

ADVANCED PLACEMENT RESULTS, 2013-14

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Introduction

One method of delivering college-level coursework to high school students is through the Advanced Placement (AP) program. Many colleges and universities provide credit to students who earn a qualifying score on any of the 36 available AP exams¹ offered by the College Board. All comprehensive high schools, except early colleges, in the Wake County Public School System (WCPSS) offer AP courses and exams, although the availability of specific courses varies from school to school. Many students take more than one AP course, but not all AP students take the corresponding exams, administered once per year in the spring. The cost to take each AP exam is currently \$91 with fee reductions for students with financial need, although through federal grant funding, AP exams will be free in 2014-15 for students enrolled in AP courses in North Carolina.

Advanced Placement that is awarded based on exam scores allows a student to skip introductory college classes, enter higher-level classes, and/or fulfill general education requirements. Placement is not the same as credit, which refers to satisfying graduation requirements towards a college degree. Colleges may offer both credit and placement, credit only, or placement only for qualifying AP scores (College Board, AP Students, 2015).

AP scores are reported on a 5-point scale as follows:

- 5 = Extremely well qualified
- 4 = Well qualified
- 3 = Qualified
- 2 = Possibly qualified
- 1 = No recommendation

As noted in this report, comparisons within the report and to previous years should be made with caution due to use of different student datasets and also to changes in collection and reporting of student ethnicity by US Department of Education.

Abstract

AP outcomes for WCPSS students have continued an upward trend for over 18 years, out-performing the state and the nation in all measures. In 2013-14 there were 13,757 exams taken by 6,955 WCPSS test-takers with almost 76% of the exams resulting in scores at or above 3, outperforming Guilford (53.0%), Mecklenburg (49.8%), NC (57.7%), and the U.S. (53.7%). The WCPSS overall exam average was 3.37, down by 0.3 points from 2012-13 but still higher than the state (2.84) and the nation (2.87). As in past years, top popular subjects remained the same, with Environmental Science, Psychology, English Language & Composition, US History, and Statistics having over 1,000 test-takers each. In addition, Human Geography almost tripled test-takers from 412 in 2012-13 to 1,149 in 2013-14, replacing Statistics in the top five. Minority students continue to be underrepresented in AP course enrollments. Schools can use these data to benchmark themselves against their peers and past performance. Schools need to intensify supports and systems to attract and encourage additional qualified students to enroll in rigorous AP coursework.

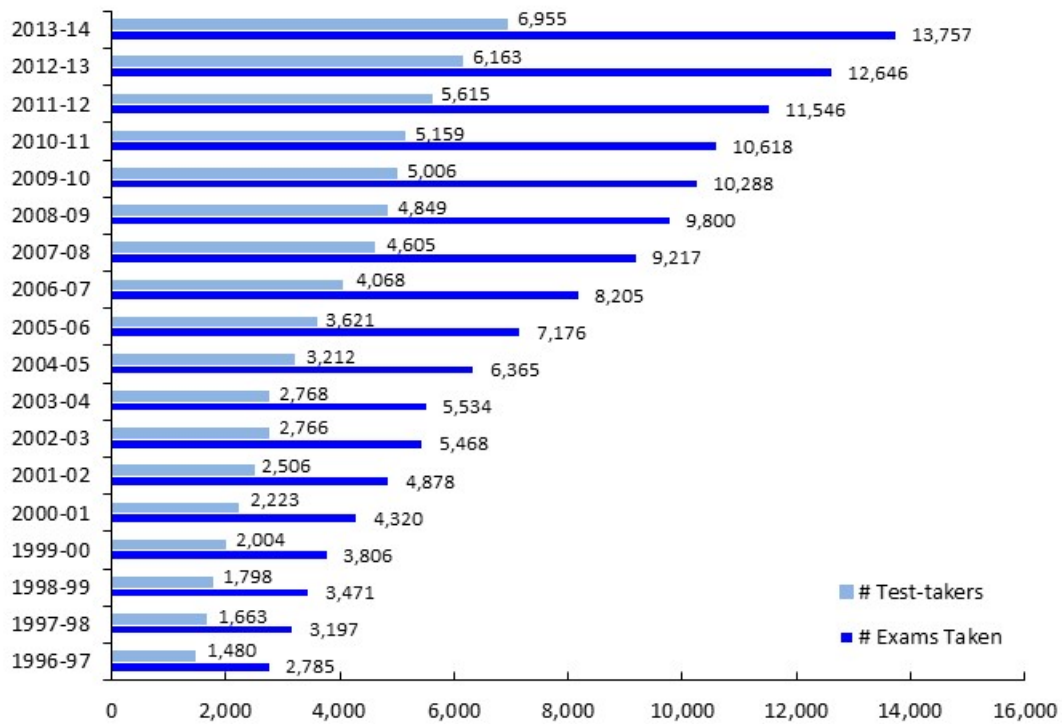
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AP Exam Performance and Courses

AP TEST-TAKERS AND EXAMS TAKEN

Since 1997, the number of students in WCPSS taking AP exams (1,480) increased by more than 400% (6,955), and the number of exams taken increased from 2,785 to 13,757. For the most recent year-over-year comparison of the number of test-takers, the district’s increase was nearly 13%, while the US increase was 6%. Likewise, the one-year percentage change for number of exams taken in WCPSS was almost a 9% increase compared to a 6% increase nationwide.¹

Figure 1
Total Number of AP Test-Takers and Exams Taken in WCPSS

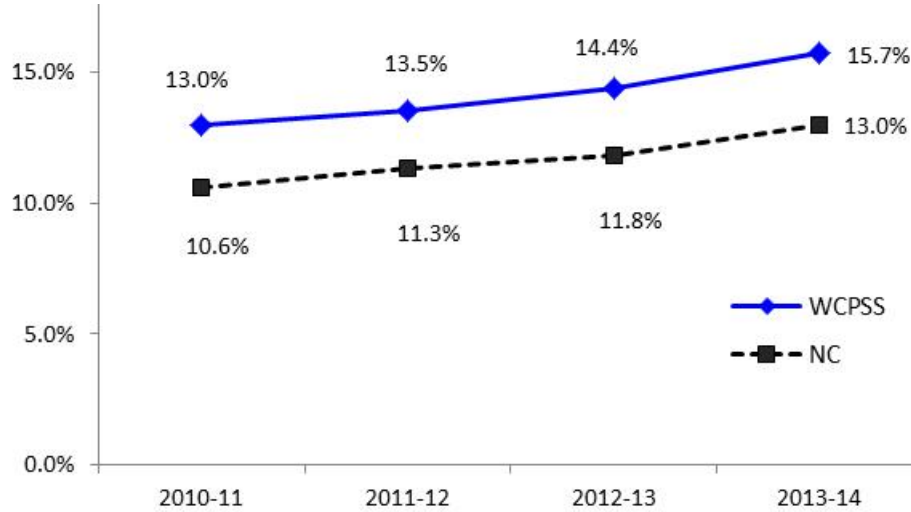


Data Source: College Board District Summary by Students Demographics (Report downloaded, 11-4-2014)

¹Downloaded from <http://research.collegeboard.org/programs/ap/data/participation/ap-2014>, National Summary.xlsx, Program Summary tab

In 1996-97, the 1,480 AP exam-takers in WCPSS represented 7% of the high school population. In 2013-14, the NC Department of Public Instruction reported the WCPSS AP participation rate as 15.7%, continuing a trend of being above the state average (13%; Figure 2).

Figure 2
Percent of HS Population* Taking an AP Exam



Note: *NC public school districts where students took an AP assessment. Participation Rate is number of AP test-takers divided by 4th-month ADM for grades 9-13 + Extended Day 9-13.

Data Source <http://www.ncpublicschools.org/docs/accountability/reporting/aptestresults14.xlsx> (retrieved March, 2015).

Among the 12 school districts in NC with more than 1,000 AP test-takers in 2013-14, AP test participation rates varied widely. In Chapel Hill-Carrboro, 43.1% of high school students took at least one AP test, while WCPSS at 15.7% ranked 9th among those 12 districts.

Table 1
AP Test Participation Rates: NC Districts with 1,000 or more Test Takers

	Chapel Hill Carrboro	Guilford	Mecklenburg	Union	Forsyth	Buncombe	Iredell-Statesville	Durham	WCPSS	Cabarrus	New Hanover	Cumberland
Number of Test-Takers	1,609	5,497	7,603	2,324	2,750	1,306	1,153	1,576	6,953	1,387	1,008	1,779
Participation Rate	43.1%	23.9%	19.2%	18.9%	17.5%	16.7%	16.5%	16.2%	15.7%	15.4%	13.5%	11.3%

Note: Test participation data may differ slightly depending on data source. Source for Table 1 was <http://www.ncpublicschools.org/docs/accountability/reporting/aptestresults14.xlsx> (retrieved March, 2015).

With respect to AP test performance, WCPSS students have consistently scored higher than state and national averages consistently for the past two decades (Tables 2 and 3). WCPSS students continue to have a higher percentage of passing exams than do their state and national peers. The percentage of exams with scores of 3 or higher consistently has been above 74% in the last 18 years. On the other hand, exam scores for the state and the nation have persisted in the low 60s to upper 50s, and North Carolina's percentage is at its lowest since 2005-06 (Figure 3).

Table 2
WCPSS Participation and Performance on AP Exams

Year	# Individuals Taking Exams*	Total # of Exams Taken*	% of Exams with Scores of 3 or Higher*	Average Exam Score**
1996-97	1,480	2,785	80.4%	3.42
1997-98	1,663	3,197	79.9%	3.44
1998-99	1,798	3,471	77.8%	3.41
1999-00	2,004	3,806	78.1%	3.38
2000-01	2,223	4,320	77.2%	3.38
2001-02	2,506	4,878	80.5%	3.48
2002-03	2,766	5,468	79.4%	3.42
2003-04	2,768	5,534	78.6%	3.46
2004-05	3,212	6,365	77.8%	3.40
2005-06	3,621	7,176	74.7%	3.30
2006-07	4,068	8,205	75.7%	3.35
2007-08	4,605	9,217	74.4%	3.30
2008-09	4,849	9,800	76.1%	3.36
2009-10	5,006	10,288	76.4%	3.39
2010-11	5,159	10,618	77.3%	3.41
2011-12	5,615	11,546	77.9%	3.45
2012-13	6,163	12,646	76.6%	3.40
2013-14	6,955	13,757	75.7%	3.37

Data: *College Board District Summary by Students Demographics (report downloaded 11-10-2014).

**College Board Current Year Score Summary – Aggregated for Districts (report downloaded 9-2-2014).

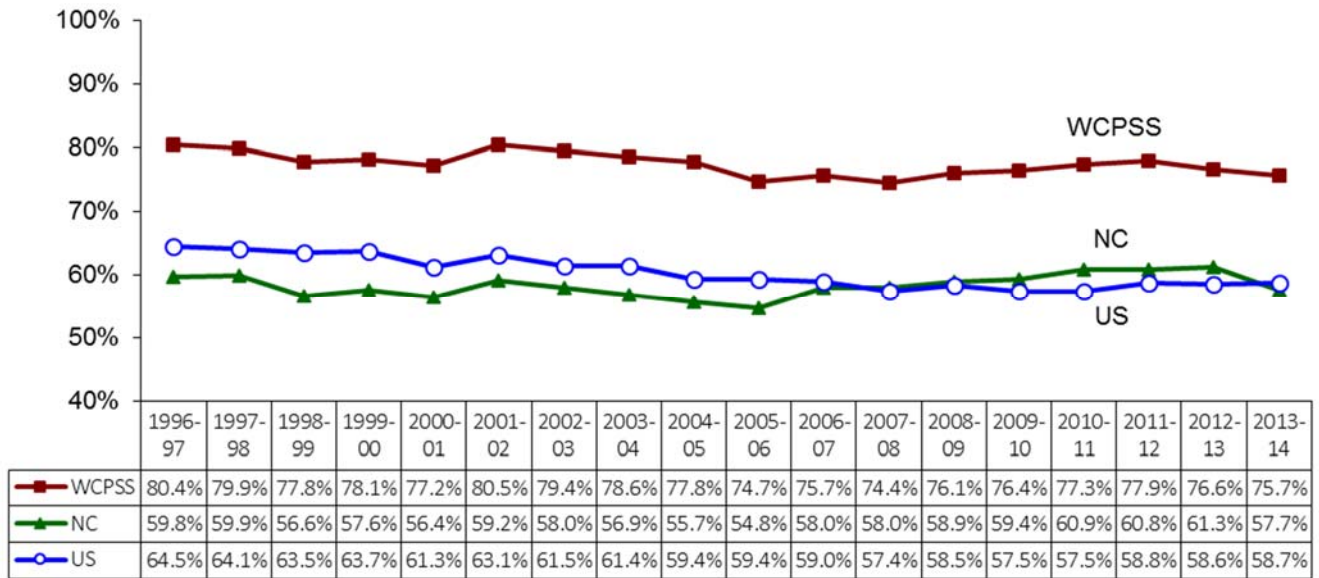
Table Interpretation Example: In 2013-14, a total of 13,757 AP exams were taken by 6,955 students. Almost 76% of those exams had a score of 3 or higher, and the average exam score for WCPSS was 3.37.

Table 3
Average AP Exam Scores for WCPSS, N.C., and the U.S.

Year	WCPSS	N.C.	U.S.
1996-97	3.42	2.87	3.02
1997-98	3.44	2.89	3.02
1998-99	3.41	2.81	3.02
1999-00	3.38	2.82	3.01
2000-01	3.38	2.81	2.95
2001-02	3.48	2.87	2.99
2002-03	3.42	2.83	2.95
2003-04	3.46	2.81	2.95
2004-05	3.40	2.78	2.89
2005-06	3.30	2.76	2.89
2006-07	3.35	2.84	2.88
2007-08	3.30	2.84	2.83
2008-09	3.36	2.88	2.88
2009-10	3.39	2.89	2.84
2010-11	3.41	2.94	2.84
2011-12	3.45	2.95	2.89
2012-13	3.40	2.93	2.87
2013-14	3.37	2.84	2.87

Notes: Data for N.C. and the U.S. include public and non-public schools' students.
 Data Source: N.C. and U.S. from <http://research.collegeboard.org/programs/ap/data/participation/ap-2014>
 And WCPSS from College Board Current Year Score Summary for Districts (report downloaded 9-2-2014)

Figure 3
Percentage of AP Exams with Scores of 3 or Higher in WCPSS, N.C., and U.S.



Notes: A score of 3 is passing, a possible college credit in some colleges. Comparison data for N.C. and U.S. include public and non-public schools' students.

Data Sources: N.C. and U.S. from College Board <http://research.collegeboard.org/programs/ap/data/participation/ap-2014>
 Retrieved March 2015. WCPSS: College Board Current Year Score Summary - Aggregated for Districts (report downloaded 9-2-2014)

Of the 12 school districts in NC with more than 1,000 AP test-takers, the five school districts with the highest percentage of exams with scores of 3 or higher were WCPSS (75.7%), Chapel Hill-Carrboro (74.5%), Union County (64.8%), Forsyth (63.8%), and New Hanover (62.3%). For districts with comparable numbers of test-takers to WCPSS, passing percentages were significantly lower (i.e., Guilford at 53.0%, Mecklenburg at 49.8%).

AP EXAMS TAKEN AND LEVEL OF PERFORMANCE, BY SUBJECT

Table 4 details selected subjects with total number of exams and percentages with scores of 3 or higher. Environmental Science, Psychology, English Language/Composition, and U.S. History continue the trend of exams most commonly taken by WCPSS students. Statistics test-takers surpassed 1,000 for the first time in 2012-13 and held steady in 2013-14. Human Geography exams spiked in 2013-14, soaring from 412 in 2012-13 to 1,149, surpassing Statistics in the top 5 of the most commonly taken exams.

In 2013-14, 11 of the 16 exams displayed in Table 4 showed a decrease in the percentage of scores 3 or higher over the previous year's results.

Table 4
WCPSS Total Number of AP Exams Taken and Percentage of Scores 3 or Higher by Subject, 1997-2014

AP Exam		1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
Biology	Total # Exams	254	185	211	248	227	238	206	135	188	250	260	315	348	349	483	519	548	593
	% 3 or Higher	76.8	81.6	75.4	72.6	73.1	85.7	75.7	83.0	81.9	82.4	77.7	67.6	73.9	72.2	75.2	75.1	82.3	82.1
Calculus AB	Total # Exams	349	404	354	374	336	418	499	188	198	229	269	313	277	268	219	221	208	267
	% 3 or Higher	77.4	85.9	84.5	86.6	83.9	92.6	89.6	66.5	69.2	59.0	68.4	73.5	66.4	55.6	62.6	71.0	66.8	65.2
Calculus BC	Total # Exams	77	117	150	152	192	202	226	526	532	555	672	604	702	833	814	942	912	911
	% 3 or Higher	93.5	93.2	81.3	90.1	95.3	89.1	84.5	89.7	87.2	90.5	84.7	86.6	91.0	89.7	81.8	84.8	83.9	87.7
Chemistry	Total # Exams	138	147	133	197	185	206	146	120	148	178	203	213	219	219	302	245	308	343
	% 3 or Higher	76.1	81.0	74.4	81.7	73.5	72.8	82.2	79.2	68.9	70.2	79.3	73.7	67.1	74.9	67.2	70.2	72.7	66.5
English Lang. & Comp.	Total # Exams	497	536	558	651	824	788	794	870	857	1,034	1,056	1,306	1,200	1,350	1,409	1,467	1,644	1,639
	% 3 or Higher	85.5	77.4	78.3	80.6	72.8	81.5	80.1	74.7	72.9	66.2	75.9	73.7	78.8	79.3	81.2	76.3	71.2	70.5
English Lit. & Comp.	Total # Exams	301	373	355	364	462	537	510	380	437	529	471	638	667	595	581	622	605	639
	% 3 or Higher	79.4	81.3	78.3	77.5	74.2	79.7	74.7	80.3	79.6	76.9	77.3	74.0	78.0	76.5	80.2	76.7	76.5	72.1
Environmental Science	Total # Exams	0	38	87	115	177	299	690	787	836	939	1,084	1,253	1,383	1,530	1,448	1,545	1,719	1,782
	% 3 or Higher	---	81.6	55.2	76.5	82.5	75.3	79.4	76.4	71.5	73.6	74.8	75.7	69.4	68.0	71.7	75.3	73.1	71.4
European History	Total # Exams	115	154	189	194	178	197	204	200	231	234	218	274	254	181	181	197	128	77
	% 3 or Higher	87.8	89.0	88.4	88.7	82.6	86.8	85.3	80.5	84.0	84.2	73.4	73.4	77.2	80.1	74.6	75.6	81.3	74.0
Govt. & Politics U.S.	Total # Exams	15	21	25	37	49	100	216	164	245	223	286	303	366	383	426	605	565	601
	% 3 or Higher	93.3	81.0	88.0	86.5	98.0	94.0	87.0	84.1	82.0	78.9	79.7	77.9	80.9	81.7	81.7	82.3	74.2	75.0
Human Geography	Total # Exams	N/A	N/A	N/A	N/A	0	0	0	2	13	77	60	145	257	218	243	232	412	1,149
	% 3 or Higher	---	---	N/A	N/A	---	---	---	50.0	100.0	92.2	75.0	73.8	67.7	67.0	74.9	87.5	78.6	82.6
Physics B	Total # Exams	85	107	150	118	131	140	153	149	118	86	117	166	138	115	136	129	184	158
	% 3 or Higher	82.4	87.9	86.7	76.3	86.3	70.7	79.7	86.6	85.6	67.4	73.5	76.5	71.0	83.5	84.6	81.4	81.0	79.7
Psychology	Total # Exams	13	47	71	47	145	167	196	315	447	477	759	810	1,021	1,176	1,302	1,371	1,491	1,778
	% 3 or Higher	84.6	72.3	74.6	91.5	82.8	85.0	76.5	83.8	81.0	81.3	75.0	75.1	80.4	77.7	78.1	77.7	81.6	75.5
Spanish Language	Total # Exams	77	74	55	103	83	93	90	110	183	208	182	134	154	177	210	258	234	272
	% 3 or Higher	75.3	85.1	78.2	81.6	88.0	81.7	74.4	90.9	82	73.6	65.9	78.4	73.4	79.7	80.5	79.5	77.4	96.7
Statistics	Total # Exams	135	203	288	290	310	364	347	379	565	583	760	755	857	909	896	920	1,014	1,011
	% 3 or Higher	90.4	85.7	88.9	69.0	82.9	78.0	83.0	81.5	80.2	71.7	74.7	73.2	77.2	79.8	79.8	78.3	81.7	76.3
U.S. History	Total # Exams	470	487	523	644	691	724	729	696	652	794	955	1,050	1,005	1,159	1,189	1,363	1,453	1,368
	% 3 or Higher	74.0	68.6	66.5	67.5	64.0	70.4	71.9	74.4	74.8	70.0	71.0	66.7	72.7	74.6	76.3	74.4	72.2	69.1
World History	Total # Exams	N/A	N/A	N/A	N/A	N/A	55	77	48	242	272	281	339	340	237	217	257	423	406
	% 3 or Higher	N/A	N/A	N/A	N/A	N/A	74.5	77.9	83.3	79.8	80.1	87.5	78.8	82.1	84.4	82.9	86.8	73.3	84.5

Notes: Table lists the most commonly taken exams. Human Geography exams and World History were not nationally offered prior to 2000-01 and 2001-02 respectively.

Table Interpretation Example: In 2014 there were 593 Biology exams taken by WCPSS students. Of the 593 total exams taken, 82.1% of the scores were 3 or higher.

Data Source: College Board, Current Year Score Summary – Aggregated for Districts (2014), report downloaded 9-2-2014.

In 2013-14, all subjects except European History and Latin had average scores at or above 3 (Table 5). Note that some subjects (e.g., Latin and Chinese Language & Culture, etc.) had a relatively small number of test-takers. About half of exams taken in WCPSS in 2013-14 resulted in scores of 4 or 5. Calculus BC and Chinese Language & Culture had the highest average scores at 4.0 and 4.6, respectively.

Table 5
Frequency Distribution and Averages of WCPSS Exam Scores by AP Subject, 2014

		Scores					Total	Total AP
		5	4	3	2	1	Exams	Exam
Number of Exams		2,714	3,968	3,729	2,437	909	13,757	6,955
% of Total Exams (percentages are rounded)		20%	29%	27%	18%	7%	100%	
Subjects		5	4	3	2	1	Total Exams	Average Score
Art	Art History	6	10	3	8	4	31	3.2
	Music Theory	26	26	45	23	4	124	3.4
	Studio Art: 2-D Design Portfolio	4	7	17	4		32	3.3
	Studio Art: 3-D Design Portfolio	*	*	*	*	*	*	*
	Studio art: Drawing Portfolio	1	5	5			11	3.6
English	English Language and Composition	215	388	553	408	75	1,639	3.2
	English Literature and Composition	67	167	227	164	14	639	3.2
Social Studies	Comparative Government and Politics	9	11	10	11	2	43	3.3
	European History	4	18	35	9	11	77	2.9
	Human Geography	287	389	273	129	71	1,149	3.6
	Macroeconomics	15	48	36	21	20	140	3.1
	Microeconomics	3	20	8	9	6	46	3.1
	Psychology	362	584	396	256	180	1,778	3.4
	United States Government and Politics	114	126	211	125	25	601	3.3
	United States History	187	418	340	349	74	1,368	3.2
	World History	81	131	131	55	8	406	3.5
Math	Calculus AB	68	35	71	38	55	267	3.1
	Calculus BC	456	169	174	38	74	911	4.0
	Computer Science A	33	23	17	5	13	91	3.6
	Statistics	182	312	277	169	71	1,011	3.4
Science	Biology	82	190	215	100	6	593	3.4
	Chemistry	33	59	136	93	22	343	3.0
	Environmental Science	293	631	349	364	145	1,782	3.3
	Physics B	24	45	57	18	14	158	3.3
	Physics C: Electricity and Magnetism	14	15	5	15	7	56	3.3
	Physics C: Mechanics	23	18	18	9	5	73	3.6
Language	Chinese Language and Culture	30	6	5			41	4.6
	French Language and Culture	6	11	11	2		30	3.7
	German Language and Culture	3	5	3			11	4.0
	Japanese Language and Culture	2	1	4	2		9	3.3
	Latin			11	5	2	18	2.5
	Spanish Language	82	95	86	8	1	272	3.9
	Spanish Literature and Culture	*	*	*	*	*	*	*

Notes: Subjects with scores of fewer than 5 total test-takers have been replaced with asterisks to preserve confidentiality. Blank cells indicate there were no exams with that score

Data source: College Board, Current Year Score Summary – Aggregated for Districts (report downloaded, 9-2-2014)..

AP COURSE OFFERINGS/ENROLLMENTS

Table 6 shows the number of AP courses which have recorded enrollments for each high school in the district. The number of AP courses in WCPSS varies by school, with Enloe High School having the largest number in 2013-14, followed by Apex and Panther Creek. Sixteen WCPSS high schools had at least 15 of the 34 AP courses available from College Board in 2013-14. Since 2010-11, AP enrollments have increased by more than 25% in WCPSS, with 10,910² individual students accounting for 23,211 AP enrollments in 2013-14.

Table 6
Number of AP Courses and Total AP Enrollments By School

School	2013-14 # of AP Courses	2013-14 Total AP Enrollments	2012-13 Total AP Enrollments	2011-12 Total AP Enrollments	2010-11 Total AP Enrollments
Apex HS	25	1,475	1,351	1,102	1,061
Athens Drive HS	19	1,153	1,162	1,023	991
Broughton HS	23	1,052	1,005	1,006	1,136
Cary HS	22	964	1,100	1,121	930
Enloe HS	31	2,647	2,869	2,655	2,413
EW Arts Ed Global	3	60	64	40	57
EW Engineering	8	160	136	147	80
EW Health Sciences	7	231	178	121	114
EW Int Technology	7	102	66	30	56
Fuquay-Varina HS	15	534	551	482	484
Garner HS	14	779	762	565	450
Green Hope HS	24	2,238	2,262	1,928	1,717
Heritage HS *	20	1,059	676	229	34
Holly Springs HS	16	1,438	1,383	884	658
Knightdale HS	13	444	309	483	441
Leesville HS	20	1,046	1,094	931	894
Middle Creek HS	17	1,292	1,103	1,024	891
Millbrook HS	23	1,442	1,245	1,227	1,233
Panther Creek HS	25	1,901	1,595	1,533	1,454
Sanderson HS	17	696	635	649	604
SE Raleigh HS	14	382	355	352	501
Wakefield HS	20	1,112	1,181	1,219	1,409
Wake Forest High **	18	941	805	822	599
Wake Young Mens Lead. ***	2	44	-	-	-
Wake Young Womens Lead. ***	2	19	-	-	-
Totals		23,211	21,887	19,573	18,207

- Notes:
- * Heritage High School did not have 11th or 12th grades in 2010-11 and no 12th grade in 2011-12.
 - **Wake Forest High's name changed in the 2013-14 school year (from Wake Forest-Rolesville), and Rolesville High School opened in 2013-14 (not included).
 - ***Young Men and Women Leadership Academies opened in 2012-13 with grades 6, 7, and 9.
 - WCPSS' early colleges are not included since students take college-level classes at N.C. State University and Wake Technical Community College.
 - Data source: PowerSchool database.

²Some students have taken AP courses at more than one high school and are counted twice.

Membership Data

Among student subgroups, White (65%) and Asian (16%) students continue to account for disproportionate percentages of AP enrollments relative to their presence in the general student population. Conversely, Black/African American and Hispanic/Latino students comprise 26% and 13% of the high school student population but only 8% and 6%, respectively, of AP enrollments (Table 7). Note that this report used a different student membership³ month than has traditionally been used for Tables 7, 8, and 9.

Table 7
WCPSS AP Course Enrollments by Ethnicity

	2013-14		2013-14		2012-13		2011-12		2010-11	
	HS Membership ³ / %		AP ENROLLMENT							
	Total	%	Total	%	Total	%	Total	%	Total	%
American Indian	197	0.5%	55	0%	54	0%	29	0%	35	0%
Asian	2,605	6.0%	3,759	16%	3,796	17%	3,257	17%	2,676	15%
Black	11,384	26.1%	1,943	8%	1,684	8%	1,545	8%	1,507	8%
Hispanic/Latino	5,545	12.7%	1,487	6%	1,397	6%	1,259	6%	1,069	6%
Hawaiian/Pacific Is.	63	0.1%	30	0%	17	0%	12	0%		
Multiracial	1,856	4.2%	928	4%	859	4%	741	4%	647	4%
White	22,024	50.4%	15,009	65%	14,080	64%	12,730	65%	12,273	67%
Total	43,674		23,211		21,887		19,573		18,207	

- Notes: 1. Changes in the collection/reporting of ethnicity data per U.S. Department of Education directives mean that AP rates by ethnicity prior to 2010-11 may not be directly comparable to those from 2010-11 forward. 2013-14 ethnicity data is NCDPI's Month 3 MLD from: <http://www.ncpublicschools.org/fbs/accounting/data/>
2. WCPSS' two early colleges and alternative schools are not included in the table. Rolesville HS opened in 2013-14 and is also not included.
3. Some percentages may not total 100 due to rounding.

Table 8 shows AP course enrollments by gender. Female students continue to account for proportionately more AP enrollments than do their male counterparts. Male students continue to be underrepresented in AP enrollments based on their percentage of the overall membership.

Table 8
WCPSS AP Course Enrollments by Gender

	2013-14		2013-14		2012-13		2011-12		2010-11	
	HS Membership ³ / %		AP ENROLLMENT							
	Total	%	Total	%	Total	%	Total	%	Total	%
Female	21,408	49%	12,553	54%	11,720	54%	10,337	53%	9,551	52%
Male	22,266	51%	10,658	46%	10,167	46%	9,236	47%	8,656	48%
Total	43,674		23,211		21,887		19,573		18,207	

- Notes: 1. 2013-14 data are from NCDPI, Month 3 MLD at: <http://www.ncpublicschools.org/fbs/accounting/data/>
2. WCPSS' two early colleges and alternative schools are not included in the table. Also, Rolesville HS opened in 2013-14 with no AP enrollments and, therefore, is not included.
3. Some percentages may not total 100 due to rounding.

³ Past AP reports used 20th-day student membership. Due to problems caused by the state switching from one database to another, the same data were not available for 2013-14. Month 3 of Membership Last Day (MLD) was used for Tables 7 and 8.

According to the most recent estimates, the AP coursetaking percentage among graduating seniors nationwide (based on 2009 graduates) is about 36% (U.S. Department of Education, 2013). In WCPSS, the percentage of graduating seniors was 46% in 2009 and increased to 52% in 2014. During 2009-10, approximately 19% of the WCPSS high school student population enrolled in at least one AP course (McMillen, 2010). As of 2013-14, that figure had increased to 25% (Table 9). Among students in 11th and 12th grades, the percentage enrolled in at least one AP course was 44%.

Table 9
Counts of Students Enrolled in at Least One AP Course and Month 2 ADM

School	9th		10th		11th		12th		Total AP Students	Total Month 2 ADM	Total % of AP Enrollment
	AP	Membership	AP	Membership	AP	Membership	AP	Membership		Grades 9 - 12	Grades 9 - 12
Apex HS	2	583	161	748	274	648	287	547	724	2,526	28.7%
Athens Drive HS	0	548	113	475	183	469	220	436	516	1,928	26.8%
Broughton HS	2	657	166	540	186	503	189	436	543	2,136	25.4%
Cary HS	0	665	33	615	206	556	230	517	469	2,353	19.9%
Enloe HS	28	739	259	673	340	620	328	592	955	2,624	36.4%
EW Art Ed Global	0	96	1	102	2	92	11	102	14	392	3.6%
EW Engineering	0	104	5	101	17	89	44	78	66	372	17.7%
EW Health Sciences	0	105	19	97	49	87	69	95	137	384	35.7%
EW Int Technology	2	111	8	93	39	59	9	64	58	327	17.7%
Fuquay-Varina HS	2	609	62	499	127	450	141	412	332	1,970	16.9%
Garner HS	0	671	21	667	137	556	235	516	393	2,410	16.3%
Green Hope HS	1	605	233	629	372	558	338	502	944	2,294	41.2%
Heritage HS	12	482	116	475	193	461	196	399	517	1,817	28.5%
Holly Springs HS	1	652	207	574	267	561	307	537	782	2,324	33.6%
Knightdale HS	1	466	7	423	106	376	102	371	216	1,636	13.2%
Leesville HS	21	609	57	590	196	518	232	520	506	2,237	22.6%
Middle Creek HS	0	675	72	545	234	491	246	453	552	2,164	25.5%
Millbrook HS	0	705	144	656	296	660	288	629	728	2,650	27.5%
Panther Creek HS	0	768	147	610	330	630	325	567	802	2,575	31.1%
Sanderson HS	1	606	78	515	152	425	156	474	387	2,020	19.2%
SE Raleigh HS	0	519	9	363	94	414	96	341	199	1,637	12.2%
Wakefield HS	0	655	136	694	212	587	209	538	557	2,474	22.5%
Wake Young Men	0	37	27	40	-	0	-	0	27	77	35.1%
Wake Young Women	0	46	19	42	-	0	-	0	19	88	21.6%
Wake Forest HS	17	498	24	457	212	553	214	429	467	1,937	24.1%
WCPSS Totals	90	12,211	2,124	11,223	4,224	10,363	4,472	9,555	*10,910	**43,352	***25.2%

- Notes:
1. *Some students are double-counted if they took AP courses in multiple schools.
 2. **Total membership in Table 9 differs from Tables 7 and 8—see footnote under those tables.
 3. ***Percentage for Table 9 was derived from Month 2 Average Daily Membership⁴.
 4. Wake Forest-Rolesville is now Wake Forest High. Rolesville High (not included in table) opened with 9th and 10th grades in the 2013-14 school year. The two WCPSS early colleges are also not included since students take college courses at NC State University and Wake Technical Community College.

Data sources:

- a) Membership is Month 2 of NCDPI's ADM at: <http://www.ncpublicschools.org/fbs/accounting/data/>
- b) AP Enrollments: PowerSchool database.

⁴ Sum of # of days in membership for all students in a school/district in month 2, divided by the number of school days in month 2.

Summary and Discussion

Research on long-term outcomes from the AP program suggest that AP coursetaking, especially when coupled with a score of 3 or higher on the accompanying test, may lead to better academic outcomes in college (see Ewing, 2006 and Pope & Levine, 2013 for reviews; Smith, Hurwitz, & Avery, 2015). As such, AP program participation is considered to be an important indicator of college readiness among high school graduates. WCPSS AP course participation has steadily increased over the past two decades, and exam performance has been consistently above state and national averages for decades. The AP exam participation rate for the district has also remained higher than state and national averages. In recent years, the percentage of WCPSS students enrolling an AP course who also take the exam has held near 60%; which is particularly encouraging given the continued increase overall AP enrollment.

While these trends are promising at the overall level, one area of concern (not only for WCPSS but nationally as well) is participation in the AP program among Black/African American and Hispanic/Latino students. In WCPSS, about a quarter of the district's high school students are Black/African American, but they represent only 8% of AP enrollments. Hispanic/Latino students comprise around 13% of membership but only 6% of total AP enrollments. This disparity is undoubtedly affected by the persistent achievement gaps between these and other student subgroups in the years leading up to high school, which may result in fewer numbers of students being recommended for rigorous courses if past academic performance is one of the main criteria for entry into the AP program. Finding ways to address these kinds of opportunity gaps is critical to ensuring that all students leave high school with a rigorous, college-preparatory experience.

It is also noteworthy that other large districts in NC (see Table 1) are seeing larger percentages of their high school students taking AP tests than WCPSS. Given the wide margin by which AP test performance in WCPSS exceeds the state and national averages, as well of those of other districts that have larger proportions of students taking AP tests, this suggests that WCPSS may be more selective than other NC districts in terms of who is accessing AP courses and/or who is taking AP tests. Assuming a generally inverse relationship between AP test performance and AP course enrollment, investigating the ideal balance between enrollment and performance levels may be helpful. Efforts to create a more accessible pathway into AP courses that could reach farther into the student pool, with appropriate supports and scaffolding for under-represented groups, may bolster enrollment without having to necessarily sacrifice performance or put students into situations where they can't be successful. Examining practices in other districts who are having more success with widespread AP enrollment and success may yield some potential strategies in this respect. Previous research in WCPSS has demonstrated that students with only moderate academic performance coming out of middle school can still be successful in AP courses, particularly in certain subjects (McMillen & Dulaney, 2005). Using these selected AP courses to help students "test the waters" of the AP program may help to address access and equity issues, and could build students' confidence for taking additional rigorous courses later on as well.

Other organizations have also put forth recommendations for increasing participation in rigorous high school coursework. Recommendations from the Pathways to College Network include strategies schools can use to support students with rigorous coursework, especially in schools with

high minority concentrations. The authors suggest that schools better align and coordinate services for students and their families so that students receive more complete academic and social support both at home as well as at school. In addition, school administrators should better leverage their school counselors in course enrollment initiatives since they are at the forefront of supporting students both socially and academically. Advisories, smaller learning communities, and other strategies aimed at helping students better engage academically and emotionally with school can also play a role (Savitz-Romer, Jager-Hyman, & Coles, 2009).

The National Association of Secondary School Principals (2010) suggests the following for school and district staff in support of AP enrollment:

- Schools should have “open registration opportunities” for AP course enrollment. Students who may not qualify but are willing to put in the effort should be encouraged to apply.
- School counselors should proactively identify and encourage higher-scoring students who are not enrolled in AP courses to enroll.
- A more intentional approach should be taken to enroll more low income and/or minority students because historically these subgroups do not enroll (or are not selected) for rigorous coursework.

Continued efforts to encourage more students to engage with rigorous coursework such as that offered through the AP program is vital to ensuring that all students are well-prepared for their post-secondary pathways, particularly as WCPSS seeks to graduate 95% of its students ready for college, career and citizenship by 2020.

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