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Limited Access to AP Courses for Students in Smaller and More Isolated Rural School Districts

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The call for college and career readiness pervades state and federal policy initiatives, reflecting a growing sense that an increasing number of high school graduates are underprepared for the demands of postsecondary education. Despite the push for high, common standards, high school students engage in very different curricula in terms of both content and rigor. Advanced Placement (AP) coursework offers high school students more intense academic training, consisting of a series of college-level courses and assessments. Completing AP coursework may give students valuable experience, and college credit is often earned through success on end-of-year examinations.[1] This brief assesses trends in access to, enrollment in, and success in AP coursework (see Box 1 on page 2) in relation to school district poverty, racial composition, and urbanicity (see Box 2 on page 4). It uses data merged from the 2011–2012 Civil Rights Data Collection (CRDC), the 2012 Small Area Income and Poverty Estimates (SAIPE), and the 2010 Decennial U.S. Census. These data reflect AP access, enrollment, and success only at the district level. Consequently, it is not possible to draw conclusions about individual students or school-level trends from this analysis. Note that when examining AP enrollment and success, we consider only those districts that offer some access to AP coursework.

KEY FINDINGS

47.2% Nearly one-half (47.2 percent) of rural districts have no secondary students enrolled in Advanced Placement (AP) courses, compared with only 20.1 percent of town, 5.4 percent of suburban, and 2.6 percent of urban districts.

-10X Remote rural districts with small populations are nearly 10 times less likely to offer access to AP courses than are larger rural districts on the fringe of urbanized areas.

↑ AP success rates are highest in suburban districts; success is higher than in town and rural districts even when affluence is accounted for.

\+ Students in more affluent districts have higher success rates than those in less affluent districts, regardless of place type.

Fewer Rural Districts Have AP Access

Whether or not a district offers AP courses is one indicator of equality of educational opportunity. In districts without AP access, even the most gifted students would not likely have the opportunity to earn college credit in high school.[2] We find that rural students have considerably less access to AP courses than their peers in more urban areas: 47.2 percent of rural school districts have no students enrolled in AP courses, compared with only 20.1 percent, 5.4 percent, and 2.6 percent of town, suburban, and urban districts, respectively.

In addition, access to AP courses among rural districts varies considerably according to the size and relative remoteness of the district. We find less AP access in smaller districts and in districts located farther from urbanized areas. Table 1 shows AP access rates in fringe (closest to urbanized areas), distant,

Box 1. Definitions of Access to AP, AP Enrollment, and AP Success

AP Access: A school district provides access to AP coursework if at least one secondary student (Grades 9–12) is enrolled in at least one AP course anywhere in the district.[3]

AP Enrollment: The percentage of secondary students who are enrolled in at least one AP course. This brief examines enrollment trends for school districts with AP access, only.

AP Success: The percentage of secondary students enrolled in at least one AP course who take and pass (score of 3 or higher) at least one end-of-year AP exam. This brief examines trends in AP success for school districts with AP access, only.

and remote (farthest from urbanized area) rural districts, sorted by larger and smaller populations.[4] Gaps in AP access are evident when comparing larger and smaller population districts within each gradation of rurality. Remoteness is also uniquely related to AP access. For example, large, remote rural districts have approximately the same AP access as do much smaller, fringe rural districts.

Even when examining only those districts with some access to AP courses, enrollment in AP across lines of urbanicity is uneven. The percentage of students enrolled in at least one AP course in such urban and suburban districts is approximately double the percentage of such students in town and rural districts.[5] Therefore, even in districts that have AP access—those that have found a way to offer AP to at least one student, thus making it easier for more students to take AP courses—disparities in enrollments still exist. Thus, rural students are far less likely to take AP coursework than their urban and suburban peers.

Suburban and Affluent Districts Have Higher Rates of AP Success

Suburban districts exhibit the highest rates of AP success. In suburban districts, the average percentage of AP-enrolled students who have passed at least one AP exam is 45.9 percent, compared with 36.4 percent, 32.3 percent, and 32.2 percent for students in urban, town, and rural districts, respectively. Such disparity in success is even greater across lines of poverty, as school districts in the most affluent (top) quartile of the United States exhibit an average success rate (49.3 percent) more than double that of districts in the poorest (bottom) quartile (24.3 percent).[6] Figure 1 illustrates the interactions between urbanicity, poverty, and rates of AP success in school districts.

Although in poorer districts there is little difference in success rates by urbanicity, in affluent districts, success rates vary greatly. In districts in the most affluent quartile, urban and suburban districts average 60.7 percent and 59.0 percent success rates, respectively, compared with only 44.7 percent and 44.9 percent in town and rural districts, respectively. In short, affluence can counteract geography. More affluent town and rural districts have higher rates of success than do poor urban or suburban districts.

TABLE 1. ACCESS TO AP COURSES IN RURAL DISTRICTS, BY REMOTENESS AND SECONDARY STUDENT POPULATION

	FRINGE*		DISTANT		REMOTE	
	LARGER POPULATION	SMALLER POPULATION	LARGER POPULATION	SMALLER POPULATION	LARGER POPULATION	SMALLER POPULATION
AVERAGE STUDENT POPULATION	1556	276	985	192	715	123
NUMBER OF DISTRICTS	888	503	548	2160	106	1018
PERCENT OF DISTRICTS WITHOUT AP ACCESS	7.9	37.6	16.2	57.0	33.0	69.7

Note: *Rural fringe districts are closest to urbanized areas, whereas remote rural districts are located farthest away.

Sources: 2011–2012 Civil Rights Data Collection, 2012 Small Area Income and Poverty Estimates, and 2010 Decennial U.S. Census

FIGURE 1. AP SUCCESS FOR DISTRICTS IN THE MOST AND LEAST AFFLUENT QUARTILES, BY URBANICITY

Sources: 2011–2012 Civil Rights Data Collection, 2012 Small Area Income and Poverty Estimates, and 2010 Decennial U.S. Census

Discussion

We find that rural school districts are much less likely to offer AP courses, and overall AP enrollment is lower than in urban districts.[7] These findings have worrisome implications regarding equal access to educational opportunity, as some studies have documented the academic benefits of simply engaging in such rigorous coursework.[8] Moreover, students may face a financial burden by not taking AP coursework, both by not earning college credit that could enable them to graduate sooner, and by being more likely to pay for additional remedial coursework when beginning college. The disparities in AP access follow a clear trend, with smaller and more remote rural districts exhibiting low rates of AP access. In addition, because town and rural districts have both lower AP enrollment and success rates, the probability that a rural student receives AP credit is likely even lower than these statistics on AP success alone would indicate.

Several explanations are possible for these disparities. Rural districts may find it difficult to offer rigorous coursework because of insufficient numbers of capable students, lack of appropriate teacher staffing, or other logistical concerns owing to small, isolated populations. Regardless of the causes, the result is that fewer rural students leave high school having experienced college-level coursework or having earned college credit. The expansion of virtual AP courses, whereby students remotely engage in AP classes, could open access for high-achieving rural students. However, many critics believe that online learning is not a replacement for traditional face-to-face classroom settings where students can engage more readily and deeply with their instructor and peers. Further, the expansion of virtual AP courses is not likely to address lower rates of success. Overall, a lack of access to rigorous coursework continues to place rural students at a disadvantage compared with their urban and suburban peers.[9]

This brief also finds that suburban and more affluent districts have higher rates of AP success. This is unsurprising, as students in these districts are generally more academically prepared for rigorous coursework. However, the observed disparities by urbanicity are more intriguing. In particular, affluent towns and rural districts have lower rates of success than affluent suburban and urban districts. One possible explanation is that urban and suburban AP students generally take more AP courses and, therefore, have more opportunities to

be successful in at least one exam. Alternatively, affluent urban and suburban schools might have better developed AP cultures or more selective requirements for enrolling in AP courses, leading to higher rates of success. Building such a culture requires programs providing teachers with AP-specific professional development, or covering the AP exam costs for students, and this likely requires a critical mass of interested and prepared students. It is also likely that school size continues to affect these findings, because urban and suburban districts are generally larger and more able to support the development of advanced courses. It is important that educators, administrators, and policy makers continue to look for ways to boost success in college-level coursework, perhaps through targeted teacher professional development, financial support for low-income students, and a re-examination of student expectations.

Data

The data in this brief are from three sources: the 2011–2012 CRDC, the 2012 SAIPE, and the 2010 U.S. Census. The CRDC is a mandatory data collection that provides information on the rates of AP enrollment and success among all schools in the United States. SAIPE provides information on the number of students living in poverty in a district. The U.S. Census provides information on urbanicity. We aggregated CRDC data to the district level, and we then merged them with SAIPE and census data using the National Center for Education Statistics district ID code. Any district not found in all three data sets, or any district that contained ten or fewer secondary students, was dropped. This resulted in 11,111 school districts being examined for access to AP coursework. Those districts without AP access were dropped before examining AP enrollment and success, resulting in 7,190 districts remaining for these analyses.

Box 2. Definitions of Urbanicity Categories

City: Territory inside an urbanized area and inside a principal city.

Suburb: Territory outside a principal city and inside an urbanized area.

Town: Territory inside an urban cluster but outside an urbanized area.

Rural: Territory outside an urban cluster or urbanized area.

Endnotes

1. Policies differ considerably among colleges regarding how credit may be earned through AP coursework. For example, passing an AP exam corresponds to a score of 3 or higher, although some colleges do not offer course credit for scores of 3.

2. AP coursework is only one means, albeit the most common, by which students can engage in college-level curricula and potentially earn college credit.

3. A district could be identified as having no AP access if an AP course is offered in which no students enroll. This is likely uncommon but reflects issues in AP access. It is important to note that these AP access statistics cannot address differences between individual schools within AP-offering districts that may not have any students in AP courses. This is likely the case in some larger districts with different student compositions among schools. Similarly, within-school disparities are also unobservable when using a district level of analysis. This likely represents an important source of variation as well, caused by numerous factors such as student preparation, tracking polices, and AP entry requirements.

4. For complete definitions, please visit http://nces.ed.gov/ccd/rural_locales.asp. A larger-population district is defined as having a higher-than-average rural secondary student population (449.2 students); smaller-population districts are those with less than this average.

5. City and suburban districts with AP access enroll 17.4 and 18.4 percent of their students, respectively, in at least one AP course. These figures are 10.6 percent and 7.1 percent, respectively, for rural districts.

6. These figures are the percentage of students who pass at least one examination. Students included are only those who enroll in an AP course, not the entire population of secondary students.

7. The relatively high rates of AP access and enrollment in larger suburban and particularly urban districts likely obscure issues of access within larger districts, with more affluent schools increasing the overall district rate.

8. One study by the College Board found that taking an AP course increased the chances for a college student to finish college in four years: L. Keng and B. G. Dodd, "A Comparison of College Performances of AP and Non-AP Student Groups in 10 Subject Areas" (Princeton, NJ: The College Board, 2008). At-risk students in particular may benefit from such participation, as one study found that low-income, low-achieving students who took at least one AP course were 17 percent more likely to return for a second year of college than were low-income, low-achieving students who did not take any AP courses, even after controlling for several relevant student background characteristics: K. Klepfer and J. Hull, "High School Rigor and Good Advice: Setting Up Students to Succeed" (Alexandria, VA: The Center for Public Education, 2012). Taking AP courses in high school may also affect the type of college courses a student will take, as one study found that completing only one AP course increases the chance that a student will take courses in that subject area in college: R. Morgan and B. Maneckshana, "AP Students in College: An Investigation of Their Course-Taking Patterns and College Majors," ETS statistical report No. 2000−09 (Princeton, NJ: Educational Testing Service, 2000). However, others have found possible detrimental effects for substantially underprepared students who enroll in AP coursework (see P. M. Sadler & R. H. Tai "Advanced Placement Exam Scores as a Predictor of Performance in Introductory College Biology, Chemistry and Physics Courses," *Science Educator*, *16*(2), 1–19, 2007). For a more comprehensive discussion of the merits and challenges of AP, see P. M. Sadler et al., *AP: A Critical Examination of the Advanced Placement Program* (Cambridge, MA: Harvard Education Press, 2010).

9. Rural students have also been shown to have less access to advanced mathematics courses. See S. Graham, "Students in Rural Schools Have Limited Access to Advanced Mathematics Courses," Issue Brief No. 7 (Durham, NH: Carsey Institute, University of New Hampshire, 2009).

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