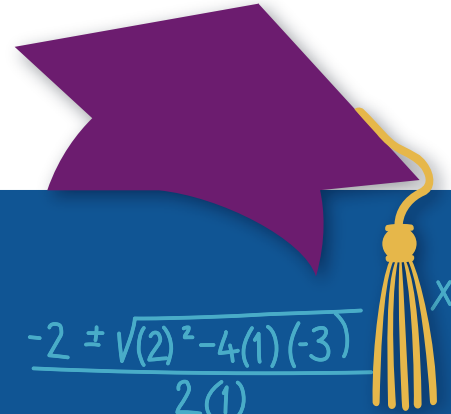


INTEGRATING EARNING COLLEGE CREDIT IN HIGH SCHOOL INTO ACCOUNTABILITY SYSTEMS



Published in August 2015.

CC BY Achieve 2014. This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/> or send a letter to Creative Commons, 444 Castro Street, Suite 900, Mountain View, California, 94041, USA.



Table of Contents

Introduction	2
Three Common Models of Earning College Credit in High School	3
Research Shows the Positive Relationship between Earning College Credit in High School and College Success	5
Current State Policies Incorporating Earning College Credit into Accountability Systems	7
Public Reporting	7
Accountability Formulas	12
Recommendations	15
Conclusion	18
Endnotes	19
Acknowledgments	22

Introduction

Earning college credit in high school matters to students and parents. Students who earn college credits by taking a college-level course while in high school are more likely to enter college and succeed. Through these experiences, students become familiar with college expectations, academic behaviors, and habits of mind; get a head start on postsecondary education and gain academic momentum toward a degree or credential; and begin to develop a college identity. Additionally, just as states should know whether students are progressing toward and reaching certain benchmarks of college and career readiness, they should also know whether high school students are exceeding those goals by taking the advanced courses that further solidify their transition to college and put them a step ahead once they arrive. Policymakers and educators who value this indicator for key student subgroups can drive improvements in outcomes for low-income and minority students who are historically less likely to earn a postsecondary degree or credential.

There is clear evidence that earning college credit prior to postsecondary enrollment is a predictor of college success. As a result, both Achieve and Jobs for the Future have encouraged states to incorporate into their accountability systems measures related to earning college credit while in high school. This paper provides research-based guidance to states contemplating whether and how to incorporate indicators of students earning college credit during high school into their accountability systems, including through their accountability formulas and public reporting. The first section describes the three most common models of earning college credit in high school: Advanced Placement (AP), International Baccalaureate (IB), and dual enrollment. The second section describes the research that shows the positive relationship between earning college credit while in high school and later college success. The third section looks at the landscape of current state policies on incorporating college course taking into accountability systems and highlights different state approaches in both accountability formulas and public reporting. The paper concludes with a set of recommendations for states interested in valuing students earning college credit while in high school in state accountability systems and provides concrete steps for ensuring that those policies serve all students.

Including early college credit earning in state accountability systems would encourage schools to prepare more students for success in college. It also would signal the importance not just of getting to the “water’s edge” of college readiness but also of gaining the academic and non-academic momentum that increases the likelihood of college success.¹

Three Common Models of Earning College Credit in High School

The three models of high school students earning college credit that are most often included in accountability systems are:

- **AP:** The AP program, which is overseen by the College Board, offers high school students an opportunity to take college-level classes taught by high school faculty. Course content is aligned with standards set by the College Board, which approves high schools' AP course offerings. Students may take one or more AP classes depending on their interests and any eligibility requirements set by their high schools. The College Board also creates and scores AP exams that are administered by high schools. Students who have completed AP classes may choose to take exams in the corresponding subject area; students who have not completed AP classes may also take the exams. Colleges may award students postsecondary academic credit based on their scores on AP exams; individual colleges determine the minimum required scores, which may vary by subject area.²
- **IB:** The IB Diploma Program is overseen by the International Baccalaureate, which provides high schools with a curriculum for IB classes. The IB Diploma Program includes a two-year curriculum that students generally complete during their junior and senior years of high school. Students in the IB Diploma Program must complete six interdisciplinary IB courses, write a research paper, and participate in community service. IB exams correspond to IB classes, and only students who have completed the corresponding classes are permitted to take the exams. Students who complete all requirements for the program and pass the exams earn IB diplomas, which are recognized by numerous colleges in the U.S. and around the world. Colleges may also choose to award academic credit based on IB exam scores.³
- **Dual enrollment:** Dual enrollment occurs when a high school student takes a course from a college and, upon successful completion, receives credit on a college transcript. Often, students can earn dual credit from both their high school and the college for the same course, if the content aligns with curricular requirements of the respective institutions. Just as for any college course, sponsoring colleges award credit on the basis of successful course completion, including interim and final exams, projects, and other performance assessments. State laws and policies governing dual enrollment vary considerably.⁴ In this paper, college-level courses discussed in the context of this model do not include remedial or developmental courses.

COLLEGE AND CAREER READINESS INDICATORS

Achieve has long held that states need to incorporate a set of college and career readiness indicators into their accountability systems that are used in several ways. College and career readiness requires far more than receiving a certain test score — students need the experience of working toward mastery of college- and career-ready (CCR) standards and persisting along pathways to graduation, advanced training, and postsecondary education. As such, states should include indicators that reflect student achievement on assessments; completion of rigorous coursework; and attainment of credits, recognized credentials, and degrees. In addition, incorporating college and career readiness indicators into accountability systems emphasizes that states need to ensure that they incentivize student progress toward and beyond college and career readiness so that the system recognizes and rewards schools and districts where students are making strides toward — but not yet meeting — readiness. States should include indicators from each of the following categories:

- **Earning a CCR diploma:** *The percentage of students who graduate from high school with a CCR diploma;*
- **Scoring college ready on a high school assessment:** *The percentage of students who score at the college-ready level on high school assessments aligned with CCR standards;*
- **Earning college credit in high school:** *The percentage of high school students earning college credit through Advanced Placement, International Baccalaureate, and/or dual enrollment; and*
- **Requiring enrollment in remedial courses in college:** *The percentage of high school graduates who — upon entrance to a postsecondary institution — are placed into a remedial course in reading, writing, and/or mathematics.*

These indicators can be used by states in different and multiple ways as evidence that the state's accountability system values and incentivizes college and career readiness:

- **Public reporting:** *Reporting to the public the percentage of students who satisfy the requirements of the CCR indicators at the school level;*
- **Performance goals:** *Setting and publicly communicating statewide performance goals that include a date for increasing the percentage of students who satisfy the requirements of the CCR indicators;*
- **Incentives:** *Establishing incentives to reward schools and districts for increasing the percentage of students who satisfy the requirements of the CCR indicators; and*
- **Accountability formula:** *Factoring the percentage of students who satisfy the requirements of each CCR indicator into the high school accountability formula.*

Research Shows the Positive Relationship between Earning College Credit in High School and College Success

The three primary models for earning college credit in high school — AP, IB, and dual enrollment — should all be rewarded by accountability systems. Each of the three models for earning college credit while in high school is associated with increased postsecondary enrollment, persistence, and completion rates, as well as improved college course performance. Early college course completion while in high school may even shorten time to earning a postsecondary degree.

Studies have suggested the following types of positive effects on educational attainment for all of the earning college credit models.

Improved college readiness and enrollment rates

- Dual enrollees and early college students are more likely to graduate from high school and enroll in college.⁵
- AP students are more likely than non-AP students to enroll in four-year colleges and universities after high school.⁶
- The IB program is strongly associated with improved college readiness, full-time college enrollment, and enrollment in selective colleges and four-year institutions.⁷

Improved performance as college students

- College students who complete college courses as dual enrollees have higher grade point averages (GPAs) and more credit than peers who did not participate in dual enrollment.⁸ They are more likely than non-dual enrollees to earn a B or higher in college courses and to complete a bachelor's degree in a timely manner.⁹
- AP students who are placed into higher-level courses on the basis of exam scores get better college course grades than non-AP students who have taken introductory college courses in the subject area.¹⁰
- Students who have completed the IB Diploma Program have higher GPAs and college graduation rates than non-IB students.¹¹

Increased rates of postsecondary persistence, retention, and graduation

- Students who have completed college courses as dual enrollees have higher college persistence rates, are more likely to complete an associate degree or higher within six years than non-dual enrollees, and gain momentum that helps them complete bachelor's and advanced degrees.¹²
- The number of students from a given high school who take and pass AP exams is the best AP-related indicator of whether the school is preparing increasing numbers of students to graduate from college.¹³ AP students have an increased likelihood of graduating from college in three years, although they are not necessarily any more or less likely to graduate within four to five years.¹⁴

- IB students have higher college retention and four-year graduation rates, are more likely to persist in four-year colleges for two years, and are more likely to graduate college within four to six years than other students nationally.¹⁵

Pronounced benefits for underrepresented student groups

- The positive effects of AP programs may be larger for underrepresented students, particularly Hispanic students.¹⁷
- Dual enrollees from low-income families have higher rates of college degree attainment than their non-dual enrollment peers from higher-income families.¹⁸
- Early college high schools, which largely serve low-income youth and students of color, improve high school and college success rates. Ninety-three percent of students graduate from high school, as compared to 78 percent nationally. Nearly a quarter earn associate degrees by the time they finish high school, and 94 percent of early college graduates earn some college credit for free, with the average graduate earning 36 college credits before graduating from high school and going on to college at higher rates than their peers nationally.¹⁹

STRONG STATE POLICIES ON DUAL ENROLLMENT

As states incorporate indicators for dual enrollment into accountability systems, they should have in place strong state-level policies that support dual enrollment to expand participation and encourage collaboration between the secondary and postsecondary education systems. Jobs for the Future has identified six key state policy levers to support dual enrollment:

- 1. Eligibility and access:** *States should broaden eligibility requirements to permit students to participate in credit-bearing, college-level courses based on proficiency in those subjects even if they are not proficient in others. Student eligibility should also be determined by multiple measures: a combination of tests, end-of-course grades, teacher recommendations, and students' work portfolios.*
- 2. Quality assurance:** *States should ensure that college courses offered to high school students use the same syllabi and exams as comparable courses taught on a college campus and that dual enrollees can receive dual credit so they earn both high school and college credits upon successfully completing courses. In addition, the postsecondary institution conferring credit should set the qualifications for faculty teaching courses taken for dual credit.*
- 3. Sustainable funding and finance:** *States should develop funding policies that allow high school students to take college courses free of tuition and non-course-related charges and that allow both districts and postsecondary institutions to claim per-pupil funding allocations to support the cost of offering college courses for dual credit. There should also be provisions or special appropriations to support the development of early college models targeting students who are underrepresented in higher education.*

continued on next page

continued from previous page

- 4. System for accountability:** States should report annually on dual enrollment participation and impact and develop administrative structures to support program leaders and dual enrollment partnerships. States should also designate a state board or governing body as having the authority and responsibility to guide dual enrollment policy.
- 5. Aligned data systems:** States should develop unit-record statewide data systems that identify dual enrollees by demographic characteristics and monitor student progress longitudinally across the K-12 and higher education systems.
- 6. Academic and social supports:** States should require that districts and postsecondary institutions specify and document key roles and responsibilities in memoranda of understanding or cooperative agreements, including the provision of a college liaison for student advisement and support. States should also provide support and funding for programs designed to serve students who are overage and undercredited and youth who have dropped out of high school.¹⁶

Current State Policies Incorporating Earning College Credit into Accountability Systems

Given the positive relationship between earning college credit while in high school and college success, states have a powerful incentive to value earning college credit in their accountability systems. And states have a number of policy levers that they can draw on to drive improvement in the number of students earning college credit while in high school. Reporting clear, actionable data — whether through the state education agency’s report card or a third-party’s reporting of student progress — is one of the most powerful strategies in a state’s toolbox for meeting student performance goals. Some of the most prominent — and powerful — policy levers are the state and federal laws and regulations that govern the comprehensive report cards state education agencies publish on all districts and schools. Another policy lever stems from P–20 education initiatives that often include public reporting of student results. Some states report these indicators through high school feedback reports (outside the school report cards) meant to spur specific changes to improve college and career readiness.²⁰

Another critical policy lever arises from the state’s accountability formula for districts and schools. States can build an indicator of earning college credit in high school into a school accountability formula, allow schools to earn bonus points or rewards for students earning college credit, or a combination of the two approaches. Below, the paper describes the policy landscape for how earning college credit is incorporated into both public reporting and accountability formulas and also highlights several states at the forefront of this work.

Public Reporting

A state’s report card on districts and schools has the visibility and accessibility to reach many people with interest in and influence on student outcomes and should be viewed by states as a critical lever as they consider how to enhance public reporting. While in many cases, states can add data indicators to comprehensive report cards without changes to statute or regulations, actually putting policy changes into law may have a high payoff in reinforcing the importance of the data with policymakers and securing the commitment and resources needed to implement the data collection, management, analysis, and robust reporting they envision.

Given the high value that students, parents, and the public place on readiness and success in postsecondary education and careers, states are increasingly incorporating this indicator into their report cards on districts and schools or through other annually reported school-level data. In 2014, **13 states** publicly reported the percentage/number of students who satisfy the requirements of the indicators at the school level — an increase from just three states in 2010 and six states in 2012.²¹ Most commonly, states reported the percentage of students earning a 3 or above on an AP exam (**11 states**). Of these, nearly all states reported the data independent of the other “earning college credit options” listed (see Table 1 below). **Eight states** reported the percentage of students earning a 4 or above on an IB exam, although **only four states** (Indiana, Maryland, Ohio, and Virginia) reported these data as a standalone indicator; the others did so aggregated as part of AP, dual enrollment, and/or other indicators (e.g., career readiness). **Eight states** reported the percentage of students successfully completing dual enrollment coursework as part of their earning college credit indicator; **four of these states** (Hawaii, Indiana, Louisiana, and Ohio) reported these data independent from the other measures of earning college credit included in the states’ public reporting.

Table 1: States That Publicly Report the Percentage/Number of Students Earning College Credit while in High School

School-Level Public Reporting					
	%/# earning a 3+ on AP exam	%/# earning a 4+ on IB exam	%/# successfully completing dual enrollment course	If >1 measure, are they reported independently?	Link to where reported
FL			✓	N/A	FL HS Feedback Reports
GA	✓	✓	✓		GA College and Career Ready Performance Index
HI	✓		✓	✓	HI P20 Report Cards
IN	✓	✓	✓	✓	IN Compass Reports
LA	✓	✓	✓	Yes for AP, DE; not for IB	LA Advanced Placement Results by District & School LA School Report Cards (Dual Enrollment)
MD	✓	✓		✓	MD School Report Cards
MA	✓			N/A	MA DART: Success after High School
NV	✓		✓		NV School Performance Reports
NC	✓			N/A	NC Advanced Placement Reports
OH	✓	✓	✓	✓	OH School Report Cards
PA	✓	✓			PA School Performance Profiles
TX	✓	✓	✓		TX Performance Reporting System
VA		✓		N/A	VA Advanced Programs by School Report

Eleven states (Arkansas, Connecticut, Missouri, New Jersey, New Mexico, Oklahoma, Rhode Island, South Carolina, Utah, Washington, and Wisconsin) are not included in Table 1 because they focus solely on participation in advanced coursework (the above definition is specific to performance), their data are not reported at the high school level, they do not disaggregate the above measures from broader meta-indicators (e.g., technical skills assessments), and/or they do not report the number/percentage of graduates or of a cohort scoring 3 or above an on exam, but instead they report data such as the number of exams taken, the number of students to take an exam, and the number and percentage of exams with certain scores.

REPORTING TECHNIQUES AND BEST PRACTICE

States can build understanding of student performance patterns and trends in several ways:

- *Reporting the numbers as well as percentages of students, making the data more real, and increasing the sense of urgency;*
- *Using “vertical” comparisons between different levels in the education system, such as comparing a school’s performance to the average performance of its school district and state;*
- *Shining a light on performance disparities among student subgroups; and*
- *Using “horizontal” comparisons between the same level in the education system, such as comparing a school’s performance to other schools through school rankings or showing where the school’s performance lies along a spectrum of school performance.*

CCR indicators should reflect the performance of all students against a specific benchmark tied to readiness, specifically:

- *Numerators should be criterion-referenced where possible (e.g., percentage of students meeting the CCR benchmark rather than average score) to better capture changes in readiness.*
- *Denominators should include all students, preferably all students in a graduating cohort (e.g., the 2012–13 graduating cohort rather than just students taking an assessment) to improve the stability of the indicator and its ability to portray the full picture of readiness for students in the school.*

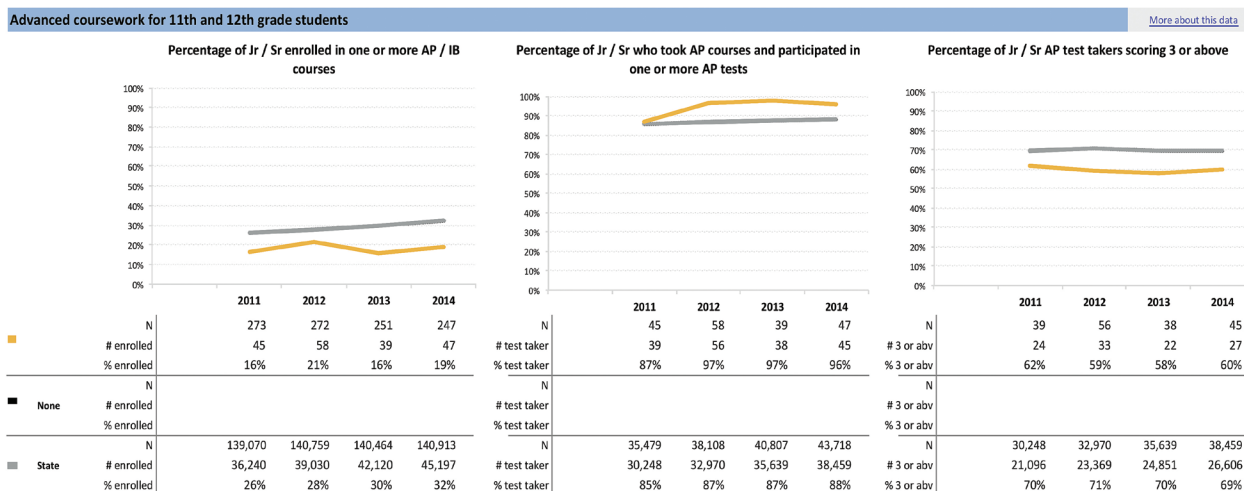
State Highlights in Public Reporting

Teachers and administrators need these data to take action — to change, adjust, or fine-tune systemic approaches to specific practices to support individual students, change course expectations and/or curricula, let administrators know which students are ready for more advanced coursework, identify emerging successes, and benchmark best practices. Students and their parents need timely and clear data to understand where students are on the trajectory to college and career — not just in high school but all along their academic path. Finally, policymakers and the public need access to these data to align resources, evaluate impacts from specific strategies, and inform a wide range of strategic decisions to improve outcomes and opportunities for all students.

Sample Massachusetts District Analysis and Review Tool (DART) Report

Massachusetts uses its [DART system](#) to publicly report school-level outcomes on the percentage of 11th and 12th grade AP test takers scoring 3 or above. DART includes multiple years of data to show trends; has the ability to compare schools or districts with one another and against state averages, as well as against the 10 schools most similar to the user's school in terms of grade span, total enrollment, and special populations; and critically, allows the user to generate reports by specific subgroup — a feature that sets it apart from other states. Data elements related to earning college credit include:

- Percentage of juniors/seniors enrolled in one or more AP/IB courses;
- Percentage of juniors/seniors who took AP courses and participated in one or more AP test;
- Percentage of junior/senior AP test takers scoring 3 or above; and
- Percentage of test takers scoring 3 or above on the AP by category (subject area).

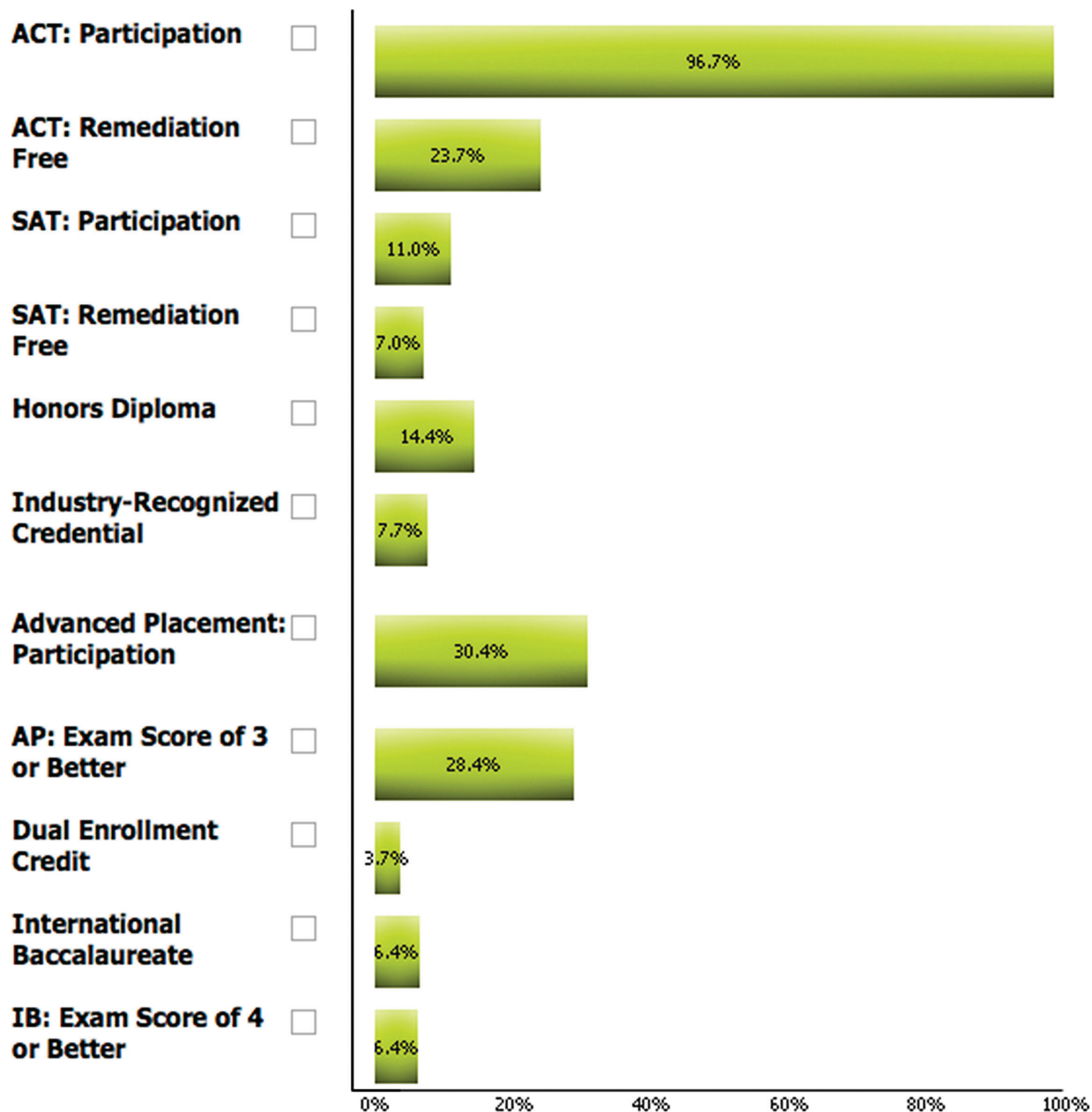


Sample Ohio School Report Card

Ohio uses its [School Report Cards](#) to show how high school graduates perform across a range of indicators. The “Prepared for Success” measure includes rates of AP participation, students earning 3 or better on an AP exam, students earning three or more dual enrollment/postsecondary credits, students participating in an IB program,

and students scoring 4 or better on an IB exam. Each of these measures is disaggregated at the school level, and data represent students in the four-year graduation cohort; the state has taken steps to use a denominator that reflects all students in a graduating cohort rather than just students taking an assessment to improve the stability of the indicator and its ability to portray the full picture of readiness for students in the school. See below for a sample Ohio School Report Card displaying the “Prepared for Success” data.

How Prepared was Your 2013 Graduating Class?



Accountability Formulas


In addition to public reporting, states can incorporate the percentage of students earning college credits while in high school into formulas used to differentiate and classify schools. In 2010, just **two states** signaled the importance of earning college credit while in high school through their accountability formulas.²² Since then, **nine additional states** have built this indicator into their accountability formulas. In 2014, **11 states** included the percentage of students earning college credit while in high school in their school accountability formulas or as reward/bonus points (see Table 2 on page 13). **Eight of these 11 states** included AP, IB, and dual enrollment coursework in their accountability formulas. In calculating individual school accountability scores within these states, success on AP, IB, and dual enrollment were not counted separately, and the college credit paths were given equal weight.

States should clearly report on the subindicators from their accountability systems so that all stakeholders can understand the indicators being collected and students' performance on them. In many cases, accountability data are reported as dichotomous (yes/no) indicators or are part of a weighted calculation, making them difficult to decipher.

While state progress in adding this indicator to their accountability formulas is noteworthy, many more can and should take this step. When states do not choose to include these student performance indicators in their accountability systems, they miss an opportunity to signal to schools and districts, communities, parents, and students that this indicator matters.

Table 2: State Accountability Formulas That Include Earning College Credit

State Accountability Formula Includes Percentage/Number of Students Who ...			
	Earn a 3+ on an AP exam	Earn a 4+ on an IB exam	Complete dual enrollment coursework
FL	✓	✓	✓
GA	✓	✓	✓
ID	✓	✓	✓
IN	✓	✓	✓
LA	✓	✓	✓
MD	✓	✓	
MO	✓	✓	✓
NV	✓		✓
NM	✓	✓	✓
PA	✓	✓	
TX	✓	✓	✓



Accountability formulas can be very complex, including a host of indicators across many school quality categories. Typically, when states *do* include the percentage/number of graduates earning college credit while in high school in their school accountability formulas, they use a combination of the three earning college credit models (AP, IB, and dual enrollment) and include a measure of career readiness (e.g., attaining an industry-recognized credential or technical skills assessment), which are then all aggregated into one meta-indicator. In other words, students can meet the state’s benchmark by demonstrating only one dimension of college or career readiness, rather than both. This approach also masks career readiness indicators at a time when they should be highlighted and valued in their own right. **Georgia, Louisiana, Pennsylvania, and Texas** are states that have taken the steps to include a “standalone” measure of earning college credit in their accountability formulas.

State Highlights in Building Earning College Credit into Accountability Formulas

Georgia’s College and Career Ready Performance Index (CCRPI)

Georgia is one state that has taken steps to build AP, IB, and dual enrollment credit — as well as a second measure that includes scoring 3 or higher on two or more AP exams or scoring 4 or higher on two or more IB exams — into its accountability system for high schools. Georgia’s statewide accountability system, the CCRPI, rates high schools on a wide variety of indicators, including post-high school readiness. This category includes:

- Percentage of graduates earning high school credit(s) for accelerated enrollment via ACCEL, Dual HOPE Grant, Move On When Ready, Early College, Gateway to College, AP courses, or IB courses; and
- Percentage of graduates entering Technical College System of Georgia/University System of Georgia who do not require remediation or learning support courses or who score program ready on the Compass, at least 22 out of 36 on the composite ACT, at least 1550 out of 2400 on the combined SAT, 3 or higher on two or more AP exams, or 4 or higher on two or more IB exams.

The state has also taken steps to set benchmarks for the indicators at 73.9 percent and 83.3 percent, respectively, which is an important signal about where schools should strive to be on these indicators.²³

Louisiana's Accountability System

Louisiana distinguishes itself from other states by valuing more rigorous coursework and performance on AP, IB, and/or College-Level Examination Program (CLEP) exams more in its school accountability formula (see below). Even more noteworthy, the state's graduation index differentiates attainment of college credit-earning scores on AP, IB, and CLEP exams and career credentials and weights these more heavily than achieving a passing score in the course itself. The state also publicly reports these data at the school level, comparing the results to district and state progress on the measures. Louisiana's accountability system will award schools points for each member of a cohort as follows:²⁴

INDEX POINTS	FALL 2016 SPS (2014–2015 COHORT)
150	HS Diploma plus (a) AP* score of 3 or higher. IB* score of 4 or higher, or CLEP* score of 50 or higher OR (b) Advanced statewide Jump Start credential * <i>Four-year graduates achieving both an advanced statewide Jump Start credential qualifying level will generate 160 points.</i>
110	HS Diploma plus (a) At least one passing course grade for TOPS core curriculum credit of the following credit, dual enrollment, or IB* OR (b) Basic statewide Jump Start credential * <i>Students achieving both (a) and (b) will generate 115 points.</i> ** <i>Students must take the AP* exam and pass the courses to earn 110 points.</i>
100	Diploma (includes Career Diploma student with a regional Jump Start credential)
25	HiSET*
0	Non-graduate, Certificate of Achievement
140	5th year graduate with AP* 3+ or IB* 4+ or CLEP* 50+
75	5th year graduate with diploma*
50	Sixth year graduate

* For the basic credential 110 point reward, dual enrollment must count for TOPS Core Curriculum starting with 20 Industry-Based Certification (IBC), starting with the graduating class of 2017–2018 (2019 SPS), only WIC-approved basic statewide credential.

** Students must take the AP*/AB* exam and pass the course to earn 110 points.

Recommendations

Accelerating students into entry and completion of postsecondary education while still in high school is a promising source of momentum toward college readiness and success. The following are key ideas to consider as policymakers look to develop accountability systems that will drive progress toward these outcomes:

- **Equitable access:** One step that states can and should immediately pursue is obtaining a more nuanced picture of students' course-taking patterns to determine both how many schools offer access to these courses and how many (and which) students participate and succeed in these courses, as well as those students ready for more challenging courses.
- **Public reporting:** States should track and disaggregate data on early college course-taking opportunities by demographic group.
- **Incentives:** On the basis of findings regarding the positive impacts of the predominant models of earning college credit while in high school, all three indicators should be placed on an equal footing within accountability systems. Specifically:
 - > Accountability systems should value AP, IB, and dual enrollment equally;
 - > States should reward successful AP and IB exam performance and successful dual enrollment completion over course taking; and
 - > States should incentivize success in more than one college-level course.

Understanding Equitable Student Access to College Credit-Earning Coursework

One step that states can and should immediately pursue is obtaining a more nuanced picture of students' course-taking patterns to determine both how many schools offer access to these courses and how many (and which) students participate and succeed in these courses. Too, states should take on the equally important issue of ensuring that all students, regardless of where they attend school, have equal access to rigorous courses. It should be noted that the vast majority of states have the ability to analyze students' course-taking patterns, although few have done so or publicly shared results.

To do this, states should collect the data necessary to enable them to analyze course-taking patterns of high school students so they can answer basic questions, including, "Are there significant gaps in successful participation in courses based on race, ethnicity, gender, family income, English language learner status, and special education status? Are the gaps closing? Which students are ready to succeed in more challenging coursework?" Understanding how course offerings and success rates differ by district and school also paints an important picture about how students' access to courses differs across each state. Knowing and understanding this information can help identify bright spots within the state that may be worth replicating more broadly across the state. Finally, publicly releasing course-taking patterns demonstrates a state's commitment to transparency and a willingness to act on issues of equity to college credit-earning coursework to ensure access for all students.

Publicly Reporting Access and Success for Students Earning College Credit

States should track and disaggregate data on early college course-taking opportunities by demographic group. Systems should include both indicators of enrollment and completion and passing rates that show the proportion and overall number of all students completing courses and the proportion and overall number of students by demographic group, rather than by the total number of courses taken or exams passed, which could mask opportunity gaps by overrepresenting students who complete multiple courses or pass multiple exams. Publicly reporting access and success, like transparency around course-taking patterns, is a signal to stakeholders that earning college credit while in high school is an important indicator of schools and districts preparing all students for postsecondary success.

Providing Incentives for Earning College Credit


Accountability systems should incentivize policies that will accelerate students into and through momentum points as they progress from high school to completion of postsecondary education. Research suggests that the impact of college course taking during high school on college readiness and success varies based on a number of factors, including delivery model, course level and position within a sequence of coursework, and the number of college credits a student accumulates in high school. States should also reward, through their accountability formulas, dual enrollee completion of single college-level, non-developmental courses as well as AP and IB exam achievement that results in college credit for such courses, with increased rewards for “gateway” courses and for courses that are aligned with a program of study. Furthermore, there should be increasing rewards for the amount of transferable college credit individual students accumulate during high school in a postsecondary program of study as research indicates additional benefits when succeeding in more than one dual enrollment course.

States can also use performance goals or progress targets that reflect the expectation that all schools and students, regardless of where they stand relative to the goal of college and career readiness, should make gains. Those schools, groups, and students starting far away should make substantial and sustained improvement toward the goal, while those meeting the goal should progress beyond it.

Valuing AP, IB, and Dual Enrollment Equally in Accountability Systems

On the basis of findings regarding the positive impacts of the predominant models of earning college credit while in high school, all three indicators should be placed on an equal footing within accountability systems. The current research does not support prioritizing one model over the others (e.g., including only AP or IB within a formula or public reports).²⁵ All three models correlate with college readiness and success, and few comparative studies have been done, making drawing conclusions about whether one model is more effective than the others difficult.

Importantly, although we recommend that AP, IB, and dual enrollment be valued equally, states should take care in how different indicators are combined into meta-indicators of college and career readiness so that the information is transparent. For example, if a state wished to have a single college-ready indicator that reflected



the unduplicated rate of high school graduates who had achieved a 3 or above on an AP exam, achieved a 4 or above on an IB exam, or earned college credit through a dual enrollment course, the state should, at a minimum, report the numbers or percentages of students who reach each of these independently (while only counting each student once for accountability purposes, even if they earn college credit in more than one category). In this way, states can reinforce that each indicator is valued and important and help those who use the data determine where progress is and is not being made.

Rewarding Successful AP and IB Exam Performance and Successful Dual Enrollment Course Completion over Course Taking

*While taking college-level courses in high school is associated with a variety of improved college outcomes, researchers have found that AP exam performance, IB exam performance and completion of the IB Diploma Program, and dual enrollment course **completion** with a passing grade may be better indicators of success than course **taking** for all three models.* In the case of AP, most studies show a positive relationship between college readiness and success outcomes and students' passage of end-of-course exams. While passing an AP exam is positively related to success in college, taking AP classes may or may not be related to college success.²⁶

Studies tend to agree that performance on IB exams predicts college achievement, but it is not clear whether students can merely take IB courses and exams or must complete the Diploma Program to experience college readiness and success effects. A 2012 study of IB students found that the positive effects of the IB model applied only to students who completed the Diploma Program.²⁷ A 2011 study found that students who performed well on the IB exams earned higher grades in their first college courses than students who had performed less well on the IB exams.²⁸

For dual enrollees, students who successfully complete courses have improved college readiness and success outcomes when they successfully complete the course. A 2012 longitudinal study found that dual enrollees who successfully completed courses were more likely to attend college, persist in college, and complete an associate degree or higher within six years.²⁹

Incentivizing Success in More Than One College-Level Course

Accountability systems should incentivize completion of more than one credit-bearing course or performances on more than one AP or IB exam along a program of study (see textbox) that are sufficiently strong to earn college-level credit and are transferable to institutions of higher education. There is some evidence that the number of courses individual students complete may have an effect on college outcomes. In one study, dual enrollment students had the greatest gains in degree attainment when they completed two courses (six credits).³⁰ In another study, the case was made for earning at least six college credits via dual enrollment, and it was recommended to earn 12 credits as a "guarantee of momentum" toward postsecondary degree completion.³¹ It stands to reason that passing AP or IB exams with a score that qualifies for college credit would have similar effects on college outcomes. Accountability systems should provide increasing rewards for students who earn more college credit along a program of study via any of these three models while in high school (see textbox on page 18). Additionally, greater transparency and improved reporting will lead to clearer data and research on the value of earning additional college credit while in high school.

BONUS POINTS: PRIORITIZE COLLEGE-LEVEL COURSES ALONG A PROGRAM OF STUDY

Courses that are recognized by colleges as equivalent to first-year foundational courses along a college's program of study should be further rewarded by accountability systems. Research suggests that entering a program of study, defined as "a set of courses and related activities that lead to an attainment of educational objectives," at a college within the first year of enrollment is a key momentum point toward entering a program at all and ultimately reaching educational objectives.³² Furthermore, completion of first-year college-level courses, so-called "gateway" courses required to enter a college-level program of study, has been shown to be a key source of momentum toward completing a program of study in college.³³ There should be greater rewards for high school systems that accelerate students into and through these first-year college-level courses.

Conclusion

Accountability systems are a key policy lever for states to value students' college and career readiness. A key indicator of college readiness is earning college credit while in high school through AP and IB exams or through successful completion of a rigorous, aligned dual enrollment course. Further, the research is clear that there are positive connections between earning college credit in high school and later college success. However, the current landscape indicates that too few states are reporting, valuing, and incentivizing this important indicator in their accountability systems.

Beyond the recommendations detailed above, it is important for states to contextualize the role of accountability systems in terms of their state-specific environment and the alignment of accountability systems with other state systems and policy levers. For example, strategies for incorporating earning college credit while in high school into accountability systems should be carefully designed to ensure that they are aligned with other state systems, such as finance systems, at both the K–12 and higher education levels; statewide performance goals; and other key programmatic initiatives and activities. In addition, accountability systems function as a policy lever; moving this lever may result in the movement of other levers. For example, increasing the value of earning college credit on a school's report card may result in a decrease in the value of other indicators (e.g., the statewide summative assessment). Creating the right balance of incentives across multiple indicators is important, and more states adopting earning college credit as a valued indicator of college readiness, will bring more evidence of how that balance can be struck.

Just as states must know whether students are progressing toward and reaching college readiness benchmarks, they also need to know whether high school students are exceeding those goals by earning college credit while in high school. The research base and state examples provided in this paper point the way toward publicly valuing these indicators and incentivizing schools and districts to provide access to rigorous college-level coursework.

Endnotes

- ¹ Ward, D. & Vargas, J. (2011). *What Gets Measured Gets Done: Adding College-Course Completion to K-12 Accountability Systems*. Jobs for the Future. Accessed February 24, 2015: www.jff.org/sites/default/files/publications/WhatGetsMeasuredGetsDone_PolicyBrief_100311.pdf
- ² For additional information, see the College Board website: <http://professionals.collegeboard.com/k-12/assessment/ap>.
- ³ For additional information, see the International Baccalaureate website: www.ibo.org/en/programmes/diploma-programme.
- ⁴ For more information on states' dual enrollment policies, see: <http://application.jff.org/dualenrollment>.
- ⁵ Struhl, B. & Vargas, J. (2012). *Taking College Courses in High School: A Strategy for College Readiness*. Jobs for the Future. Accessed February 25, 2015: www.jff.org/publications/taking-college-courses-high-school-strategy-college-readiness; Karp, M.M. et al. (2007). *The Postsecondary Achievement of Participants in Dual Enrollment: An Analysis of Student Outcomes in Two States*. National Research Center for Career and Technical Education, University of Minnesota. Accessed February 25, 2015: <http://ccrc.tc.columbia.edu/media/k2/attachments/dual-enrollment-student-outcomes.pdf>; Hughes, K.L. et al. (2012). *Broadening the Benefits of Dual Enrollment*. Community College Research Center. Accessed February 25, 2015: <http://ccrc.tc.columbia.edu/publications/broadening-benefits-dual-enrollment.html#.UHWi807ybTo>; Berger, A. et al. (2014). *Early College, Continued Success: Early College High School Initiative Impact Study*. American Institutes for Research. Accessed February 25, 2015: www.air.org/sites/default/files/downloads/report/AIR%20ECHSI%20Impact%20Study%20Report-%20NSC%20Update%2001-14-14.pdf. These findings corroborate those of a smaller 2009 study of early college high schools by the American Institutes for Research and SRI International, which found that early college high school students had higher mathematics and English language arts scores on state tests, higher on-time high school graduation rates, and higher rates of college enrollment. See Berger, A. et al. (2009). *Six Years and Counting: The ECHSI Matures*. Bill & Melinda Gates Foundation. Accessed February 25, 2015: www.air.org/sites/default/files/downloads/report/ECHSI_Eval_Report_2009_081309_0.pdf; Hughes, K.L. et al. (2012). *Broadening the Benefits of Dual Enrollment*. Community College Research Center. Accessed February 25, 2015: <http://ccrc.tc.columbia.edu/publications/broadening-benefits-dual-enrollment.html#.UHWi807ybTo>; Lynch, R.L. et al. (2007). *Dual Enrollment in High Schools and Technical Colleges of Georgia*. Occupational Research Group, University of Georgia. Accessed February 26, 2015: http://s3.amazonaws.com/zanran_storage/www.coe.uga.edu/ContentPages/17881828.pdf; North, T. & Jacobs, J. (2010). *Dual Credit in Oregon: 2010 Follow-Up*. Office of Institutional Research, Oregon University System. Accessed February 26, 2015: www.ode.state.or.us/teachlearn/subjects/postsecondary/techprep/pdfs/2010-dual-credit-study-6.pdf
- ⁶ Speroni, C. (2011). *Determinants of Students' Success: The Role of Advanced Placement and Dual Enrollment Programs*. National Center for Postsecondary Research. Accessed February 24, 2015: www.postsecondaryresearch.org/i/a/document/19811_Speroni_AP_DE_paper_110311_FINAL.pdf
- ⁷ Bullock, R.J. (2011). *The Impact of the International Baccalaureate Diploma Program on College Readiness at Texas Public High Schools*. University of Mary Hardin — Baylor; Halic, O. (2013). *Postsecondary Education Attainment of IB Diploma Programme Candidates from US High Schools*. IB Global Research. Accessed February 25, 2015: www.ibo.org/globalassets/publications/ib-research/researchbrief-postsec-3eng-3.pdf; Caspary, K. (2011). *Postsecondary Enrollment Patterns of IB Certificate and Diploma Candidates from U.S. High Schools*. International Baccalaureate. Accessed February 25, 2015: www.ibo.org/contentassets/d74675437b4f4ab38312702599a432f1/postsecondaryenrollmentpatternsofibtcertificateanddiplomacandidates-usdomestic-2011.pdf; Coca, V. et al. (2012). *Working to My Potential: The Postsecondary Experiences of CPS Students in the International Baccalaureate Diploma Programme*. The University of Chicago Consortium on Chicago School Research. Accessed February 25, 2015: <https://ccsr.uchicago.edu/publications/working-my-potential-postsecondary-experiences-cps-students-international-baccalaureate>
- ⁸ Karp, M.M. et al. (2007). *The Postsecondary Achievement of Participants in Dual Enrollment: An Analysis of Student Outcomes in Two States*. National Research Center for Career and Technical Education, University of Minnesota. Accessed February 25, 2015: <http://ccrc.tc.columbia.edu/media/k2/attachments/dual-enrollment-student-outcomes.pdf>; Dadgar, M. & Allen, D. (2011). *Thinking Beyond Enrollment: Postsecondary Outcomes of Dual Enrollment in New York City*. Association for Education Finance and Policy Annual Meeting. Accessed February 25, 2015: https://aefpweb.org/sites/default/files/webform/AEFP_DadgarAllen_DualEnrollemnt_20110322.pdf; Young Jr., R.D., Joyner, S.A., & Slate, J.R. "Grade Point Average Differences between Dual and Nondual Credit College Students," *Urban Studies Research* 2013 (2013). Accessed February 25, 2015: <http://dx.doi.org/10.1155/2013/638417>; North, T. & Jacobs, J. (2010). *Dual Credit in Oregon: 2010 Follow-Up*. Office of Institutional Research, Oregon University System. Accessed February 26, 2015: www.ode.state.or.us/teachlearn/subjects/postsecondary/techprep/pdfs/2010-dual-credit-study-6.pdf

- ⁹Radunzel, J., Noble, J., & Wheeler, S. (2014). *Dual-Credit/Dual-Enrollment Coursework and Long-Term College Success in Texas*. ACT. Accessed February 25, 2015: www.act.org/research/policymakers/pdf/DualCreditTexasReport.pdf. See also: Crouse, J.D. & Allen, J. "College Course Grades for Dual Enrollment Students," *Community College Journal of Research and Practice* 38:6 (2014): 494–511; Lynch, R.L. et al. (2007). *Dual Enrollment in High Schools and Technical Colleges of Georgia*. Occupational Research Group, University of Georgia. Accessed February 26, 2015: http://s3.amazonaws.com/zanran_storage/www.coe.uga.edu/ContentPages/17881828.pdf
- ¹⁰Patterson, B.F. & Ewing, M. (2013). *Validating the Use of AP Exam Scores for College Course Placement*. College Board. Accessed February 24, 2015: <http://research.collegeboard.org/publications/validating-use-ap-exam-scores-college-course-placement>. However, a few studies have raised questions about the extent of the impact of AP course taking and whether the success of AP students can be attributed to self-selection. For example, Kristin Klopfenstein and M. Kathleen Thomas have argued that evidence that AP students perform better in the first year of college than non-AP students can be explained by self-selection; students' college performance is not necessarily correlated with AP course taking. See: Klopfenstein, K. & Thomas, M.K. (2006). *The Link Between Advanced Placement Experience and Early College Success*. University of Texas at Dallas Schools Project. Accessed February 24, 2015: www.utdallas.edu/research/tsp-erc/pdf/wp_klopfenstein_2006_link_advanced_placement.pdf; Klopfenstein, K. & Thomas, M.K. (2005). *The Advanced Placement Performance Advantage: Fact or Fiction?* American Economic Association. Accessed February 24, 2015: www.aeaweb.org/assa/2005/0108_1015_0302.pdf. However, the findings of these studies by Klopfenstein and Thomas rely on data from 1999, while the 2013 College Board study reached a different conclusion based on more recent data. However, some more recent research has reached conclusions that parallel those of Klopfenstein and Thomas. A 2013 study by Challenge Success found that, although AP students are generally more successful than non-AP students, this is not solely attributable to the AP program. See: Challenge Success. (2013). *The Advanced Placement Program: Living Up To Its Promise?* Accessed February 25, 2014: www.challengesuccess.org/portals/0/docs/challengesuccess-advancedplacement-wp.pdf
- ¹¹IB Global Policy and Research Department. (2010). *Academic Performance of IB Students Entering the University of California System from 2000-2002*. Accessed February 25, 2015: www.ibo.org/globalassets/publications/ib-research/dp/academicperformanceofibstudentsenteringtheuniversityofcalifornia2010.pdf
- ¹²Struhl, B. & Vargas, J. (2012). *Taking College Courses in High School: A Strategy for College Readiness*. Accessed February 25, 2015: www.jff.org/publications/taking-college-courses-high-school-strategy-college-readiness. See also: Karp, M.M. et al. (2007). *The Postsecondary Achievement of Participants in Dual Enrollment: An Analysis of Student Outcomes in Two States*. National Research Center for Career and Technical Education, University of Minnesota. Accessed February 25, 2015: <http://ccrc.tc.columbia.edu/media/k2/attachments/dual-enrollment-student-outcomes.pdf>; Swanson, J.L. (2008). *An Analysis of the Impact of High School Dual Enrollment Course Participation on Post-Secondary Academic Success, Persistence and Degree Completion*. The University of Iowa. Accessed February 26, 2015: <http://nacep.org/wp-content/uploads/2010/02/Dissertation-2008-Joni-L.-Swanson.pdf>; Berger, A. et al. (2014). *Early College, Continued Success: Early College High School Initiative Impact Study*. American Institutes for Research. Accessed February 25, 2015: www.air.org/sites/default/files/downloads/report/AIR%20ECHSI%20Impact%20Study%20Report-%20NSC%20Update%2001-14-14.pdf; Hughes, K.L. et al. (2012). *Broadening the Benefits of Dual Enrollment*. Community College Research Center. Accessed February 25, 2015: <http://ccrc.tc.columbia.edu/publications/broadening-benefits-dual-enrollment.html#UHWi807ybTo>; North, T. & Jacobs, J. (2010). *Dual Credit in Oregon: 2010 Follow-Up*. Office of Institutional Research, Oregon University System. Accessed February 26, 2015: www.ode.state.or.us/teachlearn/subjects/postsecondary/techprep/pdfs/2010-dual-credit-study-6.pdf
- ¹³Dougherty, C., Mellor, L., & Jian, S. (2006). *The Relationship between Advanced Placement and College Graduation*. National Center for Education Accountability. Accessed February 25, 2015: <http://broadprize.org/symposium/2006BroadSymposium-RelationshipBetweenAPandCollegeGrad.pdf>. A 2013 study of a college-preparatory program that provided payments to 11th and 12th grade students and their teachers for passing scores on AP exams found that students in the program passed more exams, were more likely to persist in college, and even earned higher wages. See: Jackson, C.K. "Do College-Preparatory Programs Improve Long-Term Outcomes?" *Economic Inquiry* 52:1 (January 2014): 72–99.
- ¹⁴Klopfenstein, K. (2010). *The Effect of AP Participation on Time to College Graduation: Technical Report*. University of Texas at Dallas Schools Project. Accessed February 24, 2015: www.utdallas.edu/research/tsp-erc/pdf/bk_klopfenstein_grad_time_technical_report_020810.pdf
- ¹⁵Coca, V. et al. (2012). *Working to My Potential: The Postsecondary Experiences of CPS Students in the International Baccalaureate Diploma Programme*. The University of Chicago Consortium on Chicago School Research. Accessed February 25, 2015: <https://ccsr.uchicago.edu/publications/working-my-potential-postsecondary-experiences-cps-students-international-baccalaureate/>; Caspary, K. (2011). *Postsecondary Enrollment Patterns of IB Certificate and Diploma Candidates from U.S. High Schools*. International Baccalaureate. Accessed February 25, 2015: www.ibo.org/contentassets/d74675437b4f4ab38312702599a432f1/postsecondaryenrollmentpatternsofibtcertificateanddiplomacandidates-usdomestic-2011.pdf; Halic, O. (2013). *Postsecondary Education Attainment of IB Diploma Programme Candidates from US High Schools*. IB Global Research. Accessed February 25, 2015: www.ibo.org/globalassets/publications/ib-research/researchbrief-postsec-3eng-3.pdf

- ¹⁶For further information on state policies on dual enrollment, including exemplars, see: <http://application.jff.org/dualenrollment/index.php>.
- ¹⁷Klopfenstein, K. & Thomas, M.K. (2005). *The Advanced Placement Performance Advantage: Fact or Fiction?* American Economic Association. Accessed February 24, 2015: www.aeaweb.org/assa/2005/0108_1015_0302.pdf. See also: Jackson, C.K. "Do College-Preparatory Programs Improve Long-Term Outcomes?" *Economic Inquiry* 52:1 (January 2014): 72–99.
- ¹⁸An, B.P. "The Impact of Dual Enrollment on College Degree Attainment: Do Low-SES Students Benefit?" *Educational Evaluation and Policy Analysis* 35:1 (March 2013): 57–75.
- ¹⁹Jobs for the Future. (2014). *Early College High Schools Get Results*. Accessed February 25, 2015: www.jff.org/sites/default/files/ECHS_get_results_040113.pdf
- ²⁰See www.achieve.org/policy-brief-transforming-public-reporting-ensure-college-and-career-readiness-all.
- ²¹See www.achieve.org/ClosingtheExpectationsGap2010 and www.achieve.org/ClosingtheExpectationsGap2012.
- ²²Ibid.
- ²³Source: <http://www.gadoe.org/Curriculum-Instruction-and-Assessment/Accountability/Documents/CCRPI%20Indicator%20Calculation%20Guidance%2012.04.14.xls>.
- ²⁴Source: [https://www.louisianabelieves.com/docs/default-source/course-choice/2014-high-school-planning-guidebook-\(web\).pdf?sfvrsn=16](https://www.louisianabelieves.com/docs/default-source/course-choice/2014-high-school-planning-guidebook-(web).pdf?sfvrsn=16).
- ²⁵Studies that have compared models focus on AP and dual enrollment and indicate that their effects vary slightly but are consistently positive. A 2011 study by Cecelia Speroni compared AP and dual enrollment programs and found that both were associated with positive outcomes, but these outcomes varied depending on the measure of success being examined. While dual enrollment students were more likely than AP students to enroll in college after high school, AP students were more likely to enroll at four-year institutions. Despite this initial difference in enrollment patterns, however, Speroni found that the difference in bachelor's degree attainment was not statistically significant. Similarly, a 2014 report by the College Board noted consistently positive, though differing, outcomes for AP and dual enrollees. Students who completed college courses as dual enrollees tended to graduate from college in fewer semesters than students in other groups, while high performance on AP exams was positively related to strong college performance, although it should be noted that the AP students in the study also had higher average state test scores in math and reading and the groups were not randomly assigned. In a 2010 study, Kristin Klopfenstein found that dual enrollees were more likely than AP students to graduate from college in four or five years.
- ²⁶Hoffman, N. & Vargas, J. (October 2008). "Guidance in Talking about Accelerated Learning Options or College-Level Work in High School." Jobs for the Future.
- ²⁷Coca, V. et al. (2012). *Working to My Potential: The Postsecondary Experiences of CPS Students in the International Baccalaureate Diploma Programme*. The University of Chicago Consortium on Chicago School Research. Accessed February 25, 2015: <https://ccsr.uchicago.edu/publications/working-my-potential-postsecondary-experiences-cps-students-international-baccalaureate>
- ²⁸Caspary, K. (2011). *First College Courses Taken by Florida IB Students*. International Baccalaureate. Accessed February 25, 2015: www.ibo.org/contentassets/d74675437b4f4ab38312702599a432f1/firstcollegecoursestakenbyfloridaibstudents-2011.pdf
- ²⁹Struhl, B. & Vargas, J. (2012). *Taking College Courses in High School: A Strategy for College Readiness*. Jobs for the Future. Accessed February 25, 2015: www.jff.org/publications/taking-college-courses-high-school-strategy-college-readiness
- ³⁰An, B.P. "The Impact of Dual Enrollment on College Degree Attainment: Do Low-SES Students Benefit?" *Educational Evaluation and Policy Analysis* 35:1 (March 2013): 57–75.
- ³¹Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion from High School through College*. Washington, D.C.: U.S. Department of Education.
- ³²Jenkins, D. & Cho, S. (2012). *Get With the Program: Accelerating Community College Students' Entry into and Completion of Programs of Study*. Community College Research Center. Accessed March 12, 2015: <http://ccrc.tc.columbia.edu/media/k2/attachments/accelerating-student-entry-completion.pdf>. For more information, see the Completion by Design website: <http://completionbydesign.org/our-approach/step-3-diagnose-the-issues/pathway-analyses-toolkit/pathway-analyses/lossmomentum-framework>.
- ³³For more information on the Loss/Momentum Framework, see the Completion by Design website: <http://completionbydesign.org/our-approach/step-3-diagnose-the-issues/pathway-analyses-toolkit/pathway-analyses/lossmomentum-framework>.



Acknowledgments

Achieve and Jobs for the Future would like to thank the individuals and organizations who contributed to this report. We would like to thank Joel Vargas, Vice President, School and Learning Designs at Jobs for the Future; Charlotte Cahill, Senior Program Manager at Jobs for the Future; Daniel Trujillo, Senior Program Manager at Jobs for the Future; Jacob Mishook, Associate Director, Assessment and Accountability at Achieve; and Marie O'Hara, Associate Director, State Policy and Implementation Support at Achieve, for their leadership in the research and writing of the report. We would also like to thank Cory Curl, Senior Fellow, Assessment and Accountability at Achieve and Alissa Peltzman, Vice President of State Policy and Implementation Support at Achieve for providing leadership and guidance in shaping the overall vision for the report. We would also like to thank Ryan Reyna, Director, Office of Accountability and Data Management, Delaware Department of Education and Christopher Woolard, Director of Accountability, Ohio Department of Education for providing helpful feedback on the draft. We would like to thank the team at KSA-Plus Communications, Inc., for their editorial contributions and Rings Leighton for their design work. Finally, we would like to express gratitude to the Bill & Melinda Gates Foundation for providing generous funding for this report.

Michael Cohen, President, Achieve

Gina Burkhardt, President and CEO, Jobs for the Future



Achieve

1400 16th Street NW, Suite 510
Washington, DC 20036

202.419.1540

www.achieve.org



JOBS FOR THE FUTURE

88 Broad Street, 8th Floor
Boston, MA 02110

617.728.4446

www.jff.org