

Early College Credit Courses

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Introduction

Early college credit (ECC) courses are college-level courses offered to high school students. Many colleges and universities consider students' participation in ECC courses, as well as their grades or their scores on ECC-related assessments, during the admissions process. Students with high grades or scores can also obtain college credits or waivers from entry-level college courses upon college enrollment.¹ These motivations have led to substantial increases in ECC enrollment in recent decades.

ECC courses vary on several dimensions, such as course location and the process by which students earn college credits. In addition, states, districts, and individual schools often use different terms to refer to the various ECC models. Despite the variation, all ECC courses aim to provide more rigor than even an honors-level high school course, in terms of content, pace, peer effort, expectations, and workload. There are generally two widespread models in the United States. The oldest is the Advanced Placement (AP) program, which offers almost 40 academic courses and exams developed by a nonprofit organization (the College Board); AP courses are taught by high school educators on high school campuses. Dual-enrollment programs, a more recent model, offer high school students access to college courses that are developed by college faculty in the state or locality and that are taught by college or high school instructors. Dual-enrollment programs include both academic college preparatory and career and technical education (CTE) courses. There are also a handful of more comprehensive programs that, to date, are far less common than AP and dual enrollment in the U.S. For instance, the International Baccalaureate (IB) program offers an integrated curriculum that is focused on global awareness and aligned with IB assessments. Early college high schools (ECHSs), which are small secondary schools often located on college campuses, are another highly structured model. At ECHSs, students take a set of courses that lead to two years of college credits (or an associate's degree) upon high school graduation, and they receive extensive guidance and academic support. We discuss evidence on all of these forms of ECC (except for CTE courses).²

The main arguments in favor of ECC courses are that they offer a higher level of academic rigor than other high school courses and provide students with a head start on college credit. ECC programs also have their share of criticisms. One critique is that many students, particularly those from low-income backgrounds and rural communities, do not have access to ECC courses. A second major critique is that the evidence on the benefits of ECC courses relative to other academically rigorous high school courses has been oversold (this critique has mostly been directed at AP courses).³ A related critique is that ECC courses primarily benefit students from higher-income, college-educated families, while students with fewer out-of-school supports and in less-resourced schools are far less likely to earn college credit in these courses.⁴

Key findings

Key finding #1: *ECC courses are more rigorous than other high school courses, and they lead to positive outcomes for students who are adequately prepared but not for students with limited academic preparation and few out-of-school supports.*

Teachers of ECC courses typically receive additional training, and the evidence is increasingly clear that these courses offer deeper treatments of course concepts with higher workloads. ECC course enrollment increases students' subject-area knowledge, motivation, participation in additional rigorous secondary school courses, and college enrollment. Students who earn college credit-bearing scores in ECC courses are more likely to major in the subjects in which they earned those scores and to use the credits to shorten the time to bachelor's degree completion. However, students in ECC courses with lower levels of academic preparation are less likely than their more prepared peers to secure college credits, possibly due to stress and confidence, insufficient academic preparation, weaker instruction, or limited out-of-school supports. This inequality means that the most resource-constrained families often do not reap the financial benefits of ECC courses.

Key finding #2: *Even with large increases in overall enrollment over time, disparities in access to and participation in ECC opportunities persist.*

ECC courses are less likely to be offered in smaller schools, schools in high-poverty areas, and schools located in rural areas. Within schools that offer ECC courses, students from higher-income, college-educated, white, and Asian families are more likely to enroll in such courses. These sociodemographic disparities in enrollment are often driven by differences in prior academic preparation and out-of-school supports linked to family financial resources.

Key finding #3: *Policies that mandate ECC course offerings or enrollment can increase overall participation, but fee waivers for low-income students may be necessary to reduce economic and racial gaps in participation.*

Some states and districts require schools to offer a certain number of ECC courses, require students to enroll in the courses to obtain their diploma, or both. These policies can increase ECC course participation, but they can also widen gaps in enrollment. Offering course fee or exam waivers specifically to low-income students can increase participation among students from lower-income families.

Key finding #4: *More substantive investments may be necessary to reduce gaps in ECC course success between students with different levels of prior preparation and family resources.*

There is evidence that students from lower-income and less academically prepared backgrounds can succeed in ECC programs with parental outreach, student-focused academic support and college counseling, teacher supports, and cash incentives to teachers and students. Students might also learn more in ECC courses that are taught with a project-based learning approach where content-aligned projects form the core of the course, rather than serving as a culminating experience, and teachers dynamically adjust content in response to students' interests and needs.

Understudied topics

Research on ECC programs has not kept pace with their growth, and there are many underexamined topics. Broadly speaking, the limited research does not allow for conclusions about variation in ECC courses and their effects. For instance, the research base is too small to draw comparisons between the effects of different types of ECC courses on student outcomes—that is, whether taking an AP Calculus course would benefit a student more or less than a calculus course offered at a nearby community college. We are also unable to draw conclusions about the effects of courses in different subjects (e.g., English versus mathematics) and for different subgroups of students beyond those discussed in this review. There is also a great deal of variation among existing studies in terms of samples, contexts, courses, and research designs. This variation prohibits specific conclusions about the magnitudes of ECC effects on many student outcomes, though we attempt to offer estimated effects on college enrollment or college graduation. In addition, we need more research on interventions and practices that would most help students with lower levels of academic readiness and fewer out-of-school supports succeed in ECC courses. Within ECC contexts, there have been no large-scale studies on, for example, the effects of selecting and coaching teachers, providing one-on-one tutoring to students, or socializing ECC participants to college campuses, which prevents us from making strong recommendations on policies, programs, and practices.⁵

Evidence

Research on ECC courses dates back to the origins of these courses in the middle of the 20th century. Analyses of ECC enrollments and outcomes rely on the following data sources: (1) College Board reports on AP exam performance; (2) a few longitudinal studies of probability samples of U.S. high school students; (3) the Civil Rights Data Collection (CRDC), a national biennial survey of U.S. public high schools and school districts; (4) local or state-level administrative data; and (5) samples of students from a small set of experimental studies. This review focuses on the most contemporary studies and, where quantitative, on research with a high degree of causal integrity. Causal integrity refers to confidence in attributing differences in outcomes between ECC course participants and nonparticipants to the ECC courses themselves, as opposed to other factors that influence course enrollment and later academic success, such as prior academic achievement, information, or family support. Where applicable, we also distinguish between national data and state or local data. We also include evidence from case studies of ECC course implementation barriers and approaches that suggest promising strategies for reducing disparities in access. Many school districts and states have produced case studies and reports that yield similar results. Therefore, readers should view our choice of citations as examples rather than an exhaustive list of publications.

Key finding #1: *ECC courses are more rigorous than other high school courses, and they lead to positive outcomes for students who are adequately prepared but not for students with limited academic preparation and few out-of-school supports.*

Relative to the numerous studies that estimate effects of secondary school course-taking more generally, there is a small set of studies that focus specifically on ECC courses. Many of these studies improve causal integrity by controlling for student and school attributes that drive both ECC participation and subsequent student outcomes, and in some cases, they improve on those controls with matching techniques. Reviews of these studies

generally point to large positive effects of ECC courses on student outcomes.⁶ In this review, we mainly focus on the narrower set of studies that employ experimental designs (where students are randomly assigned access to ECC courses) or nonexperimental designs that take advantage of other policy changes that somewhat randomly increase or decrease students' access to ECC courses. We also highlight three studies in the evidence for key finding #3 on policies and practices because the unique settings in these studies shed light on strategies that might help reduce disparities in outcomes between more and less academically prepared students.

There are currently two experimental studies of ECC courses. One of them focuses on a form of dual-enrollment coursework in Tennessee (TN) where high school teachers lead courses that were developed by a statewide group of high school and college instructors.⁷ These courses are free and available to students from a range of academic preparation. For each course, those who obtain or exceed the passing score on the end-of-course exam can secure college credit at any public college or university in the state.⁸ The experiment examined the effects of a pilot advanced algebra course on a range of student outcomes, including course-taking late in high school, college enrollment, and college choice.⁹ Teachers of the ECC course received summer training and access to an online peer-to-peer network of same-subject ECC teachers across the state, and students experienced deeper exposure to algebraic concepts than did students in the control schools.

The TN experiment found that access to the ECC course among 11th graders increased the likelihood of enrolling in additional rigorous math courses—including AP—in 12th grade and decreased the likelihood of participating in remedial math courses late in high school. Course enrollment did not alter overall college enrollment rates; however, it increased the likelihood that a student enrolled in a 4-year university and commensurately decreased their likelihood of enrolling in a 2-year college. This tilt away from 2-year institutions and toward 4-year institutions was stronger for students in the middle of the baseline math achievement distribution (compared to those at the top) and for 11th graders (compared to 12th graders). For example, among students in the middle of the prior achievement distribution, enrollment in a 4-year college increased by 3.5 percentage points (p.p.), while enrollment in a 2-year college decreased by roughly the same magnitude. However, less than one-third of students passed the end-of-course exam necessary to secure college credit. A companion, nonexperimental study from TN that explored the introduction of a broader menu of new ECC courses found increases in ECC participation among students with widely differing levels of academic preparation but very low pass rates on end-of-course exams.¹⁰

The second experimental study focuses on AP science courses. This study included schools from across the U.S. that did not have a long tradition of offering AP science courses and that were located in lower- to middle-income school districts with high shares of students eligible for subsidized meals and from Black and Hispanic backgrounds. Teachers of the new AP courses received summer training, and some reported in interviews that they struggled with delivering AP content and rigor to students who were underprepared for college-level coursework.¹¹ Despite these teacher reports, students in the AP courses reported higher levels of intellectual challenge and workload than did students in the control group. This finding is consistent with the TN study described above and another descriptive study that found much higher workloads in AP science courses than in regular and honors-level science courses.¹²

The impact evaluation from the AP experiment found suggestive evidence that taking an AP science course increased students' science skills, their interest in pursuing a science, technology, engineering, or math (STEM) major in college, and their motivation to attend a selective college. At the same time, students in the AP class had much higher levels of stress, lower confidence, and worse grades.¹³ Many high schools adjust for the lower grades that students obtain in AP courses by creating weighted grade point averages (GPAs) that give more weight to more challenging classes (for example, a C in an AP class might be converted to a B in the weighted calculation).¹⁴ However, the results of the AP study suggest that some schools might not be weighting enough to offset the negative effect on grades for struggling students since most colleges encourage students to take ECC courses only if they can do well in them. AP course-takers were also far more likely to take AP exams, but they opted out at high rates, and most of the students who took the exams did not earn college credit-bearing scores. Additionally, AP course-takers' increased aspirations to attend a selective college did not lead to higher rates of enrollment in such institutions.

The findings from this experiment (which, again, includes many students from low-income families) indicate low success rates among students who were less prepared for AP courses. A 2023 nonexperimental paper that examined the effect of increased AP course offerings on students in Michigan public schools tells a similar story. When schools increased their AP course offerings, higher-income students, white and Asian students, and students with higher levels of academic preparation were more likely to take advantage of the new courses than were students from other backgrounds, which led to an increase in enrollment gaps.¹⁵ Offering more AP courses also led to higher enrollment in more competitive colleges, and boosted 4-year degree completion rates, but only for students who entered high school with very strong academic preparation.¹⁶

The studies described above concern the effects of ECC courses taught by high school teachers on high school campuses. There are also two studies with high causal integrity that examine ECC courses on community college campuses. Both of these studies compare college outcomes for high school students who were barely eligible to enroll in ECC coursework based on their high school GPA to students who fell just below the eligibility threshold. This approach provides a high degree of causal integrity because students near the eligibility threshold should be more or less similar on traits that affect both ECC participation and college outcomes, aside from the opportunity to take the ECC course. One of the studies took place in an unnamed state and found that taking ECC courses did not influence students' likelihood of applying to college. However, it found that taking such courses increased the number of applications to 4-year institutions, including selective 4-year institutions, and boosted the likelihood of being admitted to a selective 4-year university.¹⁷ The other study took place in Florida and found that for students on the cusp of eligibility, enrollment in an ECC algebra course substantially increased the likelihood of college enrollment and degree completion.¹⁸ The results from these two studies generalize only to students on the margin of course enrollment eligibility, who tend to be students on the margin of academic preparation (or in the middle of the baseline achievement distribution referred to in the TN study above). Hence, these results are consistent with the finding that students who are somewhat academically prepared can benefit from ECC courses, including those that are offered on community college campuses.

Another strand of research focuses more specifically on the effect of obtaining a high AP exam score, as opposed to the overall effect of enrolling in an ECC course. These studies

compare students who barely earn a college credit-equivalent score on an AP exam to students who barely fail to earn this college credit-bearing score. Those who earn such a score are approximately 1–2 p.p. more likely to complete their bachelor’s degrees in four years, and those who score high on science or math exams are more likely to major in a STEM subject.¹⁹ These studies provide compelling evidence that if students score well on an exam, they are highly likely to take advantage of postsecondary AP credit policies by waiving out of introductory courses. In addition, the evidence provided by these studies indicates that a higher score on an AP exam may serve as a signal of skill in the AP subject to both higher education institutions and students.

Taken together, the findings from these studies suggest positive effects of ECC courses on many secondary and postsecondary outcomes for moderately to highly prepared students. At the same time, the research points to increases in stress and reductions in confidence, as well as high opt-out rates and low pass rates on ECC assessments for students who are from low-income backgrounds or who are less academically prepared for these courses.

Key finding #2: *Even with large increases in overall enrollment over time, disparities in access to and participation in ECC opportunities persist.*

ECC enrollments have been climbing for decades. For example, the number of high school graduates taking at least one AP exam increased from around 452,000 in 2002 to over 1.1 million in 2022, representing approximately one-third of all high school graduates in the U.S.²⁰ As of the 2017–18 school year, the most recent national survey of high schools reports that 80% offered at least one dual-enrollment course.²¹ Currently, there is substantial regional variation in which programs are most popular, with the AP program having higher participation rates in coastal states and dual-enrollment programs having higher participation rates in the middle of the country.²²

Despite the enrollment growth, large gaps in ECC participation across students in different schools and from different socioeconomic backgrounds persist. These enrollment gaps are driven by both disparities in course offerings across schools and disparities in course enrollment across students within schools. National data reveal that many small high schools and high schools in rural communities that serve low-income students offer no to limited ECC courses either on the high school campus or through a local college campus.²³ Research on the barriers to ECC course offerings primarily consists of state-level quantitative analyses and case studies with focus groups, interviews, and document analysis. These analyses reveal that one of the main barriers to boosting ECC course offerings is the limited availability of teachers with the appropriate training or credentials, such as a college major or master’s degree in the course subject area.²⁴ Another challenge to offering access to dual-enrollment courses in rural areas is the cost of transporting students to distant college campuses.²⁵ In schools with small enrollments, some of the shortage may also be driven by administrators’ perception that there is not a critical mass of students eligible to enroll in (or perform well in) the courses.²⁶ Other barriers to dual-enrollment offerings in particular include perceptions that the quality and rigor of the courses are not on par with college-level coursework or that the credits obtained through the courses will not be transferable to out-of-state and private colleges.²⁷

When ECC courses are available, enrollment rates are much higher among wealthier students and students from college-educated, white, and Asian family backgrounds.²⁸ For instance, of the cohort of ninth graders in 2009, 42% of those with parents who held a

bachelor's degree took courses for college credit compared to only 26% of students whose parents did not hold a high school diploma.²⁹

Research examining the reasons for these disparities in ECC course participation often points to students' prior academic preparation and course-related costs as the main drivers. In several studies of course-taking, racial disparities are substantially reduced (and, in some cases, reversed) when models control for students' pre-course academic preparation.³⁰ However, conditional on pre-course preparation, students from low-income backgrounds are much less likely than their more affluent peers to enroll in ECC courses. Interviews with families and school administrators point to the costs of tuition and fees or exams as the primary barrier to enrollment for academically prepared students from low-income families.³¹

Key finding #3: *Policies that mandate ECC course offerings or enrollment can increase overall participation, but fee waivers for low-income students may be necessary to reduce economic and racial gaps in participation.*

The Education Commission of the States provides an overview of ECC policies in all states, with information on program basics, access, courses, portability of college credit, and costs.³² Nearly every state in the country provides incentives aimed at increasing ECC course offerings and student participation. These public incentives include grants to secondary schools to cover instructional materials and teacher training, subsidies to families for tuition and exam fees, and bonuses to teachers and schools for high student performance on assessments. Some states also have accountability and mandate mechanisms around ECC course enrollment. For instance, some states include ECC course participation in accountability reports, require secondary and postsecondary institutions to report the number, demographics, and success metrics among students participating in ECC programs, require students to take at least one ECC course, or require public postsecondary institutions to award college credit for ECC courses.³³ The criteria for ECC enrollment (e.g., minimum GPA, teacher recommendation) vary across school districts. Messaging from some school district leaders and the College Board aimed at reducing barriers to taking ECC courses has led to more flexible and, in some cases, entirely open enrollment policies. For instance, in a 2008 survey of a nationally representative sample, 65% of secondary school teachers reported that their schools encourage as many students as possible to take AP courses, and 69% reported that AP courses are generally open to any student who wants to enroll.³⁴

The Michigan study described in the evidence section for key finding #2 found that the mere offering of new ECC courses increases racial and economic gaps in course enrollment. Studies that rely on national data find higher ECC participation rates in states and localities that mandate ECC partnerships between secondary and postsecondary institutions or hold districts and schools accountable for ECC offerings.³⁵ However, these areas also tend to show larger gaps in enrollment between demographic groups. This unintended consequence may be driven by the focus of the mandates on ensuring equal offerings of ECC opportunities across districts rather than ensuring equal uptake of those opportunities across different groups of students. In contrast, these studies find that racial and economic gaps in ECC enrollment are smaller in states with fee reductions or waivers for lower-income students.³⁶ Another paper that used national data and focused specifically on AP exam-taking found higher rates of exam-taking among lower-income students in states that waive the AP exam fee. However, the fee waiver did not increase students' likelihood of earning a college credit-bearing score on AP exams.³⁷

Key finding #4: *More substantive investments may be necessary to reduce gaps in ECC course success between students with different levels of prior preparation and family resources.*

There are additional sets of studies on ECC courses offered in somewhat unique settings that point to possible strategies for improving the course success rates of students from families with less education and other resources. The first are evaluations of ECHSs where students from backgrounds that are historically underrepresented in higher education receive a range of supplementary supports, including proactive college counseling, parental outreach, tutoring, and college credit transfers at very low cost. ECHS evaluations that rely on random assignment find positive effects on a range of outcomes, including high school completion, college enrollment, and both bachelor's and associate's degree attainment. Some of this work also finds relatively larger positive effects on such outcomes among students from disadvantaged backgrounds, signaling the potential for this model to reduce disparities in early postsecondary outcomes between students from varying economic backgrounds.³⁸

Second, an evaluation of a Texas program called the AP Incentive Program (APIP) points to the possible value of cash incentives. This program provides salary supplements to teachers for developing AP courses, cash bonuses for teachers and students for passing scores on AP exams, and AP exam fee reductions for students with financial need. The APIP evaluation found that incentives for teachers and students increased AP enrollments and AP course-taking, with larger positive effects on Black and Hispanic students than on white students.³⁹ The study also found positive effects on college entrance exam scores, college matriculation rates, college persistence, and even wages years after high school completion.⁴⁰

Finally, a recent experimental study found some success in project-based learning approaches.⁴¹ Project-based learning courses focus less on memorization and lectures and more on student-driven inquiry, with the teacher serving as a facilitator rather than a traditional lecturer. This study found that students from both high- and low-income backgrounds earned higher AP exam scores in AP courses that emphasized project-based learning than in traditional AP courses.

Endnotes and references

- ¹ No central repository tracks college policies concerning the treatment of ECC courses in admissions or credit granting. However, surveys of college admissions officers and website reviews provide evidence of widespread consideration of ECC coursework at more selective institutions. See, for example, Clinedinst, Melissa. 2019. [2019 State of College Admission](#). National Association for College Admission Counseling.
- ² In recent years, there have been efforts to expand dual-enrollment access for students who have been underrepresented in higher education by offering CTE dual-enrollment courses. The workforce goals of CTE courses are often quite different from those of more academically oriented dual-enrollment courses, and there is very little research on the effects of CTE dual-enrollment courses on students. Sometimes, analyses of “dual enrollment” will combine these two types of courses, leading to smaller racial and class disparities in overall participation rates because Black, Hispanic, and lower-income students are overrepresented in CTE dual-enrollment courses. For example, see Rodriguez, Ola, and Ni Gao. 2021. [Dual Enrollment in California](#). Public Policy Institute of California.
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- ⁴ Dougherty, Chrys, and Lynn Mellor. 2009. [Preparation Matters](#). National Center for Educational Achievement; Duffett, Ann, and Steve Farkas. 2009. [Growing Pains in the Advanced Placement Program](#). Thomas B. Fordham Institute; Bowie, Liz. 2013. [Maryland Schools Have Been Leader in Advanced Placement, but Results Are Mixed](#),” The Baltimore Sun, August 17.
- ⁵ Research outside the ECC context with strong causal integrity suggests avenues worth exploring in ECC settings. For example, a very recent study found positive effects on academic and engagement (e.g., absences) of a partial detracking policy aimed at Algebra I, wherein students with low levels of prior preparation were placed in classes with grade-level peers and teachers received additional training on differentiating and targeting instruction. Dee, Thomas S. and Huffaker, Elizabeth. 2024. [Accelerating Opportunity: The Effects of Instructionally Supported Detracking](#) (EdWorkingPapers). Additionally, according to recent studies, [high-dosage tutoring](#), [extended learning time](#), early monitoring of progress, and [well-trained guidance counselors](#) all hold the potential for exploration within ECC contexts.
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- ⁷ State educators refer to these courses as “dual credit” to distinguish them from the more traditional form of dual enrollment where courses are taught by college professors on college campuses and credits are earned from grades, not end-of-course exams. However, in the interest of simplicity, we call them dual-enrollment courses.
- ⁸ Hughes, Katherine L. et al. 2012. [Broadening the Benefits of Dual Enrollment](#). James Irvine Foundation.
- ⁹ Hemelt, Steven W., Nathaniel L. Schwartz, and Susan M. Dynarski. 2020. [Dual-Credit Courses and the Road to College: Experimental Evidence from Tennessee](#). *Journal of Policy Analysis and Management* 39(3): 686–719.
- ¹⁰ Hemelt, Steven W., and Tom Swiderski. 2022. [College Comes to High School: Participation and Performance in Tennessee’s Innovative Wave of Dual-Credit Courses](#). *Educational Evaluation and Policy Analysis* 44(2): 313–341.
- ¹¹ Long, Mark C., Dylan Conger, and Raymond McGhee. 2019. [Life on the Frontier of AP Expansion: Can Schools in Less-Resourced Communities Successfully Implement Advanced Placement Science Courses?](#) *Educational Researcher* 48(6): 356–368.
- ¹² Sadler, Philip M. et al. 2014. The Role of Advanced High School Coursework in Increasing STEM Career Interest. *Science Educator* 23(1).
- ¹³ The impact evaluation results were published in the following two papers: Conger, Dylan et al. 2021. [The Effect of Advanced Placement Science on Students’ Skills, Confidence, and Stress](#). *Journal of Human Resources* 56(1): 93–124; Conger, Dylan, Mark C. Long, and Raymond McGhee, Jr. 2023.

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- ¹⁶ Ibid.
- ¹⁷ Yuen Ting Liu, Vivien, Veronica Minaya, and Di Xu. 2022. [The Impact of Dual Enrollment on College Application Choice and Admission Success](#) (Working Paper). Community College Research Center.
- ¹⁸ Speroni, Cecilia. 2011. [High School Dual Enrollment Programs: Are We Fast-Tracking Students Too Fast?](#) New York, NY: National Center for Postsecondary Research.
- ¹⁹ Gurantz, Oded. 2021. [How College Credit in High School Impacts Postsecondary Course-Taking: The Role of Advanced Placement Exams](#). Education Finance and Policy 16(2): 233–255; Avery, Christopher, Oded Gurantz, Michael Hurwitz, and Jonathan Smith. 2018. Shifting College Majors in Response to Advanced Placement Exam Scores. Journal of Human Resources 53(4): 918–956; Smith, Jonathan, Michael Hurwitz, and Christopher Avery. 2017. Giving College Credit Where It Is Due: Advanced Placement Exam Scores and College Outcomes. Journal of Labor Economics 35(1): 67–147.
- ²⁰ [AP Program Results: Class of 2022 – Reports](#). College Board. 2022.
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- ²² Xu, Di, Sabrina Solanki, and John Fink. 2021. [College Acceleration for All? Mapping Racial Gaps in Advanced Placement and Dual Enrollment Participation](#). American Educational Research Journal 58(5): 954–992.
- ²³ Hemelt and Swiderski (2022); Klopfenstein, Kristin. 2004. [The Advanced Placement Expansion of the 1990s: How Did Traditionally Underserved Students Fare?](#) Education Policy Analysis Archives 12: 68–68; Nowicki, Jacqueline M. 2018. [Public High Schools with More Students in Poverty and Smaller Schools Provide Fewer Academic Offerings to Prepare for College](#). U.S. Government Accountability Office; Perna, Laura W. et al. 2015. Unequal Access to Rigorous High School Curricula: An Exploration of the Opportunity to Benefit from the International Baccalaureate Diploma Program (IBDP). Education Policy 29(2): 402–425.
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