



**Office of Research and Development**  
*Department of Research, Evaluation and Assessment*

# **Advanced Placement (AP) Program Final Report**

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*Written by Teresa Fitzgerald  
Assistance from Katherine Seiden Drake and Tom Watkins*

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## ***Introduction***

The Advanced Placement (AP) program provides students with the opportunity to take college-level courses while still in high school and earn college credit, advanced placement in college, or both. Participating students can choose from thirty-five exams across 20 subject areas administered in May of each year. The AP exams consist of two sections: multiple choice and free response. The AP exams are scored on a five-point scale, '5' being a perfect score. Students receiving a score of three or better 'pass' and receive credit toward their undergraduate degree<sup>1</sup>.

Students participating in the AP program have the opportunity to study a particular subject in greater depth. This experience may help students determine an educational path they wish to pursue. Once a student enrolls in the AP program, they work with the AP coordinator in their school. The benefits of taking part in the AP Program are many. Students will get a head start on their college coursework, improve writing and problem-solving skills, and develop study habits necessary for demanding college-level work. Students who participate in the AP program tend to stand out in the college admissions process by demonstrating their readiness for college, willingness to work hard and show a commitment to academics.

The purpose of the AP program is to assess the impact on the educational opportunity available to Saint Paul Public School (SPPS) students. The test score data came from the College Entrance Examination Board (CEEB), and demographic information came from SPPS data files. The population of this report comes from SPPS students who have participated in the Advanced Placement test administration during the 2004-2005 school year.

## ***District-Wide Participation***

Over the past 11 years (from 1994 to 2005), an increasing number of SPPS students have been taking and passing AP exams (see Table 1 for results from 2001 to 2005), and each year more SPPS high school students are receiving college credit through this program.

**Table 1: SPPS Advanced Placement Testing Patterns**

	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
No. of students tested	510	614	627	654	645
No. of AP exams taken	843	1016	1062	1249	1254
No. of exams passed	323	421	427	519	526
Percent passing	38%	41%	40%	42%	42%

### **Since 2001, the number of:**

- AP students tested in SPPS high schools has increased 26%.
- Exams taken has increased 49%.
- Exams passed has increased 63%.
- The percentage of students passing AP exams has increased 4%.

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<sup>1</sup> The amount of credit received varies by institute, exam taken and exam score received. For example, the University of Minnesota awards four credits for a score of three or four on the Calculus AB exam and 12 credits for a score of five on the Calculus BC exam. For the sake of simplicity, scores of three or more are reported here as a "passing" score.

## ***Race/Ethnicity***

Table 2 compares the ethnic composition of SPPS AP students from 2001 to 2005. The ethnic group representation among AP test takers somewhat parallels the district composition.

**Table 2: Number of AP Students Tested by Ethnic Composition**

	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
	<b><u>N</u></b>	<b><u>N</u></b>	<b><u>N</u></b>	<b><u>N</u></b>	<b><u>N</u></b>
Caucasian	296	329	308	338	333
Asian American	140	189	195	200	194
African American	28	39	51	35	40
American Indian	0	1	4	3	5
Hispanic	22	17	30	36	30
Other/ Not Stated	24	39	39	42	43
<b>Total</b>	<b>510</b>	<b>614</b>	<b>627</b>	<b>654</b>	<b>645</b>

The number of students tested by ethnic composition changed slightly (<3% decline among Asian American students) from 2004 to 2005. The number of African American and Hispanic students taking the AP exams is disproportionately low, while the majority of students taking the AP exams were Caucasian and Asian American.

Table 3 illustrates the percent of AP exams passed within each ethnic group.

**Table 3: Percent of AP Examinations Passed Within Ethnic Composition**

	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Caucasian	47%	50%	55%	55%	58%
Asian American	25%	28%	19%	23%	15%
African American	33%	18%	10%	20%	17%
Hispanic	17%	48%	43%	54%	42%
Other/ Not Stated	28%	43%	44%	25%	46%

\*Results are not reports for American Indian students because of cell size limitations.

The actual percent of students passing has declined since 2001 for a few racial/ethnic groups. From 2001 to the present, there has been a 10% decline in the percent of exams passed within Asian American students and a 16% decrease within African American students. On the other hand, within the Caucasian student group, there has been an 11% increase in the percent of exams passed and a 25% increase within Hispanic students; although, this has fluctuated in the past five years.

Table 4 compares the number of AP exams passed by ethnic group as a percent of the total number of exams passed.

Due to the increased overall numbers, the actual percent of students passing has declined somewhat over the years for most ethnic groups (in Table 4). Although the passing rate has declined (from 2004 to 2005), the number of students receiving college credit has increased from 2001.

**Table 4: Number and Percent of AP Exams Passed by Ethnic Composition**

	2001		2002		2003		2004		2005	
	N	%	N	%	N	%	N	%	N	%
Caucasian	237	73%	284	67%	311	73%	373	72%	403	77%
Asian American	57	18%	83	20%	59	14%	82	16%	54	10%
African American	13	4%	11	3%	7	2%	11	2%	12	2%
American Indian	0	0%	0	0%	2	<1%	4	1%	3	<1%
Hispanic	5	<1%	16	4%	23	5%	31	6%	22	4%
Other/Not stated	11	3%	27	6%	25	6%	18	3%	32	6%
<b>Total*</b>	<b>323</b>		<b>421</b>		<b>427</b>		<b>519</b>		<b>526</b>	

The number of AP exams passed by Caucasian students has steadily increased from 237 in 2001 to 403 in 2005, an increase of 4%. In 2005, 77% of all exams with passing scores were completed by Caucasian students, 10% by Asian American students, 2% by African American students, and 4% by Hispanic students. Still, very few American Indian students are taking and passing AP exams.

### **Lunch Subsidy Status**

Table 5 illustrates the number of students receiving free or reduced-price lunch and students who do not receive free or reduced-price lunch by the number of students tested, exams taken, exams passed, and percent of exams passed by lunch subsidy status.

**Table 5: Advanced Placement Testing Patterns by Lunch Status**

	2001		2002		2003		2004		2005	
	FRL	Not FRL	FRL	Not FRL	FRL	Not FRL	FRL	Not FRL	FRL	Not FRL
<i>Number of students tested</i>	307	203	266	348	280	347	293	361	283	362
<i>Number of AP exams taken</i>	517	326	388	628	415	647	503	746	475	779
<i>Number of exams passed</i>	134	189	88	333	53	374	121	398	84	442
<i>Percent passing</i>	26%	58%	23%	53%	13%	58%	24%	53%	18%	57%

FRL=Receives Free/Reduced-Price Lunch

Not FRL=Does not receive Free/Reduced-Price Lunch

The following are results for students who receive free or reduced-priced lunch, from 2001 to 2005:

- The *number of students tested* declined from 307 students to 283 students.
- The *number of AP exams taken* decreased from 517 to 475 students.
- The *number of exams passed* decreased from 134 to 84 exams.
- The percent of exams passed declined from 26% to 18% in 2005; a decrease of 12-points in the past five years.

The following results are for students who do not receive free or reduced-price lunch, from 2001 to 2005:

- The *number of students tested* increased 78% from 203 students to 362 students in 2005.
- The *number of AP exams taken* more than doubled from 326 to 779 exams in 2005.
- The *number of exams passed* more than doubled from 189 to 442 exams in 2005.
- The *percent of exams passed* declined 1-point from 58% to 57% in 2005.

From 2001 to 2005, the gap between low-income students and not low-income students in percent passing has widened 7-points from a gap of 32% in 2001 to a gap of 39% in 2005.

## Gender

Table 6 compares the gender composition of SPPS AP students from 2001 to 2005.

**Table 6: Number and Percent of AP Examinations Passed by Gender Composition: 2001 to 2005**

	2001		2002		2003		2004		2005	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
Number of students tested	231	279	258	356	277	350	289	365	262	383
Number of AP exams taken	382	461	422	594	457	605	547	702	544	710
Number of exams passed	164	159	199	222	178	249	237	282	262	264
Percent passing	43	35	47	37	39	41	43	40	48	37

In 2005, there were more females taking AP exams than males (383 vs. 262). The percentage of passed exams completed by male participants was 11% greater than that of females (48% vs. 37%). When comparing 2004 to 2005, the percentage of males passing AP exams declined 5% and the percent of females passing AP exams declined 3%.

## Results in Each Subject Area

Table 7 shows the AP testing patterns of SPPS students by test subject in the *number of exams taken*.

**Table 7: Number of AP Exams Taken by SPPS Students**

AP Exams	Number of AP Exams Taken				
	2001	2002	2003	2004	2005
Math	168	176	193	243	190
English	146	231	211	314	360
Science	201	188	218	258	276
History/Social Science	305	392	383	401	379
Other Subjects	23	29	57	62	49
<b>Total =</b>	<b>843</b>	<b>1016</b>	<b>1062</b>	<b>1278</b>	<b>1254</b>

Since 2001, the greatest increases have been in English (from 149 to 379) and "other" subjects (from 23 to 49) in the number of AP exams taken by SPPS students. Math, science, history/social science did not see as much growth in the number of students taking these exams.

Table 8 compares the *number of AP exams passed* by SPPS students.

**Table 8: Number of AP Examinations Passed by SPPS Students**

AP Exams	Number of Exams Passed				
	2001	2002	2003	2004	2005
Math	102	106	107	127	112
English	24	60	66	99	120
Science	82	101	92	95	117
History/Social Science	105	138	133	159	149
Other Subjects	10	16	34	39	28
<b>Total =</b>	<b>323</b>	<b>421</b>	<b>432</b>	<b>519</b>	<b>526</b>

The greatest increase was in the number of exams passed in English from 24 to 120. The number of exams passed dipped slightly for math, history/social science, and “other” subjects.

In Table 9, you will find the comparisons of SPPS students in *percent passing* by subject area.

**Table 9: Percent of SPPS Students Passing AP Examinations**

AP Exams	Percent Passing				
	2001	2002	2003	2004	2005
Math	61%	60%	55%	60%	59%
English	16%	26%	31%	31%	33%
Science	41%	54%	42%	37%	42%
History/Social Science	34%	35%	35%	40%	39%
Other Subjects	43%	55%	60%	62%	57%

English had the highest increase since 2001 in percent passing from 16% to 33% in 2005; a 17% difference. The second highest increase was in “other” subjects from 43% to 57% in 2005—this resulted in a 14% increase from 2001, however, there was a 5% decline from 2004.

In 2005, the highest percent of exams passed were in math at 59% and “other” subjects at 57%. The exams with the largest numbers of students participating also had the lowest passing percentages in 2005. Overall, more students are taking a wider array of AP exams, and a growing number of students are attaining scores high enough to receive college credit.

Table 10 (*next page*) compares the mean scores by subject for SPPS students with the mean scores of state test-takers. The state data reflect totals for public school students.

**Table 10: Comparison of Mean Scores by AP Subject for SPPS and National Test-Takers**

Subject	SPPS 2005 (N)	Mean Score		
		State 2005	SPPS 2005	SPPS 2004
Biology	94	3.27	2.38	2.51
Calculus AB	123	3.06	2.80	<b>3.01</b>
Calculus BC	34	3.10	4.00	<b>3.81</b>
Chemistry	63	3.63	2.00	2.54
Economics: Macro	7	2.63	3.14	<b>3.00</b>
Economics: Micro	8	3.53	<b>3.50</b>	2.67
English Language & Comp.	145	3.00	2.21	2.26
English Literature	215	3.06	1.96	2.08
Environmental Science	26	2.99	2.77	2.40
European History	85	2.81	2.11	2.39
French: Language	7	3.16	2.29	2.15
Gov. Politics: U.S.	69	3.43	<b>3.20</b>	<b>3.09</b>
Human Geography	47	3.17	2.13	1.68
Physics B	49	3.00	2.18	1.70
Physics C: Elec. & Mag.	22	2.73	2.68	2.15
Physics C: Mech.	22	3.06	2.95	2.88
Psychology	30	3.33	1.60	1.91
Spanish: Language	27	2.83	2.70	<b>3.35</b>
Statistics	33	3.01	2.94	2.55
U. S. History	133	2.84	2.06	1.89

Notes: Cells with fewer than five students were not included in the analysis  
**Bold:** SPPS students scored 3.0 or better in 2004 and 2005.  
 : SPPS students scored better than state comparisons in 2005.

There were several subject areas where SPPS students did not test (and are not shown): Computer Science, Latin, French Literature, Government Politics: Comp, International English Language, and World History.

The AP exams that SPPS students passed in 2005 with a mean score of 3.0 or higher include the following: Calculus BC, Macro and Micro Economics, and U. S. Government Politics. In 2005, SPPS students scored higher when compared to the state (3.0 or better) in Calculus BC and Macro Economics.

### Summary of Findings

The participation rate of SPPS students taking AP exams remained fairly constant from 2004 to 2005. In 2005:

- 645 SPPS students took 1,254 exams, passing 526 (or 42%) of them.
- 58% of all AP exams taken by Caucasian students achieved passing scores, followed by 42% of Hispanic Americans' exams, 17% of African Americans' exams, and 15% of Asian Americans' exams.
- 18% of exams completed by students qualifying for free or reduced-price lunch scored at the passing level, compared to 57% of exams by students not qualifying for the lunch subsidy.
- A higher percentage of male students' exams earned a passing score than female students' exams (48% vs. 37%).
- More AP exams were taken by SPPS students in history/social sciences (379 students) than in any other subject; English exams came in at a close second (360 students), and exams in "other subjects" (e.g., languages, art) were the least popular (49 students). However, the highest

passing rates were found in math and in these other subjects; the exams with the largest numbers of students participating also had the lowest passing percentages in 2005.

- The two subject areas where SPPS students exceeded Minnesota's state mean scores were in Calculus BC and Macro Economics. In addition, SPPS students produced average scores of 3.0 or greater in Micro Economics and U.S. Government Politics.
- The numbers of students tested, AP exams taken, and AP exams passed increased steadily from 2001 to 2004 and then leveled off or dipped slightly in 2005. The percent of exams passed fluctuated somewhat since 2001 but has stayed in the low 40% range over the last several years.

## ***Conclusion***

Although the number of students tested has slightly dipped from last year, SPPS AP students are taking more exams. There has been a slow progression of students of color and low-income students taking and passing the AP exams. Moreover, the number of students tested among non-low income students has also leveled off this year. For under-served students to succeed in the AP program, SPPS teachers, school staff, administrators, and parents need to become increasingly involved in encouraging these student groups to participate in the AP program. In addition, we must also provide students with the necessary skills and tools so they can thrive in their schoolwork and in the AP program.

## ***Educational Implications***

Many groups of students in SPPS continue to be under-represented in terms of AP exam participation. Strategies must be put in place in order to ensure that these students are enrolled in honors courses early on in their educational careers and then likewise afforded the same opportunities for earning college credit as their more privileged counterparts.