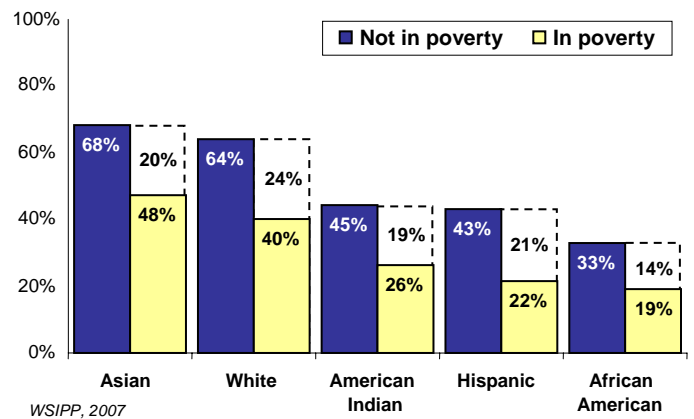

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Exhibit 5
Percentage of Students Who Met Standard in *Math* by Race/Ethnicity and Poverty in Spring 2006

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[5] For the reading and writing assessments, the performance gap by poverty status is largest for Hispanic students. Subsequent analyses revealed that a disproportionate percentage of Hispanic students in poverty are non-English language speakers, and Hispanic students whose primary language is not English met standard on the WASL at substantially lower rates compared with English-language speakers.

## RELATIVE ASSOCIATION OF RACE/ETHNICITY AND POVERTY

The foregoing analysis investigated how race/ethnicity and poverty in *combination* are associated with WASL results, but it did not address their *relative* associations with met-standard rates. **Exhibit 6** presents a statistical yardstick for assessing the net association of minority status (Asian and non-Asian) and poverty on WASL performance. On the chart, longer bars indicate a stronger relative association. The magnitude of association is interpretable only in relative terms, not in any absolute sense.[6]

Comparing poverty and minority status: Poverty and non-Asian minority status are negatively associated with WASL performance, whereas Asian minority status is positively associated with WASL performance. For reading and writing, the analysis suggests that poverty is much more strongly associated with met-standard rates than is either Asian or non-Asian minority status. Conversely, with respect to meeting standard in math—and also, by extension, to meeting standard overall—the relative associations of non-Asian minority status and poverty with WASL performance are roughly equivalent.

Comparing Asian and non-Asian minority status: For writing, the associations of Asian and non-Asian minority status with WASL performance are approximately equal in magnitude but in opposite directions. The associations for reading, math, and the WASL overall are also in opposite directions, but the relationship between Asian minority status and met-standard rates is much weaker than the relationship between non-Asian minority status and met-standard rates.

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[6] Exhibit 6 plots standardized logistic regression parameter estimates (multiplied by 100) for the effect of poverty and minority status on WASL met-standard rates. Although not reported here, the analysis from which these estimates were obtained also controlled for gender, non-English language use, disability status, and parents' educational attainment. The complete set of findings will be presented in a forthcoming report that describes the relative influence of various student characteristics on WASL met-standard rates.
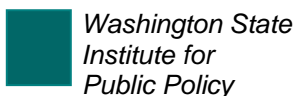
Exhibit 6
Relative Association of Race/Ethnicity and Poverty With WASL Performance
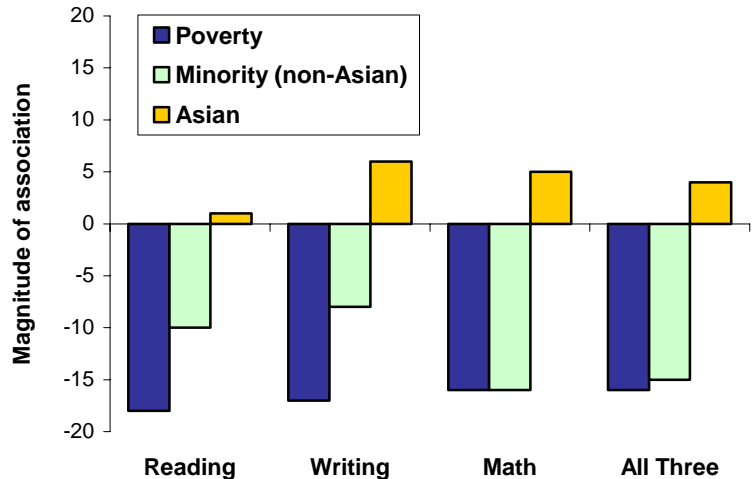
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