

Summer 2006 Promoting Academic Success Program: Influence on WASL Retake Scores—Revised

The 2006 Washington State Legislature created the Promoting Academic Success (PAS) program to provide remediation for 10th-grade students who do not meet standard in one or more content areas of the Washington Assessment of Student Learning (WASL). The Legislature allocated \$28.5 million in PAS funds for fiscal year 2007 to provide extended student learning activities and teacher professional development.¹

Funds were distributed to school districts to provide programs in summer 2006 and during the 2006–07 school year.²

The 2006 Legislature directed the Washington State Institute for Public Policy (Institute) to evaluate the effectiveness of PAS remedial programs in helping students meet standard on the WASL.³ The study goals are to determine the:

- overall effectiveness of PAS;
- relative effectiveness of different remedial strategies; and
- relative effectiveness disaggregated by student characteristics.

This report examines the overall effectiveness of summer 2006 PAS programs to help students meet standard on the WASL in August 2006. Effectiveness is defined as the difference in met-standard rates on the August WASL for students who did and did not participate in summer 2006 PAS.

Subsequent reports will focus on the relative effectiveness of different summer school strategies and the effectiveness of school-year PAS programs.

¹ ESSB 6386 § 515 (1), Chapter 372, Laws of 2006, supplemental operating budget.

² The distribution of funds between summer school and school year programs will not be known until the end of the 2006-07 school year.

³ ESSB 6386, § 607 (11), Chapter 372, Laws of 2006, supplemental operating budget.

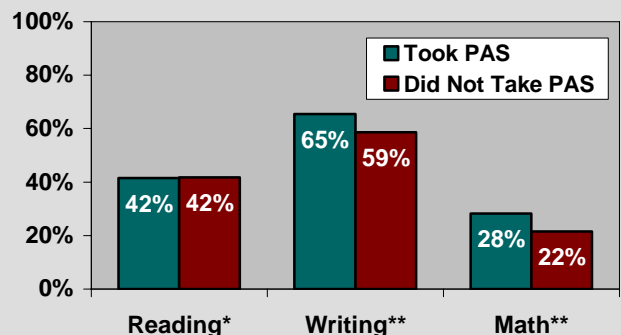
SUMMARY

This report examines the overall effectiveness of summer 2006 PAS programs in helping students to meet standard on the WASL in August 2006.

The findings are as follows:

- 13.9 percent of the 10th-grade students who did not meet standard on the WASL in spring 2006 participated in a summer 2006 PAS program.
- 71.1 percent of the students who participated in PAS in summer 2006, and 20.2 percent of students who did not participate, retook the WASL in August 2006.
- Compared with students who did not participate in a summer 2006 PAS program, participants did better in writing and math but not reading.
- Students who did not meet standard in August 2006 may still participate in PAS programs during the 2006-07 school year.

Percentage of Students Who Met Standard on the August 2006 WASL Retake



* Not a statistically significant difference

** Significant at $p < .01$

This report contains four sections:

- **Summer 2006 PAS Participation**
- **August 2006 WASL Retake Rates**
- **PAS and Non-PAS Student Comparability**
- **August 2006 WASL Retake Results**

Appendix A (at the end of this report) provides summary data for participation in summer 2006 PAS programs and WASL retakes in August 2006.

Summer 2006 PAS Participation

Of the 37,661 10th-grade students who did not meet standard on the spring 2006 WASL, 13.9 percent—5,217 students—participated in a summer 2006 PAS program.

Exhibit 1 shows the percentage of students who did not meet standard on the spring 2006 WASL and who subsequently participated in summer PAS by subject area and level of WASL performance.⁴ For example, 5.9 percent of students who received Level 1 reading scores on the spring 2006 WASL participated in a summer 2006 PAS reading program.

Exhibit 1
Percentage Participating in Summer 2006 PAS, by Level of Spring 2006 WASL Performance*

Spring 2006 Level	Reading	Writing	Math
Level 1	5.9%	6.9%	10.5%
Level 2	9.9%	9.6%	15.2%
Total	8.8%	9.0%	13.1%

* 212 WASL student records are excluded because of a missing statewide student identification number, and 173 PAS student records are excluded because of a missing statewide student identification number.

August 2006 WASL Retake Rates

Of the 37,661 10th graders who did not meet standard on the spring 2006 WASL, 27.3 percent—10,267 students—retook the WASL in August 2006.

Of the 5,217 students who participated in summer 2006 PAS, 71.1 percent retook the WASL in August 2006. In comparison, 20.2 percent of students who did not participate in PAS retook the WASL in August 2006.

Exhibit 2 displays the percentage of students who did not meet standard on the spring 2006 WASL and who retook it in August 2006 by subject area and level.

In all cases, students who participated in summer 2006 PAS had much higher August retake rates compared with non-participants.

For example, 47.2 percent of the Level 1 students in a summer PAS reading program retook the reading WASL in August compared with 7.0 percent of Level 1 reading students who did not participate in a summer PAS reading program.

Exhibit 2
August 2006 WASL Retakes as a Percentage of Students Not Meeting Standard in Spring 2006

Subject Area and Spring 2006 Level	August Retake Rates	
	PAS participants	Non-participants
Reading		
Level 1	47.2%	7.0%
Level 2	61.9%	17.2%
Total	59.3%	14.4%
Writing		
Level 1	45.1%	6.8%
Level 2	60.8%	18.6%
Total	58.2%	15.9%
Math		
Level 1	61.0%	12.1%
Level 2	76.2%	28.3%
Total	70.8%	20.8%

⁴ Students meet standard in reading and math on the WASL when they achieve a score of 400 or greater. Students meet standard in writing when they receive at least 17 points. Below-standard scores have two levels: Level 2 scores range between 375 and 399 points for reading and math, and between 13 and 16 points for writing. Level 1 scores fall below these thresholds.

PAS and Non-PAS Student Comparability

The ideal method for evaluating the effectiveness of PAS is to assign some students randomly to a PAS program, to withhold PAS for another random sample of students, and then to retest both groups of students. Using this design, the only systematic difference between the two groups would be participation in PAS.

Since this design is not possible, the research task is to identify a comparison group that is similar to the PAS group. This study's comparison group consists of students who retook the August 2006 WASL but who did not participate in PAS.

Exhibit 3 displays the number of students who retook the WASL in August 2006 by subject area. For example, 532 students who participated in PAS retook the reading WASL in August whereas 1,333 students retook the reading WASL without participating in PAS. We next examine the similarity of participants and non-participants.

Exhibit 3
Number of Students Who Retook the WASL in August 2006

Spring 2006 WASL Areas	August Retake Counts	
	PAS participants	Non-participants
Reading	532	1,333
Writing	602	1,655
Math	2,986	5,817

To compare PAS participants and non-participants, we examined student characteristics from the Office of Superintendent of Public Instruction's Core Student Record System and student survey responses from the 9th-grade Iowa Test of Educational Development (ITED). These characteristics include gender, ethnicity, free and reduced lunch eligibility, English language learner status, enrollment in special education, and other characteristics. (The technical appendix displays the percentage distribution of these characteristics for PAS and non-PAS students; see document number 06-12-2202A.)

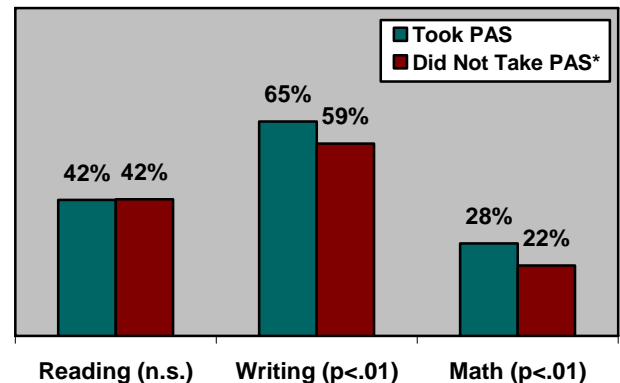
Multivariate logistic regression analyses were used to quantify the comparability of the two groups. Based on these statistical analyses, the characteristics of PAS and non-PAS students were found to be quite similar.⁵ That is, non-PAS students who retook the WASL in August are a valid comparison group for the PAS students.

August 2006 WASL Retake Results

Exhibit 4 presents met-standard rates for students who did and did not participate in summer 2006 PAS. The met-standard rates for students who did not participate in PAS were adjusted for any differences in student characteristics, however small, using the results of multivariate logistic regression analyses.⁶

In both writing and math, students who participated in PAS had higher met-standard rates, and these differences are statistically significant (i.e., not due to chance variation). Conversely, the met-standard rate for reading PAS participants was equivalent to the rate for non-PAS participants.

Exhibit 4
Percentage of Students Who Met Standard on the August 2006 WASL Retake



* Met-standard rates for students not participating in PAS are adjusted using multivariate logistic regression.

⁵ One measure of the overall similarity between PAS and non-PAS students is a statistic from the logistic regression analysis called the Area Under the Receiver Operating Characteristic (AUC). The AUC can vary between .500 and 1.00. AUCs in the .500s indicate little to no difference between the two groups, .600s signify weak differences, .700s imply moderate differences, and .800s or above suggest strong differences. With the exception of Level 1 writing students, all AUCs are under .700, which indicates that student characteristics only weakly distinguish PAS participants from non-participants.

⁶ The technical appendix includes details of these analyses.

Exhibit 5 presents met-standard rates on the August 2006 WASL retake by spring 2006 assessment levels. Across all subject areas, Level 2 students did better than Level 1 students. Level 2 math students had the greatest difference in met-standard rates when comparing PAS and non-PAS students (+ 8.2 percentage points).

Exhibit 6 shows the average change in WASL scores between the spring WASL and August retake for students who did and did not participate in summer 2006 PAS. For example, Level 1 students who participated in PAS had a 12.2-point increase in their reading score compared with a 9.4-point increase for non-PAS reading students.

The gains made by PAS participants reported in Exhibit 6 are relatively modest when one considers that reading scores range from 225 to 525 points and math scores vary between 200 and 575 points. For example, PAS participants improved by only 1.3 points relative to non-participants on a 300-point reading scale. The writing scale uses a different metric, ranging from 0 to 24 points; consequently, smaller increases (or, in the case of Level 1 writing scores, decreases) are more meaningful.

Exhibit 5
Met-Standard Rates on the August 2006 WASL Retake

Subject Area and Spring 2006 Level	Met-Standard Rates		
	PAS participants	Non-participants*	Difference
Reading	41.5%	41.7%	-0.2%
Level 1	12.0%	15.1%	-3.1%
Level 2	46.4%	46.7%	-0.3%
Writing	65.4%	58.6%	+6.9%
Level 1	24.1%	30.7%	-6.7%
Level 2	71.7%	63.9%	+7.8%
Math	28.2%	21.5%	+6.7%
Level 1	4.0%	2.6%	+1.4%
Level 2	39.1%	30.8%	+8.2%

*Students not participating in PAS are adjusted by results from multivariate logistic regression.

Exhibit 6
Change in WASL Scores Between Spring 2006 WASL and August 2006 Retake

Subject Area and Spring 2006 Levels	Change in Scores		
	PAS participants	Non-participants*	Difference
Reading	9.0	7.7	+1.3
Level 1	12.2	9.4	+2.8
Level 2	8.4	7.3	+1.1
Writing	3.2	2.5	+0.7
Level 1	3.8	3.9	-0.1
Level 2	3.1	2.3	+0.8
Math	8.8	4.4	+4.4
Level 1	10.8	6.6	+4.2
Level 2	7.9	3.2	+4.7

*Change scores for students not participating in PAS are adjusted using multivariate regression.

The summer 2006 PAS programs were relatively short in duration (approximately 4 or 5 weeks of summer school). Students who participate in PAS programs during the school year may achieve greater WASL score gains relative to summer PAS participants because school-year programs are offered over a longer period of time.

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*Washington State
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The Washington State Legislature created the Washington State Institute for Public Policy in 1983. A Board of Directors—representing the legislature, the governor, and public universities—governs the Institute and guides the development of all activities. The Institute's mission is to carry out practical research, at legislative direction, on issues of importance to Washington State.

Appendix A
Summary Data: Participation in PAS and August 2006 WASL Retakes

		Reading	Writing	Math
All Students	Students Who Did Not Meet Standard in Spring 2006			
	Total	10,137	11,447	32,144
	Level 1	2,689	2,529	14,391
	Level 2	7,448	8,918	17,753
Summer 2006 PAS Students	Students Who Participated in PAS in Summer 2006			
	Total	897	1,035	4,218
	Level 1	159	175	1,511
	Level 2	738	860	2,707
	PAS Students Who Retook the WASL in August 2006			
	Total	532	602	2,986
	Level 1	75	79	922
	Level 2	457	523	2,064
	PAS Students Who Met Standard on the WASL in August 2006			
	Total	221	394	843
	Level 1	9	19	37
	Level 2	212	375	806
	Non-PAS Students	Non-PAS Students Who Retook the WASL in August 2006		
Total		1,333	1,655	5,817
Level 1		176	159	1,557
Level 2		1,157	1,496	4,260
Non-PAS Students Who Met Standard on the WASL in August 2006				
Total		586	1,032	1,412
Level 1		19	41	43
Level 2		567	991	1,369