

# Understanding Access to and Participation in Dual Enrollment by Locale and Income Level

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# Understanding Access to and Participation in Dual Enrollment by Locale and Income Level

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By providing students with an opportunity to take college courses and earn college credits while in high school, dual enrollment programs effectively increase college access, enrollment, and degree attainment. Such programs might be particularly beneficial for high school students who might be less likely to go to college, including students from rural areas and low-income households. Given the comparatively rural geography of the Regional Educational Laboratory (REL) Central region, stakeholders need a comprehensive resource for understanding dual enrollment access and participation in their states in order to support the identification of strategies to expand opportunities for college and career preparation. This report presents information on patterns in dual enrollment access and participation for the 2017/18 school year in the REL Central states (Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, and Wyoming) and the region as a whole and compares these state and regional patterns with national patterns. The report also reveals how dual enrollment access and participation varied with school characteristics, including school locale (city, suburban, town, or rural) and percentage of students from low-income households. The study found that dual enrollment access and participation were higher in the REL Central region than nationally. Additionally, students in rural and city locales tended to have lower dual enrollment access than did their peers in town and suburban locales. In contrast, dual enrollment participation was generally higher for students in rural and town locales than for their peers in city locales. In some states, however, both dual enrollment access and participation were higher in rural and town schools than in city schools. The study also found that in the REL Central region and nationally, schools serving higher percentages of students from low-income households had higher dual enrollment access and participation than did schools serving lower percentages of students from low-income households. Education leaders can use the study findings to advance progress toward state and district postsecondary readiness goals and to inform the development of supports or incentives related to dual enrollment.

## Why this study?

Education leaders have expressed concern that rural students and students from low-income households might lack important opportunities for improving college readiness that are available to their peers. Although achievement trends and high school graduation rates are similar for rural students and their peers in nonrural locales (Aud et al., 2013; Snyder & Dillow, 2012), rural students attend college at a lower rate (62 percent) than nonrural students do (67 percent; National Student Clearinghouse Research Center, 2016). This difference suggests that rural students might face unique hurdles in getting to college. Partly for this reason, the National Rural Education Association (n.d.) has identified “college and career readiness/preparation for postsecondary experiences” as one of its top research priorities. And disparities in education outcomes between students from low-income households and students from higher income households are well documented, and achievement gaps along income lines have been widening (Reardon, 2013). Education leaders throughout the country remain focused on improving outcomes for students from low-income households.

Providing opportunities for students to participate in college-level courses and earn college credits through dual enrollment or Advanced Placement courses is one well documented strategy for improving college readiness and success (Education Commission of the States, 2016, 2019). Dual enrollment can offer advantages over other forms of advanced coursework, such as Advanced Placement

For additional information, including technical methods, access the report appendix at <https://go.usa.gov/xHwHn>.

courses, by providing a variety of options for when and where courses are offered and a more seamless transition from high school to college. Dual enrollment courses can be taken on a high school campus, on a college campus, online, or through some combination of these settings (Arnold et al., 2017). Dual enrollment often offers a broader variety of advanced coursework than does Advanced Placement (Borden et al., 2013), and it can help students develop social capital by becoming familiar with the nonacademic aspects of college as well as the academic ones (Bailey et al., 2002). There is also evidence that dual enrollment programs have a positive effect on student high school academic outcomes, such as attendance and achievement, and student postsecondary outcomes, such as college readiness and degree attainment (What Works Clearinghouse, 2017). Some studies have found that students who participate in dual enrollment programs have a higher probability of attaining a postsecondary degree (An, 2013; Edmunds et al., 2017). Accordingly, some state education agencies have identified dual enrollment access as a strategic priority (Education Commission of the States, 2016; Nebraska Department of Education & Nebraska Coordinating Commission for Postsecondary Education, 2019).

There are reasons to believe that dual enrollment might be especially important for rural students and students from low-income households. For example, dual enrollment programs can help rural students overcome unique hurdles (such as living farther away from four-year colleges) and assimilate into the college environment. Rural high schools can form partnerships with nearby postsecondary institutions, establish virtual dual enrollment programs, or become early college high schools, where students can take college courses. These are opportunities for rural students to experience college-level coursework, which could ease their transition to higher education. Dual enrollment programs might also reduce the financial burden of pursuing a postsecondary degree for students from low-income households, by enabling them to earn college credits that are free, subsidized, or simply less expensive than the typical cost at a four-year college. Indeed, research has shown the impact of dual enrollment on postsecondary degree attainment to be greater for students from low-income households than for students from high-income households (Berger et al., 2013).

The Regional Educational Laboratory (REL) Central region is more rural than the national average (table 1) and therefore an appropriate place to examine issues of dual enrollment access and participation across locales. All states in the region except Colorado are above the national average in both the percentage of schools that are rural and the percentage of students who attend rural schools (based on definitions by the National Center for Education Statistics, n.d.). Thus, there is sufficient representation of rural schools and students in the region to provide a good context to study variation in dual enrollment access and participation across locales.

**Table 1. Percentage of K–12 schools and students that are rural in the Regional Educational Laboratory Central states and region and nationally, 2017/18**

Geographic area	Schools	Students
Colorado	24	14
Kansas	46	29
Missouri	40	27
Nebraska	50	28
North Dakota	67	43
South Dakota	74	42
Wyoming	51	31
REL Central region	44	25
National average	28	19

REL is Regional Educational Laboratory.

Source: Authors’ analysis of data from the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>) for the 2017/18 school year.

This report provides detailed results from analyses of dual enrollment across the seven states in the REL Central region, using data on students and schools from the Civil Rights Data Collection (CRDC) for 2017/18 (the most recent data available at the time the report was written) and the National Center for Education Statistics. To examine how dual enrollment access and participation varied across and within states for rural students and students from low-income households, the study team analyzed trends by school locale and by percentage of students from low-income households (see box 1 for definitions of key terms). The findings reveal the types of schools that are more likely to provide dual enrollment, the types of schools with higher rates of students participating in dual enrollment, and any disparities in dual enrollment access and participation. The study team examined both the percentages of schools providing dual enrollment and the percentages of students attending schools that provided dual enrollment to determine whether any disparities (or their absence) were consistent across school and student levels. Using these two measures of access allowed patterns in access at the school level to be distinguished from those at the student level.

The study findings can inform state policies and practices related to college and career readiness in general and dual enrollment in particular. Education leaders in the REL Central region can use the findings to develop a deeper understanding of opportunities for dual enrollment access and participation for students from rural locales and students from low-income households. This information can help state and local education agencies target strategies to expand access to or broaden participation in dual enrollment programs. For example, the findings could inform the development of supports or incentives for dual enrollment—perhaps by helping districts establish dual enrollment programs or by providing subsidies to students to offset costs associated with dual enrollment.

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### Box 1. Key terms

**Dual enrollment.** Any program that allows students currently enrolled in high school to take college courses and earn college credits.

**Dual enrollment participation.** The percentage of grade 11 and 12 students at a school who participated in at least one dual enrollment course.

**School enrollment quartile.** Schools were assigned to quartiles based on student enrollment. The first quartile comprised the 25 percent of high schools with the highest enrollments, and the fourth quartile comprised the 25 percent of high schools with the lowest enrollments. (See appendix A for details.)

**School income quartile.** Schools were assigned to income quartiles based on their percentage of students eligible for the national school lunch program. Students from households with incomes at or below 185 percent of the federal poverty level are eligible for the program. The first quartile comprised schools with the lowest percentages of eligible students, and the fourth quartile comprised schools with the highest percentages of eligible students. (See appendix A for details.)

**School-level dual enrollment access.** A school that provided at least one dual enrollment course in 2017/18.

**School locale.** School locale was based on the National Center for Education Statistics locale framework, which relies on a school's distance from population centers (<https://nces.ed.gov/ccd/elsi/>). A school is designated as city if it is located within an urbanized area and a principal city, as suburban if it is located outside a principal city and inside an urbanized area, as town if it is located inside an urban cluster, or as rural if it is located away from an urbanized area and an urban cluster.

**Student-level dual enrollment access.** Students attending a school that provided at least one dual enrollment course in 2017/18.

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## Research questions

The study team used publicly available data for the 2017/18 school year to address the following research questions related to dual enrollment in REL Central states, the REL Central region, and the country:

1. What are the rates of dual enrollment access and participation?
2. Do rates of dual enrollment access and dual enrollment participation vary by school locale or by percentage of students from low-income households?

The data sources, sample, and methods are summarized in box 2 and discussed in detail in appendix A.

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### Box 2. Data, sample, and methods

The study team used publicly available, universal, school-level data for the 2017/18 school year. Data on dual enrollment access and participation are from the Civil Rights Data Collection (CRDC; <https://ocrdata.ed.gov/Home>)<sup>1</sup> and data on school locale and percentages of students eligible for the national school lunch program (a proxy for low-income status) are from the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>). The study team examined data only for schools that enrolled grade 11 and 12 students, were not juvenile justice facilities, and were categorized as “regular.” Regular schools are public schools that do not focus primarily on special education, vocational/technical education, alternative education, or any particular theme associated with magnet/special program emphasis schools (National Center for Education Statistics, n.d.). The dataset was missing very few data elements for this universe of schools: only 0.4 percent of values or lower were missing for all variables. The resulting dataset included 2,001 schools in the Regional Educational Laboratory (REL) Central region and 18,624 schools in the United States. (More detail on the sample is in appendix A.)

The study team calculated rates of dual enrollment access and participation for each state in the REL Central region, for the region, and for the country. Two measures were used to determine dual enrollment access: the percentage of schools providing at least one dual enrollment course and the percentage of students attending schools that provided at least one dual enrollment course. Dual enrollment participation was defined as the percentage of students who participated in at least one dual enrollment course. Dual enrollment access and participation were calculated by school locale and school income quartile for each REL Central state, the region, and the country. Rates that were within 5 percentage points of each other are reported as similar or as having a small difference. School enrollment quartiles were included as a moderating variable to contextualize how school size might relate to findings across locales and percentages of students from low-income households. (See appendix A for more detail on study data, sample, and methods, including school enrollment data related to school locale and percentages of students from low-income households in the REL Central region.)

The study data posed several limitations. First, CRDC data do not distinguish among types of dual enrollment programs (for example, vocational or academic) or describe the breadth of dual enrollment offerings within a school (for example, the number and types of courses). Additionally, the data could not be used to examine how program quality or student success in dual enrollment programs might vary by school and student characteristics. The most recently available CRDC data were for the 2017/18 school year, so the study could not examine a more recent period.

### Note

1. The rates of dual enrollment access and participation presented in this report might differ from rates presented in state-level reports. CRDC and state administrative data can vary because the CRDC required districts to report on data as of October 1, 2017; while some states use retrospective administrative data that cover the entire school year rather than only as of October 1, 2017. Also, because state agencies use a wide range of terminology to describe dual enrollment, there might have been some confusion in how to report participation rates to the CRDC.

## Findings

This section reports patterns in dual enrollment access and participation for the 2017/18 school year for the REL Central states, the region, and the country.

### *A slightly higher percentage of high schools in the Regional Educational Laboratory Central region than of high schools nationally provided dual enrollment*

In the 2017/18 school year 82 percent of high schools in the REL Central region provided at least one dual enrollment course compared with 78 percent nationally (figure 1). Among REL Central states the percentage providing at least one dual enrollment course ranged from 75 percent in Colorado to 88 percent in Nebraska.

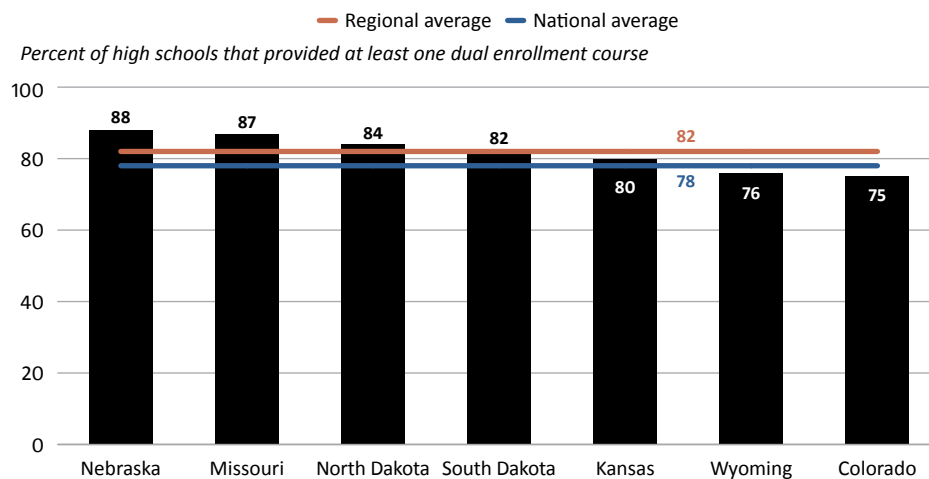
### *Dual enrollment access was higher at the student level than at the school level*

Approximately 89 percent of grade 11 and 12 students in the REL Central region attended high schools that provided at least one dual enrollment course (figure 2), while 82 percent of schools in the region provided at least one dual enrollment course (see figure 1). Across states in the region the percentage of grade 11 and 12 students attending high schools that provided at least one dual enrollment course ranged from 86 percent in Kansas to 96 percent in Nebraska, while the percentage of schools providing dual enrollment ranged from 75 percent in Colorado to 88 percent in Nebraska. The gap was widest in Wyoming, where 76 percent of high schools provided at least one dual enrollment course, while 90 percent of grade 11 and 12 students attended a school that provided at least one dual enrollment course. The difference between school-level and student-level access suggests that larger schools might be more likely to provide dual enrollment.

### *Dual enrollment participation was higher in the Regional Educational Laboratory Central region than nationally but varied across states*

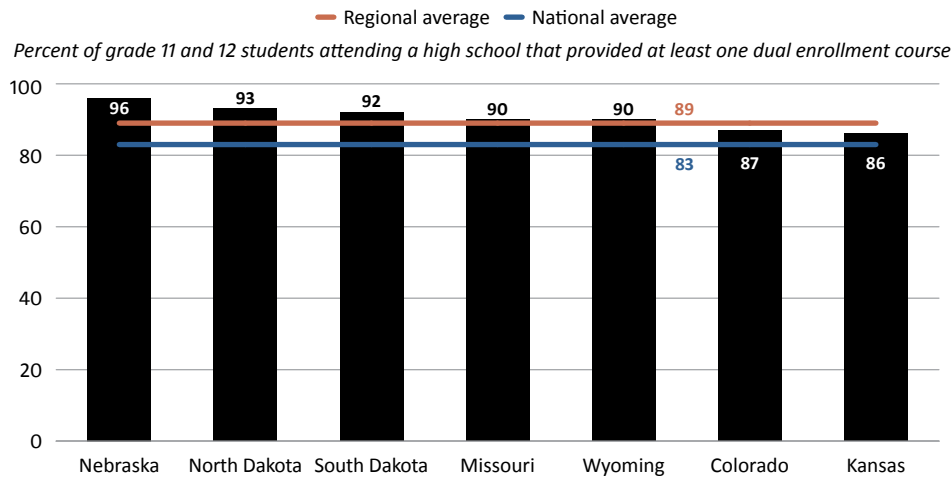
In the 2017/18 school year 27 percent of grade 11 and 12 students in the REL Central region participated in at least one dual enrollment course, which was higher than the 21 percent average for the country (figure 3). However, participation rates varied across states in the region. Dual enrollment participation rates in Wyoming (37 percent) and Kansas (35 percent) were nearly twice the rate in Colorado (19 percent). Also noteworthy is the lack of a

**Figure 1. The percentage of high schools that provided at least one dual enrollment course was higher for the Regional Educational Laboratory Central region than the national average, 2017/18**



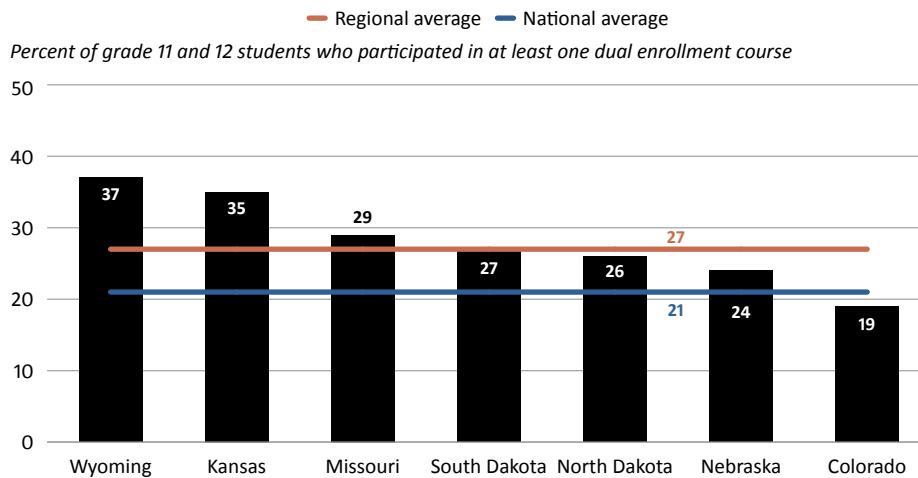
Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) for the 2017/18 school year.

**Figure 2. The percentage of grade 11 and 12 students with access to at least one dual enrollment course was higher for the Regional Educational Laboratory Central region and for most states in the region than the national average, 2017/18**



Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) for the 2017/18 school year.

**Figure 3. Grade 11 and 12 students in the Regional Educational Laboratory Central region were more likely than students nationally to participate in dual enrollment, 2017/18**



Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) for the 2017/18 school year.

strong relationship between dual enrollment access and participation. For instance, none of the three states with the highest student-level dual enrollment access (Nebraska, North Dakota, and South Dakota; see figure 2) was in the top three for dual enrollment participation (see figure 3).

***Student-level dual enrollment access tended to be lower in rural and city locales than in town and suburban locales, while student participation tended to be higher in rural, town, and suburban locales than in city locales***

In Colorado, Nebraska, North Dakota, South Dakota, and Wyoming, rural locales had the lowest percentage of students attending high schools that provided dual enrollment (table 2). In all these states except North Dakota, rural locales also had the lowest percentage of high schools providing dual enrollment. In Kansas, Nebraska, North Dakota, and South Dakota, suburban locales had the highest percentage of students attending high schools

**Table 2. Locales with the lowest and highest percentages of dual enrollment access and participation in each Regional Educational Laboratory Central state, 2017/18**

Geographic area	Dual enrollment access				Dual enrollment participation	
	Percentage of students attending high schools that provided dual enrollment		Percentage of high schools providing dual enrollment		Percentage of students participating in dual enrollment	
	Lowest	Highest	Lowest	Highest	Lowest	Highest
Colorado	Rural (84)	Town (90)	Rural (73) City (73)	Town (83)	Suburban (14)	Town (27)
Kansas	City (68)	Suburban (98)	City (56)	Town (90)	City (23)	Suburban (45)
Missouri	City (71)	Rural (95)	City (68)	Rural (92)	City (23)	Rural (33)
Nebraska	Rural (92)	Suburban (100)	Rural (85)	Suburban (100)	City (12)	Rural (32)
North Dakota	Rural (90)	Suburban (100)	City (70)	Suburban (100)	City (21)	Town (40)
South Dakota	Rural (88)	Suburban (100) City (100)	Rural (80)	Suburban (100) City (100)	City (12)	Suburban (59)
Wyoming	Rural (73)	City (100)	Rural (69)	City (100)	Town (35) City (35)	Rural (41)
REL Central region	City (84)	Town (95)	City (71)	Town (89)	City (20)	Rural (31)
National average	City (79)	Rural (89)	City (68)	Rural (83)	City (17)	Town (27)

REL is Regional Educational Laboratory.

Note: Shading reflects the most common locale in each category across Regional Educational Laboratory Central states. The dark shading indicates the most common locales in the highest percent categories across the states. The lighter shading indicates the most common locales in the lowest percent categories across the states. The numbers in parentheses are the percentage value for the category in each cell.

Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) and the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>) for the 2017/18 school year.

that provided dual enrollment. In all these states except Kansas, suburban locales also had the highest percentage of high schools providing dual enrollment. In Missouri, Nebraska, and Wyoming, rural locales had the highest percentage of students participating in dual enrollment, and in all states except Colorado, city locales had the lowest percentage of students participating.

***In the Regional Educational Laboratory Central region, school-level dual enrollment access was higher in town locales than in rural, suburban, and city locales***

In the REL Central region, high schools in town locales (89 percent) were more likely than schools in rural (83 percent), suburban (83 percent), and city (71 percent) locales to provide at least one dual enrollment course (table 3). This pattern held true nationally as well. However, the locale with the highest rate differed across REL Central states. In Nebraska, North Dakota, and South Dakota all suburban high schools provided dual enrollment, while in South Dakota and Wyoming all city high schools did.



**Table 3. High schools in town, rural, and suburban locales in the Regional Educational Laboratory Central region were more likely than schools in city locales to provide dual enrollment (percent of high schools providing dual enrollment)**

High school locale	Colorado	Kansas	Missouri	Nebraska	North Dakota	South Dakota	Wyoming	REL Central region	United States
Rural	73	81	92	85	84	80	69	83	83
Town	83	90	91	94	83	91	83	89	82
Suburban	79	89	83	100	100	100	na	83	76
City	73	56	68	94	70	100	100	71	68
Average	75	80	87	88	84	82	76	82	78

na is not applicable because there are no high schools in Wyoming with a suburban locale. REL is Regional Educational Laboratory.

Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) and the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>) for the 2017/18 school year.

***Student-level dual enrollment access in the Regional Educational Laboratory Central region was above 90 percent in town and suburban locales***

In the REL Central region the percentage of grade 11 and 12 students attending high schools that provided dual enrollment was higher in town locales (95 percent) and suburban locales (92 percent) than in city locales (84 percent) and rural locales (89 percent; table 4). However, this finding was driven by Kansas and Missouri, where the rates of student access were higher than 90 percent in both town and suburban locales and the rates were 17 and 24 percentage points higher in rural locales than in city locales. In Missouri student-level dual enrollment access was highest in rural locales, followed by town, suburban, and city locales.

***Student-level dual enrollment participation in the Regional Educational Laboratory Central region was higher in rural and town locales than in suburban and city locales***

Across the REL Central region grade 11 and 12 students participated in dual enrollment at higher rates in rural locales (31 percent) and town locales (30 percent) than in suburban locales (26 percent) and city locales (20 percent; table 5). This pattern was mirrored nationally, but there was variation across REL Central states.

**Table 4. Students in town and suburban locales in the Regional Educational Laboratory Central region were more likely than students in rural and city locales to attend high schools that provided dual enrollment (percent of students with dual enrollment access)**

Student locale	Colorado	Kansas	Missouri	Nebraska	North Dakota	South Dakota	Wyoming	REL Central region	United States
Rural	84	85	95	92	90	88	73	89	89
Town	90	97	94	98	97	91	98	95	88
Suburban	88	98	92	100	100	100	na	92	81
City	87	68	71	95	92	100	100	84	79
Average	87	86	90	96	93	92	90	89	83

na is not applicable because there are no high schools in Wyoming with a suburban locale. REL is Regional Educational Laboratory.

Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) and the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>) for the 2017/18 school year.

**Table 5. Students in rural and town locales in the Regional Educational Laboratory Central region and nationally were more likely than students in suburban and city locales to participate in dual enrollment, 2017/18 (percent of grade 11 and 12 students who participated in dual enrollment)**

Student locale	Colorado	Kansas	Missouri	Nebraska	North Dakota	South Dakota	Wyoming	REL Central region	United States
Rural	19	39	33	32	24	29	41	31	26
Town	27	36	26	30	40	35	35	30	27
Suburban	14	45	31	31	29	59	na	26	18
City	21	23	23	12	21	12	35	20	17
Average	19	35	29	24	26	27	37	27	21

REL is Regional Educational Laboratory. na is not applicable because there are no high schools in Wyoming with a suburban locale.

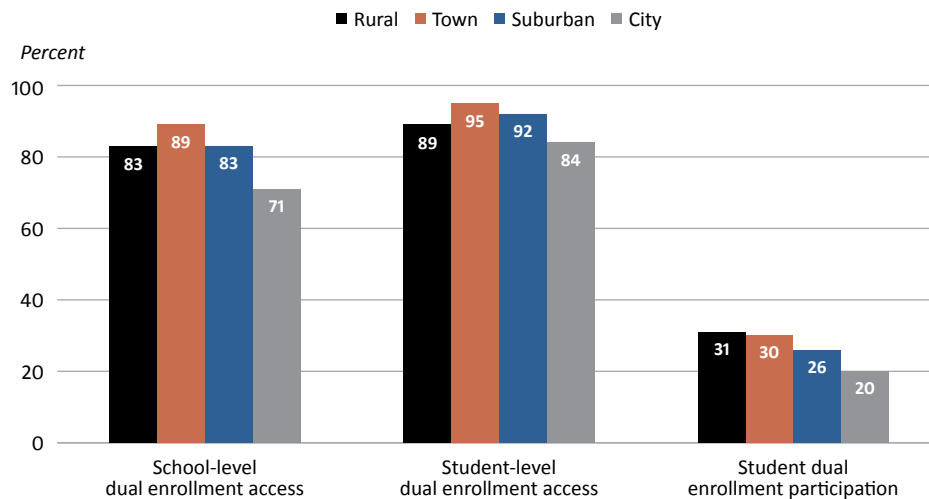
Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) and the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>) for the 2017/18 school year.

Student-level dual enrollment access was consistently higher than school-level access in all locales in the REL Central region (figure 4). Additionally, locales with higher rates of dual enrollment access generally had higher rates of dual enrollment participation. However, there were some differences. For instance, whereas student-level dual enrollment access was similar for rural students (89 percent) and suburban students (92 percent), dual enrollment participation was higher for rural students (31 percent) than for suburban students (26 percent).

***High schools with high percentages of students from low-income households were more likely than schools with low percentages of students from low-income households to provide dual enrollment***

In all seven states in the REL Central region, as well as nationally, schools in the third and fourth school income quartiles (schools with higher percentages of students from low-income households) were more likely to provide dual enrollment than were schools in the first school income quartile (schools with the lowest percentages of students from low-income households; table 6). In four states in the REL Central region (Missouri, Nebraska, North Dakota, South Dakota), more than 88 percent of schools in the income quartile with the highest percentages of students from low-income households provided dual enrollment.

**Figure 4. City locales in the Regional Educational Laboratory Central region had the lowest rates of dual enrollment access and participation, town locales had the highest rates of dual enrollment access, and rural locales had the highest rate of dual enrollment participation, 2017/18**



Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) from the 2017/18 school year.

**Table 6. School-level dual enrollment access was lowest among high schools with the lowest percentages of students from low-income households (first quartile) in the Regional Educational Laboratory Central region and nationally, 2017/18 (percent of high schools providing dual enrollment)**

School income quartile	Colorado	Kansas	Missouri	Nebraska	North Dakota	South Dakota	Wyoming	REL Central region	United States
Fourth quartile (lowest income) <sup>a</sup>	76	79	89	89	92	88	68	84	80
Third quartile	78	86	92	86	92	90	87	87	84
Second quartile	79	87	94	94	65	80	79	88	83
First quartile (highest income) <sup>b</sup>	72	66	84	79	56	44	67	75	71
Average	75	80	87	88	84	82	76	82	78

REL is Regional Educational Laboratory.

a. High schools with the highest percentages of students from low-income households.

b. High schools with the lowest percentages of students from low-income households.

Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) and the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>) for the 2017/18 school year.

***Students attending high schools with a high percentage of students from low-income households were more likely than students attending high schools with a low percentage of students from low-income households to have dual enrollment access***

In the REL Central region and nationally, student-level dual enrollment access was higher in schools in the fourth school income quartile (highest percentages of students from low-income households) than in schools in the first school income quartile (lowest percentages of students from low-income households; table 7). This pattern held for individual states in the region except for Colorado, where access was similar across quartiles, and Wyoming, where access was lowest in the fourth school income quartile. On average in the REL Central region, 90 percent of grade 11 and 12 students attending schools in the fourth school income quartile had dual enrollment access. This high rate might reflect, in part, that schools that serve higher percentages of students from low-income households are larger on average and that larger schools tend to provide dual enrollment programs (see appendix A for more detail on enrollment and school income quartiles).

**Table 7. Students attending high schools with the highest percentages of students from low-income households (fourth quartile) were more likely than students attending high schools with the lowest percentages of students from low-income households (first quartile) in the Regional Educational Laboratory Central region and nationally to have dual enrollment access, 2017/18 (percent of grade 11 and 12 students with dual enrollment access)**

School income quartile	Colorado	Kansas	Missouri	Nebraska	North Dakota	South Dakota	Wyoming	REL Central region	United States
Fourth quartile (lowest income) <sup>a</sup>	86	94	92	97	97	91	79	90	84
Third quartile	89	94	90	96	93	98	96	92	87
Second quartile	88	92	95	99	59	91	94	93	85
First quartile (highest income) <sup>b</sup>	87	63	84	92	72	44	84	82	79
Average	87	86	90	96	93	92	90	89	83

REL is Regional Educational Laboratory.

a. High schools with the highest percentages of students from low-income households.

b. High schools with the lowest percentages of students from low-income households.

Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) and the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>) for the 2017/18 school year.

***In the Regional Educational Laboratory Central region, dual enrollment participation was higher in schools with higher percentages of students from low-income households than in schools with lower percentages of students from low-income households, but participation varied across states***

In the REL Central region 30 percent of grade 11 and 12 students in schools in the fourth school income quartile (schools with the highest percentages of students from low-income households) participated in dual enrollment compared with 19 percent in schools in the first school income quartile (schools with the lowest percentages of students from low-income households; table 8). The national pattern was similar. However, participation across individual states in the REL Central region varied considerably. For instance, in Colorado, schools with higher percentages of students from low-income households had the lowest percentage of dual enrollment participation, whereas in Kansas, North Dakota, South Dakota, and Wyoming, schools with the lowest percentages of students from low-income households had participation rates that were 20 or more percentage points lower than those of schools with the highest percentages of students from low-income households. However, this finding should be interpreted cautiously, as it does not imply that students from low-income households had higher rates of dual enrollment participation than did students from higher income households.

In the REL Central region student-level dual enrollment access was higher than school-level access for students attending schools in all four school income quartiles (figure 5).

**Table 8. Students attending high schools with higher percentages of students from low-income households (fourth quartile) were more likely to participate in dual enrollment (percent of grade 11 and 12 students who participated in dual enrollment)**

School income quartile	Colorado	Kansas	Missouri	Nebraska	North Dakota	South Dakota	Wyoming	REL Central region	United States
Fourth quartile (lowest income) <sup>a</sup>	18	50	36	29	30	30	34	30	24
Third quartile	15	43	35	19	25	25	39	28	23
Second quartile	22	31	29	30	12	24	42	28	20
First quartile (highest income) <sup>b</sup>	21	16	19	19	9	10	14	19	15
Average	19	35	29	24	26	27	37	27	21

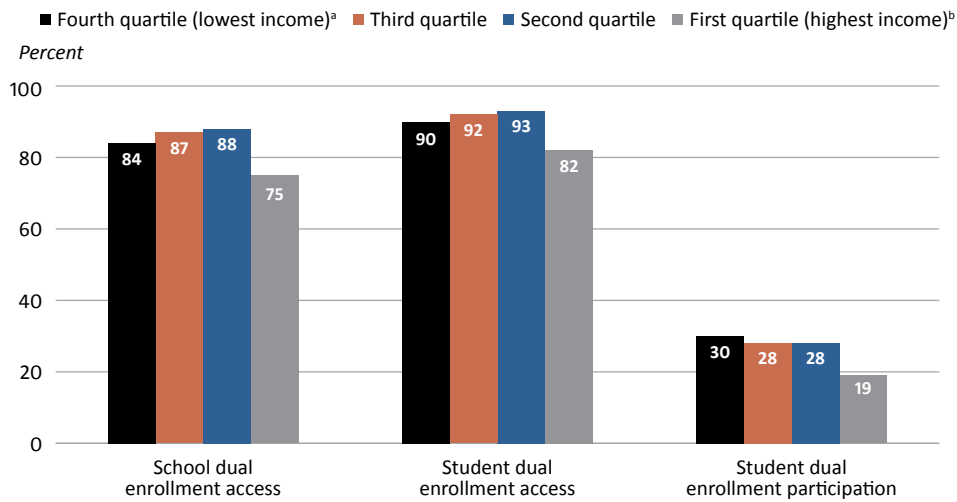
REL is Regional Educational Laboratory.

a. High schools with the highest percentages of students from low-income households.

b. High schools with the lowest percentages of students from low-income households.

Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) and the Elementary/Secondary Information System of the National Center for Education Statistics (<https://nces.ed.gov/ccd/elsi/>) for the 2017/18 school year.

**Figure 5. Schools with the highest percentage of students from lower income households had higher rates of dual enrollment access and participation than schools with the lowest percentage of students from lower income households in the Regional Educational Laboratory Central region, 2017/18**



a. High schools with the highest percentages of students from low-income households.

b. High schools with the lowest percentages of students from low-income households.

Source: Authors' analysis of data from the Civil Rights Data Collection (<https://ocrdata.ed.gov/Home>) from the 2017/18 school year.

## Implications

The study findings suggest that dual enrollment programs might provide a crucial opportunity for rural students, who generally have more limited opportunities for college and career preparation, to improve their college readiness. Rates of dual enrollment access for rural students in the REL Central region were lower than those for town and suburban students but similar to those for city students. However, rates of dual enrollment participation tended to be higher for rural and town students than for suburban and city students. This suggests that rural schools that were committed to dual enrollment might have provided more incentives, supports, or encouragement for students to take dual enrollment courses than schools in more urban locales did. State education agencies interested in expanding dual enrollment opportunities for rural students could explore strategies to encourage participation. Education agencies might also want to explore strategies to expand dual enrollment access, such as offering courses online or at locations in addition to high school or college campuses or by focusing on programs to certify high school teachers to serve as postsecondary instructors (Zinth, 2014).

In addition, implementing strategies to increase dual enrollment participation in schools that already provide dual enrollment is likely a key part of ensuring that students from low-income households benefit from dual enrollment. The study found that schools serving higher percentages of students from low-income households were more likely to provide dual enrollment and had higher rates of dual enrollment participation. Although encouraging from an equity standpoint, this finding needs to be examined more closely. For example, students from low-income households who attend schools serving higher percentages of students from low-income households might be less likely than other students at the schools to participate in dual enrollment. Especially in larger schools, higher dual enrollment access might not lead to higher dual enrollment participation for students from low-income households if the larger school size leads to higher rates of separating students based on academic ability (tracking) that are correlated with low-income status. State education agencies might want to compare participation rates in larger schools for students from low-income households and for other students to ensure that students from low-income households are participating in dual enrollment opportunities. When introducing

dual enrollment programs to schools that do not provide such programs, state education agencies might want to consider solutions that ensure equitable access for students from low-income households.

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