

AP Student Success at the College Level

KEY RESEARCH



AP Courses and Exams

ARTS

Art History
Music Theory
Studio Art: 2-D Design
Studio Art: 3-D Design
Studio Art: Drawing

AP CAPSTONE™

Research
Seminar

ENGLISH

English Language
and Composition
English Literature
and Composition

HISTORY AND SOCIAL SCIENCE

Comparative Government
and Politics
European History
Human Geography
Macroeconomics
Microeconomics
Psychology
United States Government
and Politics
United States History
World History

STEM

Biology
Calculus AB
Calculus BC
Computer Science A
Computer Science Principles
Chemistry
Environmental Science
Physics 1
Physics 2
Physics C: Electricity
and Magnetism
Physics C: Mechanics
Statistics

WORLD LANGUAGES AND CULTURES

Chinese Language and Culture
French Language and Culture
German Language and Culture
Italian Language and Culture
Japanese Language and Culture
Latin
Spanish Language and Culture
Spanish Literature and Culture

RESEARCH FINDINGS

AP student success at the college level

AP® programs in high schools, coupled with evidence-based AP policies at colleges and universities, support positive outcomes for students.

Multiple studies confirm that students who earn a 3 or higher on an AP Exam:

- 1 Perform well in subsequent college courses in the discipline**
- 2 Are more likely to major in their AP subject or a related discipline, particularly in STEM subjects**
- 3 Take more—not less—college coursework in the discipline**
- 4 Are more likely to graduate within four years**
- 5 Find opportunities that lead to success (especially true of underrepresented students)**

1 Students who took an AP Exam perform well in subsequent college courses in the discipline.

KEY FINDING

A 2007 study¹ revealed AP participation is related to positive outcomes for students earning a score of 3 or higher on an AP Exam. In most AP subjects, they performed the same as or better in the intermediate-level college course than students who took the college’s introductory course, controlling for prior achievement.

SAMPLE

70,000 students at 27 institutions, followed for five years

OUTCOMES ANALYZED

Intermediate course GPA, college majors

CONTROL VARIABLES

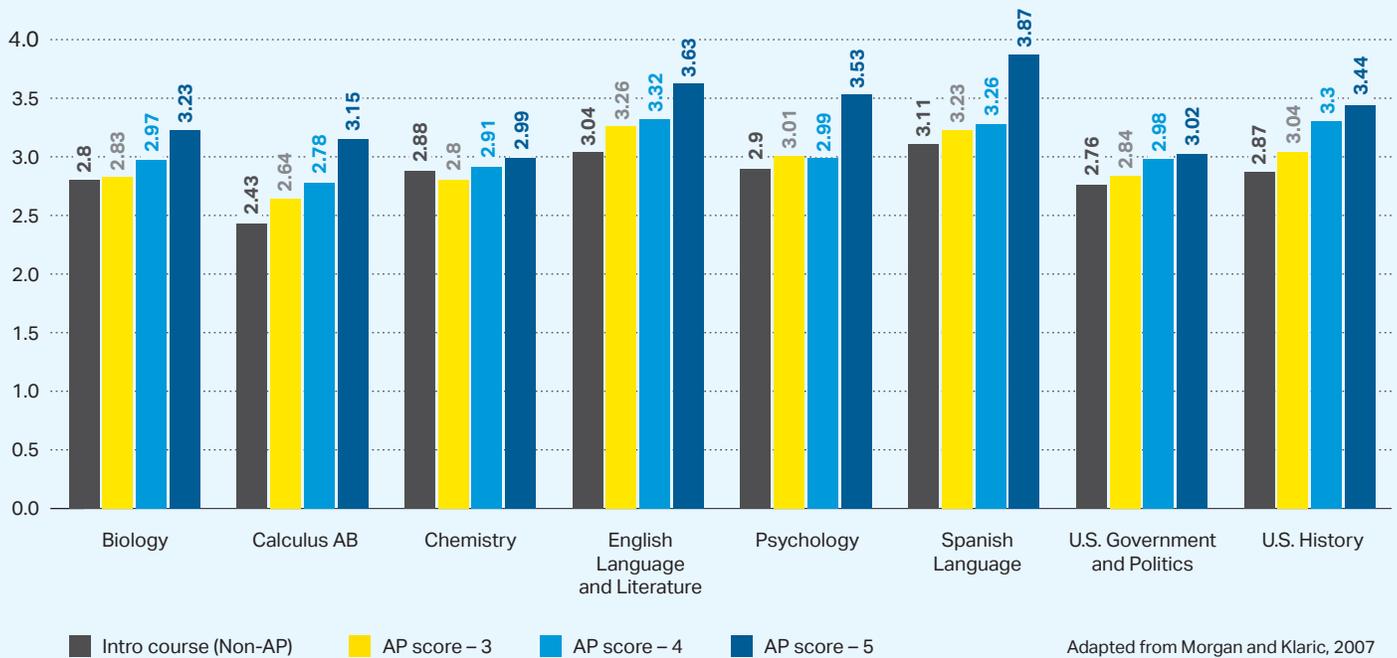
SAT® scores

FULL REPORT

bit.ly/WnOQBn

FIGURE 1

GPA in the subsequent college course, by performance



1. Morgan, R., & Klaric, J., (2007). *AP Students in College: An Analysis of Five-Year Academic Careers*. New York: The College Board.

2

Students who took an AP Exam are more likely to major in their AP subject or a related discipline, particularly in STEM subjects.

KEY FINDING

A 2011 study² revealed that the likelihood of majoring in a particular discipline increased with AP Exam taking in that discipline, the number of AP Exams taken in the discipline, and AP performance in the discipline. The effect was strongest for STEM majors. Also, students who took AP Exams were more likely to have declared a major than non-AP students. AP is a strong indicator of interest in a discipline, providing an opportunity for colleges to identify potential majors.

SAMPLE

40,000 students at 39 colleges

OUTCOMES ANALYZED

College major

CONTROL VARIABLES

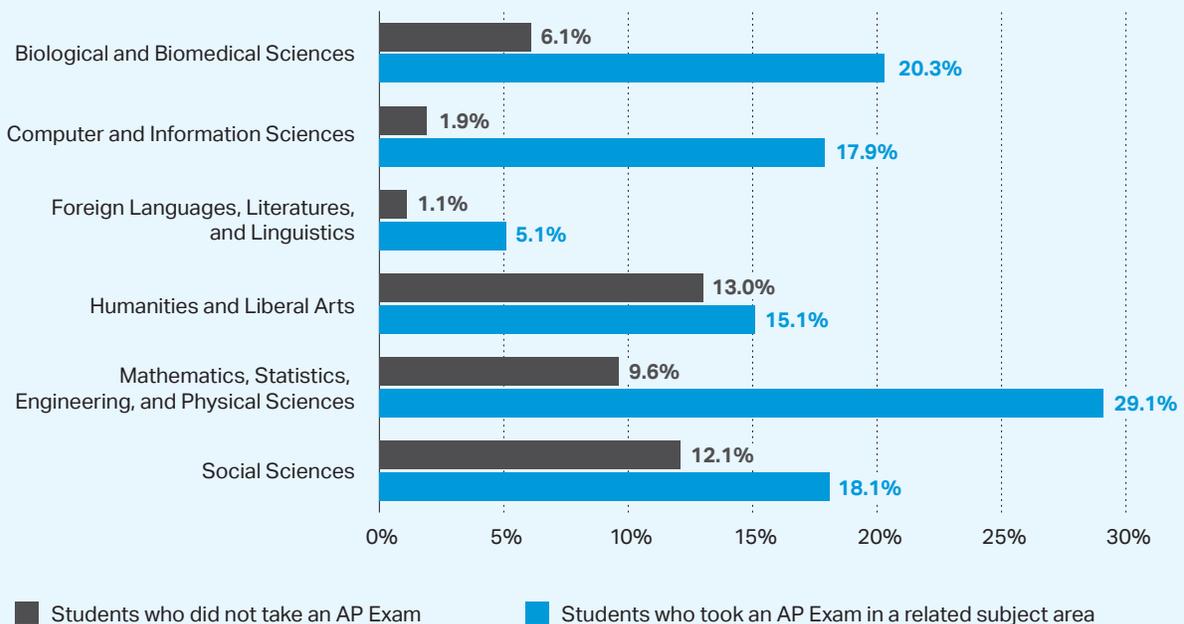
SAT scores, demographic variables, highest parental education

FULL REPORT

bit.ly/YWbtTg

FIGURE 2

Percentage of students majoring in a specific domain by AP participation



Examined major at beginning of third year in college, not major upon graduation. Does not account for prior interest or motivation.

Adapted from Mattern, Shaw, and Ewing, 2011

2. Mattern, K. D., Shaw, E. J., and Ewing, M. (2011). *Is AP Exam Participation and Performance Related to Choice of College Major?* New York: The College Board.

3 Students who took an AP Exam take more—not less—college coursework in the discipline.

KEY FINDING

A 2009 study³ found that AP students who took an AP Exam in one of 10 subjects studied generally took more credit hours in that subject area and in college overall than did non-AP students. In addition, AP students who earned college course credit based upon their AP Exam scores had statistically significantly higher subject-area GPAs than students without AP credit, controlling for prior academic achievement.

SAMPLE

25,000 students in four cohorts enrolled at the University of Texas at Austin

OUTCOMES ANALYZED

College GPA, number of college credit hours

CONTROL VARIABLES

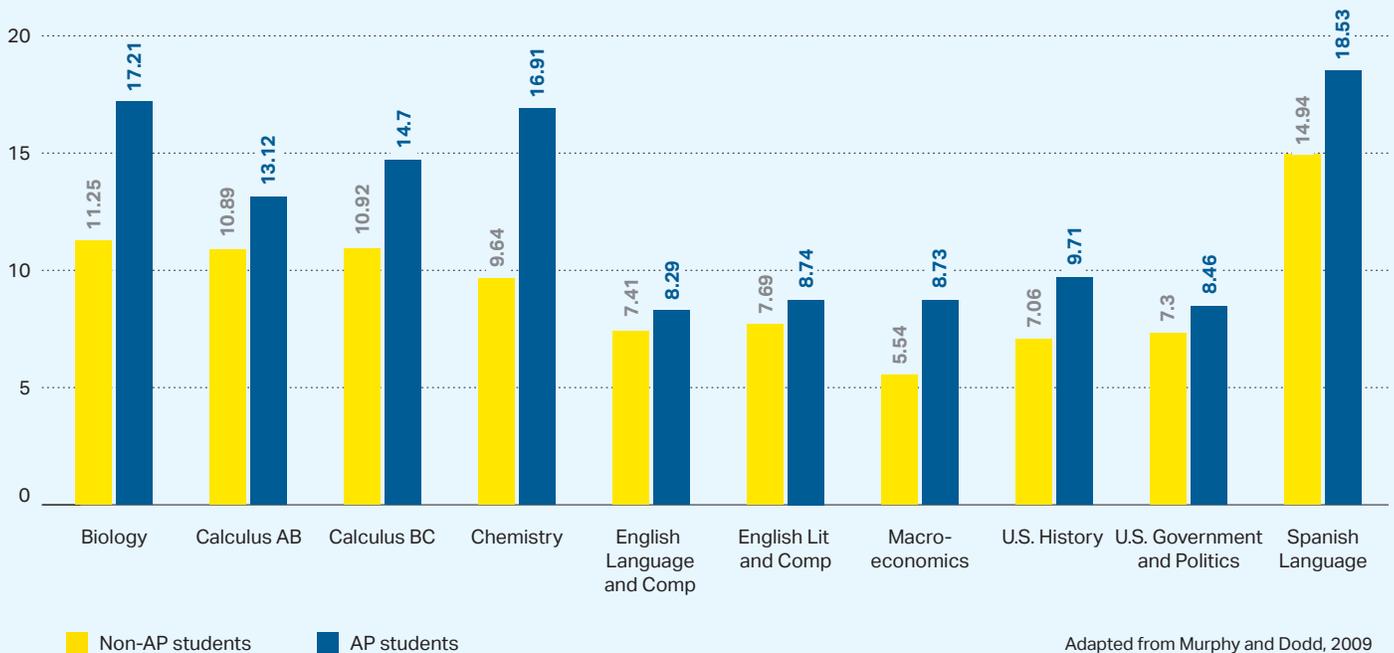
High school rank, SAT scores

FULL REPORT

bit.ly/13MGk1

FIGURE 3

Mean subject credit hours taken in college, by AP participation



3. Murphy, D. and Dodd, B. (2009). *A Comparison of College Performance of Matched AP and Non-AP Student Groups*. New York: The College Board.

4 Students who took an AP Exam are more likely to graduate within four years.

KEY FINDING

A 2013 study⁴ found that students who took one or more AP Exams, regardless of what score was earned, were more likely to graduate from college in four years compared to non-AP students, controlling for prior academic achievement, demographic variables, and school-level variables. In addition, students who earned higher scores on AP Exams had a higher likelihood of graduating in four years compared with students who earned lower scores, controlling for relevant variables.

SAMPLE

Sample 1: 112,000 students at 77 colleges and universities (2007 college freshmen)

Sample 2: 678,000 students (2008 college freshmen who had taken AP, PSAT/NMSQT®, or SAT; matched to National Student Clearinghouse graduation data)

OUTCOMES ANALYZED

College graduation in four years

CONTROL VARIABLES

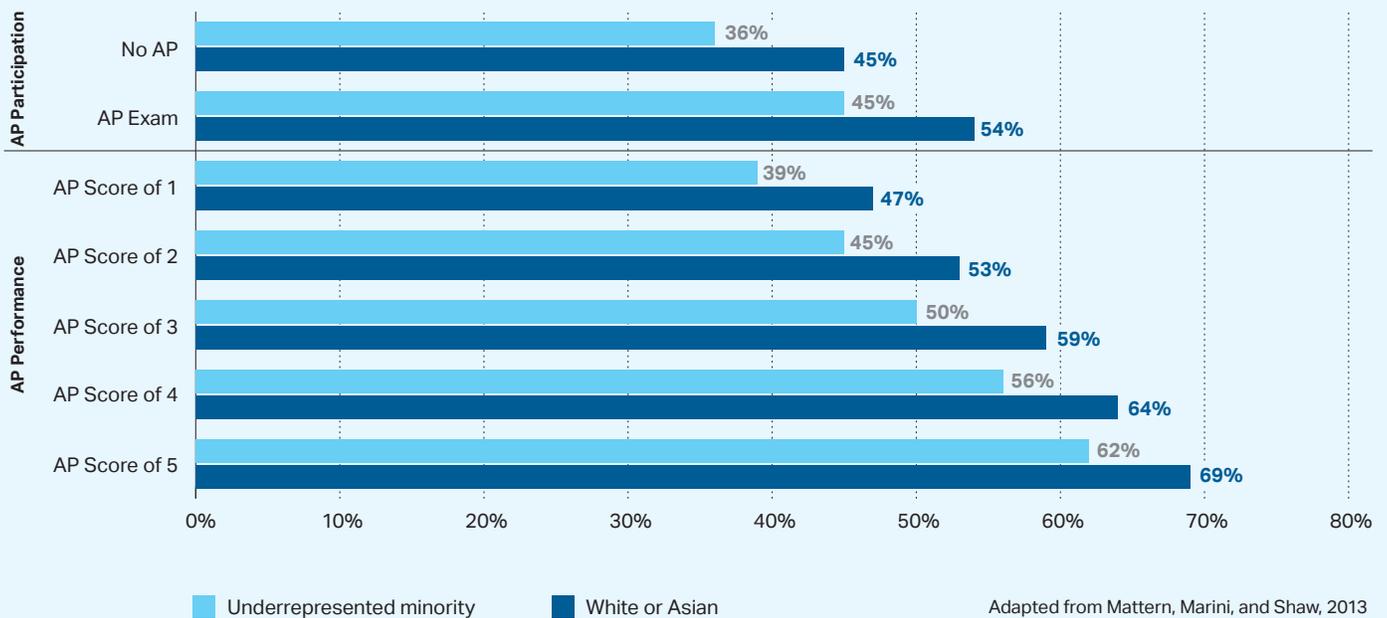
College selectivity, college control (public or private), PSAT/NMSQT scores, gender, underrepresented minority status, first-generation college-going status

FULL REPORT

bit.ly/1kTOJPu

FIGURE 4

Expected four-year graduation rate by AP participation and performance



Note: Expected graduation rates were computed based on Sample 1 models. These values are associated with non-first generation status females with an average PSAT/NMSQT score attending a public institution of average selectivity. Please see research report for all results.

4. Mattern, K. D., Marini, J. P., and Shaw, E. J., (2013) *Are AP Students More Likely to Graduate on Time?* New York: The College Board.

5 AP provides opportunities for underserved students to succeed.

KEY FINDING

A 2006 study⁵ found that, controlling for prior academic achievement, student-level variables, and school-level variables, traditionally underrepresented students who earned a score of 3 or higher on at least one AP Exam had a higher probability of graduating from college in five years or less than non-AP students of the same ethnicity/socioeconomic status.

SAMPLE

67,000 students at Texas public colleges and universities

OUTCOMES ANALYZED

College graduation in four years

CONTROL VARIABLES

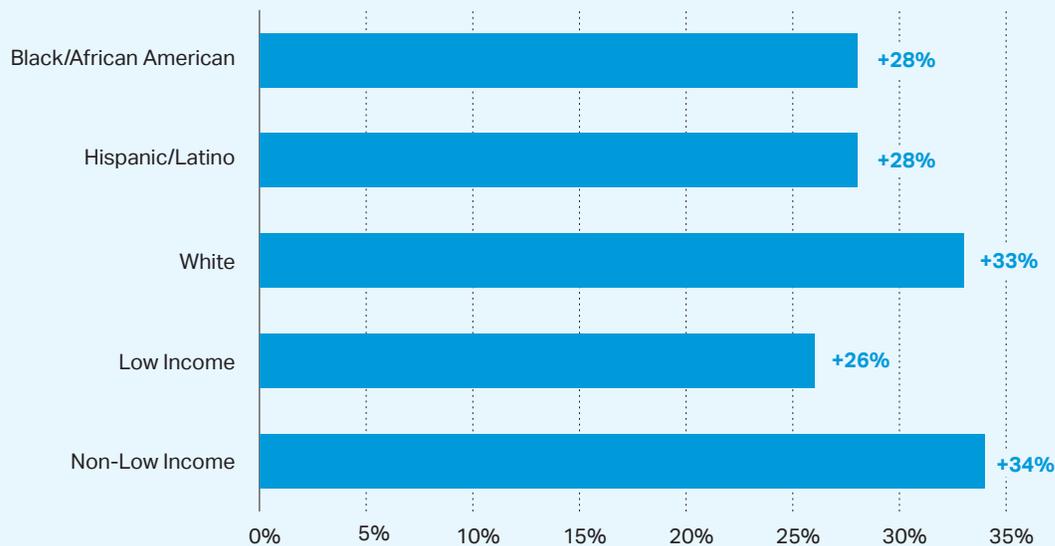
Eighth-grade math test scores, school-level characteristics

FULL REPORT

bit.ly/VRyzFK

FIGURE 5

Increase in probability of college graduation within five years or less compared with students not participating in AP, by ethnicity and socioeconomic status



Adapted from Dougherty, Mellor, and Jian, 2006

5. Dougherty, C., Mellor, L., and Jian, S. (2006). *The Relationship Between Advanced Placement and College Graduation*. National Center for Educational Accountability.

Essential AP Resources

The following resources are available from the College Board and can be requested at collegeboard.org/aphighered.

- 1. AP course and exam descriptions or curriculum frameworks:** These documents contain information important to developing a credit and placement policy, including the learning objectives for AP courses and exams; how AP Exams are scored; considerations on using and interpreting scores; and sample performance tasks, exams, and items.
- 2. Released AP Exams:** Because they are considered to be secure material, these may be obtained only by contacting a College Board representative at aphighered@collegeboard.org.
- 3. Current research on student outcomes:** Research includes both independent studies led by institutions across the country and College Board–sponsored research. Several of these research studies focus on placement validity, evaluating the success of AP students as they place into subsequent courses related to their AP Exam scores.
- 4. Summary of AP Scores Reported for your college:** You can order this report, which includes participation and performance data for the AP students who sent scores to your college or university.
- 5. National references:** American Council on Education issues credit and placement recommendations and the recommendations of national academic associations.
- 6. Placement validity studies and data services:** The College Board offers a free service—the Admitted Class Evaluation Service™ (ACES™)—to help facilitate a review of AP performance in subsequent courses. Visit collegeboard.org/aces for more information. The College Board also regularly works with institutional researchers at colleges to develop and implement local, customized validity studies. To learn more, contact aphighered@collegeboard.org.

Additional Research on AP Outcomes

College Subject Performance

Sadler, P. M., & Sonnert, G. (2010). High school Advanced Placement and success in college in the sciences. In P. M. Sadler, G. Sonnert, R. H. Tai, & K. Klopfenstein (Eds.), *AP: A Critical Examination of the Advanced Placement Program* (pp. 119–137). Cambridge, MA: Harvard Education Press.

Key finding: AP students perform at least as well as similar non-AP students in introductory courses.

Overall Performance

Scott, T. P., Tolson, H., & Lee, Y. T. (2010). Assessment of Advanced Placement participation and university academic success in the first semester: Controlling for selected high school academic abilities. *Journal of College Admission*, 208, 26–30.

Key finding: Students who received AP credit outperformed non-AP students on first-year GPA.

Geiser, S., & Santelices, V. (2004). The role of Advanced Placement and honors courses in college admissions. Center for Studies in Higher Education, University of California, Berkeley.

Key finding: AP Exam scores are among the very best predictors of college performance.

Mattern, Shaw, and Xiong, 2009

Key finding: The odds of returning for a second year of college are greater for AP Exam takers who scored a 3 or higher compared to non-AP students, controlling for high school GPA and SAT scores.

College Completion

Dougherty, C, Mellor, L, & Jian, S. (2006). The relationship between Advanced Placement and college graduation. National Center for Educational Accountability.

Key finding: Students who earn a 3 or higher on one or more AP Exams are more likely to graduate from college in five years or less even when controlling for prior academic achievement, demographic variables, and school-level variables.

Tai, R. H., Liu, C. Q., Almarode, J. T., & Fan, X. (2010). Advanced Placement course enrollment and long-range educational outcomes. In P. M. Sadler, G. Sonnert, R. H. Tai, & K. Klopfenstein (Eds.), *AP: A Critical Examination of the Advanced Placement Program* (pp. 109–137). Cambridge, MA: Harvard Education Press.

Key finding: AP participants are more likely to graduate from college than nonparticipants.

Hargrove, Godin, and Dodd, 2008

Key finding: AP Exam takers who scored a 3 or higher earned higher first- and fourth-year college GPAs than non-AP students and had higher four-year graduation rates, controlling for prior academic achievement.

Majors

Tai, R. H., Liu, C. Q., Almarode, J. T., & Fan, X. (2010). Advanced Placement course enrollment and long-range educational outcomes. In P. M. Sadler, G. Sonnert, R. H. Tai, & K. Klopfenstein (Eds.), *AP: A Critical Examination of the Advanced Placement Program* (pp. 109–137). Cambridge, MA: Harvard Education Press.

Key finding: AP participants are more likely to major in a related discipline than nonparticipants, particularly in STEM subjects.

Ackerman, P. L., Kanfer, R., & Calderwood, C. (2011). Optimal AP Portfolios with Special Reference to Science, Technology, Engineering, and Math (STEM) Majors and Gender Differences.

Key finding: AP participants are more likely to major in a related discipline than nonparticipants.

About AP

The College Board's Advanced Placement Program® (AP®) enables willing and academically prepared students to pursue college-level studies—with the opportunity to earn college credit, advanced placement, or both—while still in high school.

For further information, visit collegeboard.org/aphighered or contact aphighered@collegeboard.org.

About the College Board

The College Board is a mission-driven not-for-profit organization that connects students to college success and opportunity. Founded in 1900, the College Board was created to expand access to higher education. Today, the membership association is made up of more than 6,000 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success—including the SAT® and the Advanced Placement Program®. The organization also serves the education community through research and advocacy on behalf of students, educators, and schools.

For further information, visit collegeboard.org.