Do College and Career Readiness and Early College Success in Indiana Vary Depending on Whether Students Attend Public, Charter, or Private Voucher High Schools?

Appendix A. Background on school choice in Indiana

Appendix B. Methods

Appendix C. Supporting analysis

See https://go.usa.gov/xsZk7 for the full report.

Appendix A. Background on school choice in Indiana

This study examined how Indiana grade 9 students with different types of high school enrollment performed on indicators of college and career readiness and early college success during and after high school. Additional information about these types of high school enrollment is in this appendix.

School choice in Indiana

Indiana has had a charter school law allowing public charter schools to operate since 2001. Indianapolis is the only U.S. city in which the mayor's office serves as a charter school authorizer, indicating a high level of public investment in school choice (Berends & Waddington, 2018). In 2017, for example, the Indiana Department of Education spent approximately $305 million to support charter schools and $174 million for the Indiana Choice Scholarship Program, also known as Indiana's voucher program (Carden, 2017). Indiana's voucher program began in the 2011/12 school year and is the largest in the nation, serving more than 35,000 K–12 students from low- and moderate-income households statewide (Berends et al., 2018).

Indiana Choice Scholarship

An Indiana Choice Scholarship is a scholarship awarded to a qualifying student. Choice Scholarships often are referred to as vouchers. A full Choice Scholarship provides students with up to 90 percent of the amount of funding that would have been allocated by the state to their school district of residence for their education, had they attended their local traditional public high school. A half Choice Scholarship provides students with up to 50 percent of this amount. Students can apply the Choice Scholarship toward tuition at the private voucher high school of their choice. To qualify for a full Choice Scholarship, students must live in a household with an annual income equal to or less than 100 percent of the amount that would qualify them for the national school lunch program. To qualify for a half scholarship, students must live in a moderate-income household with an annual income between 100 percent and 150 percent of the amount that would qualify them for the national school lunch program.

All applicants who meet the income criteria receive a Choice Scholarship, but they must complete an application with support from the private voucher high school of their choice. Because private high school tuition is often lower than the public high school per student allocation, the average full Choice Scholarship is enough to cover

most students' full tuition and fees at the private voucher high school of their choice, and the average half Choice Scholarship is enough to cover 75 percent of the tuition and fees for most students (Indiana Department of Education, 2018). In 2017/18, 70 percent of Choice Scholarship recipients received a full scholarship, and 30 percent of Choice Scholarship recipients received a half scholarship (Indiana Department of Education, 2018). The initial legislation capped the number of scholarships available each year, but the number of applicants never exceeded the number available, and the cap was removed in 2013.

References

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Carden, D. (2017, January 1). Public schools still receive most Indiana education funding. *Northwest Indiana Times.* Retrieved June 21, 2020, from http://www.nwitimes.com/news/local/govt-and-politics/public-schools-still-receive-most-indiana-education-funding/article_ada94776-f269-5133-872e-451f4ff457cc.html.

Indiana Department of Education. (2018). *Choice Scholarship Program annual report: Participation and payment data.* Indiana Department of Education, Office of School Finance. https://www.doe.in.gov/sites/default/files/choice/2017-2018-choice-scholarship-program-report-august-update.pdf.

Appendix B. Methods

The study used administrative data from state education agencies in Indiana compiled by the Indiana Management Performance Hub, the Indiana state agency that responds to requests for Indiana data from multiple sources within the state. The data came from the Indiana Department of Education, the Indiana Commission for Higher Education, and the National Student Clearinghouse. The Indiana Department of Education provided data on student background characteristics and K–12 college and career readiness outcomes. The Indiana Commission for Higher Education provided data on postsecondary outcomes for students who enrolled in an Indiana public college or university, and it provided data on student enrollments in other colleges through its contract with the National Student Clearinghouse. Indiana Management Performance Hub staff compiled the data into a single file that was shared with the Regional Educational Laboratory Midwest. The study team supplemented these student-level records with school-level data from 2009/10 to 2014/15 from two surveys conducted by the National Center for Education Statistics: the Common Core of Data, which collects data on school and district characteristics for public schools, and the Private School Universe Survey, which collects data on school and district characteristics for private schools.

The study team obtained information on whether Indiana private schools participated in the statewide voucher program from the Indiana Choice Scholarship Program's annual report on the Indiana Department of Education website (Indiana Department of Education, 2016).

The study included the universe of high school students who were in grade 9 in traditional public schools, charter schools, and private voucher schools (private schools that participated in the statewide voucher program) in Indiana between the 2010/11 and 2013/14 school years (table B1). Private schools that did not participate in the voucher program were not included because most did not report school or student data. Virtual charter schools also were not included in the study.

Table B1. Number of Indiana high schools and high school students in this study, by high school type

School type	Number of schools	Number of students
Traditional public schools	405	317,367
Charter schools	34	5,820
Private voucher schools	84	17,550
Total	523	340,737

Source: Authors' analysis of data provided by the Indiana Management Performance Hub.

The study team obtained data for the high school freshman cohorts of 2010/11–2013/14. For each student in each cohort, the study team requested data for grades 8–12 and two years following expected high school graduation. For consistency, college and career readiness outcomes are defined to focus on students' first four years of high school, regardless of whether they were held back a year or did not graduate. For example, the outcome of whether students ever failed a course in high school uses data from students' first four years of high school regardless of their grade level. Similarly, enrollment in college is defined as whether students enrolled within one year of expected high school graduation. To capture this range of years for the four study cohorts, the data spanned the 2009/10–2018/19 academic years. (The key milestone years for each cohort are in table B2.)

Table B2. Indiana high school grade 9 cohorts included in this study and key milestone years

High school grade 9 cohort	Final year of high school	First year of postsecondary education	Year in which postsecondary persistence was measured
2010/11	2013/14	2014/15	2015/16
2011/12	2014/15	2015/16	2016/17
2012/13	2015/16	2016/17	2017/18
2013/14	2016/17	2017/18	2018/19

Source: Authors' compilation.

Data elements

The state education agencies provided longitudinal student data for grade 9 students in 2010/11–2013/14. The Indiana Management Performance Hub combined student records across datasets and assigned each student a unique, deidentified primary key. The data consisted of several sets of variables (table B3).

Table B3. Variables used in this study's analyses

Variable	Data source	Description
Key independent variables		
Type of high school enrollment	IDOE	Whether a student was a student in a traditional public school, a charter school student, a recipient of a private school voucher (voucher recipient), or a student in a private voucher school who did not receive a voucher (nonvoucher student)
Student background characteristics		
Gender	IDOE	Whether a student was male or female
Race/ethnicity[a]	IDOE	Whether a student was Black, Hispanic, White, or another race/ethnicity
Eligibility for the national school lunch program	IDOE	Whether a student was eligible for the national school lunch program in any school year in grades 8–12
English learner student status	IDOE	Whether a student was classified as an English learner student in any school year in grades 8–12
Special education status	IDOE	Whether a student was classified as receiving special education services in any school year in grades 8–12
Grade 8 ISTEP+ math score	IDOE	A student's score on the grade 8 ISTEP+ math state standardized assessment, standardized to have a mean of 0 and a standard deviation of 1
Grade 8 ISTEP+ English language arts score	IDOE	A student's score on the grade 8 ISTEP+ English language arts state standardized assessment, standardized to have a mean of 0 and a standard deviation of 1
Grade 8 school type[a]	CCD and PSS	Whether a student's grade 8 school was a public, charter, or private school
High school background characteristics		
School size	CCD and PSS	Number of students enrolled in grades 9–12
School locale	CCD and PSS	Whether the school is in a city, suburb, town, or rural area
School achievement	IDOE	Whether the school's average performance on grade 8 ISTEP+ math and English language arts assessments fell in the bottom, middle, or top third of high schools
Indicators of college and career readiness		
Course failure	IDOE	Whether a student ever failed a course in the first four years of high school
Suspension	IDOE	Whether a student ever was suspended in the first four years of high school
More than 15 absences a year	IDOE	Whether a student averaged more than 15 unexcused absences a year in the first four years of high school
Took at least one Advanced Placement examination	IDOE	Whether a student took at least one Advanced Placement examination
Passed at least one Advanced Placement examination	IDOE	Whether a student passed at least one Advanced Placement examination
Took a college entrance examination	IDOE	Whether a student took the SAT or the ACT college entrance examination
Graduated from high school within four years	IDOE	Whether a student graduated from high school within four years of entering
Earned an honors diploma in high school	IDOE	Whether a student graduated with a Core 40 with Honors diploma
Enrolled in college within one year of expected high school graduation	ICHE and NSC data	Whether a student enrolled in college within one year of expected high school graduation
Enrolled in a four-year college[b]	ICHE	Whether a student's college enrollment was in four-year college rather than a two-year college

Variable	Data source	Description
Indicators of early college success		
Took only nonremedial courses in the first year[b]	ICHE	Whether a student attending college took only nonremedial courses in the first year
Completed all attempted credits in the first year[b]	ICHE	Whether a student attending college completed all attempted credits in the first year
Persisted to a second year[b]	ICHE	Whether a student persisted in college to a second year at the same institution or another institution of the same or a higher level

CCD is Common Core of Data. ICHE is Indiana Commission for Higher Education. IDOE is Indiana Department of Education. ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8. NSC is National Student Clearinghouse. PSS is Private School Universe Survey.

a. Other race/ethnicity and grade 8 school type were not interacted with high school enrollment type in the analyses for research question 4 due to statistical limitations (see the Analytic models section for details).

b. Applies only to students who enrolled in an Indiana public college or university.

Source: Authors' compilation of information from data sources.

Data preparation

The Indiana Management Performance Hub combined the data from multiple sources using a probabilistic match algorithm. The data file included records for each student in each year for which data were available, from grade 8 through two years after expected high school graduation. If students attended a middle or high school outside Indiana or most private nonvoucher schools in Indiana in a given year, no record was available for that student in that year. The data file included multiple records per year for each student when a student attended more than one school in a given school year (for example, if a student transferred schools in the middle of the school year) or when students acquired credits from multiple institutions in a given year (for example, if a student earned dual credits from a local college while still enrolled in high school). The study team started with a sample of 342,953 students and took the following steps to prepare the data file for analysis:

1. *Determining students' primary schools.* Students' primary schools were identified as those in which they spent the largest number of days in a given school year. If students were listed as having spent an equal number of days in more than one school, the study team randomly chose which school to keep. Fewer than 0.2 percent of students spent an equal number of days in more than one school in the same school year.[1] When students changed schools between school years, their grade 9 school was assigned as their primary school. If the change in schools also resulted in a change of type of high school enrollment (among students in traditional public schools, charter school students, voucher recipients, or nonvoucher students), students' grade 9 enrollment type was assigned as their primary type of high school enrollment. Students' high school type was determined by whether they were enrolled in a traditional public, charter, or private voucher high school; if students ever received a voucher, they were classified as a voucher recipient. The average share of their high school years that students spent in a school that was not their grade 9 enrollment type was 2 percent for grade 9 students in traditional public schools, 16 percent for grade 9 charter school students, 19 percent for grade 9 voucher recipients, and 6 percent for grade 9 nonvoucher students.

2. *Identifying student-level characteristics.* Student-level characteristics, including student background characteristics and student-level outcome measures, were identified using available data for students who were in grade 9 for the first time from 2010/11 to 2013/14. Data received from the Indiana Management Performance Hub contained some duplicate rows with the same student ID and school year. Some of these duplicates may have been caused by students who transferred schools during the academic year or by erroneous data entry by schools (for example, revisions to student attendance records in the same school year). Other duplicate rows contained the same student ID and school year but varied in student background characteristics, including gender, race/ethnicity, English learner student status, or special education status. In these cases the duplicate rows indicated errors in the probabilistic matching of data across record sources (for example, if data from multiple students were linked to the same student ID). To clean the data, remove duplicate rows, and identify student-level characteristics, the study team performed the following steps:

   ○ Dropped all rows belonging to students for whom normally time-invariant characteristics (for example, gender and race/ethnicity) were inconsistent within the same school year, per guidance from the Indiana Management Performance Hub. The Indiana Management Performance Hub advised that cases in which normally stable variables vary within both student ID and school years may indicate an error in the probabilistic match used to link records, which would make it impossible to determine which characteristic for a given student ID is valid. The study team therefore dropped all records in these cases

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[1] Assuming 180 days in a school year, the probability of students changing schools on a randomly selected day is 0.6 percent. One would expect a spike in enrollment changes at the semester break, which does not always align with the exact middle of the school year. If students are more likely to switch at the semester break than the midpoint of the school year, one would expect a somewhat lower than 0.6 percent probability of spending an equal number of days in more than one school in the same school year, as seen here.

rather than make an arbitrary choice about which of multiple rows for a given student ID and year should be preserved. The study team dropped the records of 425 students (0.12 percent of the original sample). The study team also dropped 368 cases that had no demographic data at all (0.11 percent of the original sample).

○ Dropped all rows belonging to students who appeared in multiple school districts for every year observed. This was another indication of a probabilistic match error because it appeared as though students were simultaneously enrolled in multiple school districts for their entire high school careers. Without a way to determine which data were valid, the study team dropped all records rather than attempt to arbitrarily choose which school district students attended. The study team dropped the records of 1,423 students (0.41 percent of original sample).

○ In a small number of cases, students had multiple records showing different values on a given indicator. For example, a student may have multiple records showing different values for eligibility for the national school lunch program (FRPL, for free or reduced-price lunch). One record may indicate eligibility (FRPL = 1), whereas another record in the same year may not indicate eligibility (FRPL = 0). In these cases, the study team recoded variables of interest to preserve maximum values by year. After the maximum value was preserved, the study team dropped duplicate rows, keeping one row with the maximum value on those variables of interest.

○ Reviewed the resulting dataset for any remaining duplicate rows by student ID and school year and found none.

○ When student-level characteristics varied across years, the study team generated a new variable taking on the maximum value across all records for the variable of interest by student ID and assigned the maximum value of that variable to all student-years. This process was done for all variables of interest, including graduation, eligibility for the national school lunch program, English learner student status, special education status, and state assessment scores. No students had different values for gender or race/ethnicity in different school years.

3. *Identifying school-level characteristics.* Key independent variables and school background characteristics were identified using available data from 2009/10 to 2013/14. High school type remained constant for all schools in the data during the study period. The Private School Universe Survey collects data from schools every other year; for missing years, data from the years immediately prior to and immediately after the missing year were used. For example, the number of students enrolled in each school in 2010/11, a year in which the Private School Universe Survey was not administered, was calculated as the average of each school's number of students in 2009/10 and 2011/12.

Sample definitions

High school indicators of college and career readiness and enrollment in college within one year of expected high school graduation were examined for all students who attended an Indiana traditional public school, charter school, or private voucher school with or without a voucher in grade 9. Indicators of early college success were examined only for students who enrolled in a two-year or four-year Indiana public college or university within one year of high school graduation, because the Indiana Commission for Higher Education's contract to receive data from the National Student Clearinghouse is limited to data on students who enrolled within one year of high school graduation. Sample definitions, indicators examined using each sample, and sample sizes are presented in table B4.

Table B4. Sample definitions, indicators examined for each sample, and sample sizes

Sample	Indicators examined	Total sample	Analytic sample	Percent with no missing data
All grade 9 students	High school indicators of college and career readiness through high school graduation	340,737	285,029	83.7
All high school graduates who enrolled in an Indiana public college or university within one year of high school graduation	Enrolled in a four-year college rather than a two-year college, indicators of early college success	120,649	115,513[a]	95.7

a. The analytic sample size for regression analyses of the association between type of high school enrollment and completing all attempted credits is 114,515 due to 1 percent of data missing on this outcome.
Source: Authors' calculations based on data provided by the Indiana Management Performance Hub.

Missing data

Before conducting analyses, the study team assessed the amount of data missing for each variable (table B5). Among variables for grades 8–12, students' grade 8 characteristics had the highest shares of missing data: 9.1 percent of students were missing grade 8 Indiana Statewide Testing for Educational Progress–Plus (ISTEP+) assessment scores in math, 9.5 percent were missing them for English language arts, and 8.4 percent were missing information on whether they had ever been eligible for the national school lunch program. Missing data did not exceed 9.5 percent of all students for any grade 8–12 variable and did not exceed 13.0 percent for students with any enrollment type (students in traditional public schools, charter school students, voucher recipients, or nonvoucher students) for any grade 8–12 variable. At the postsecondary level 1.0 percent of cases were missing data on whether students completed all attempted credits; otherwise, no postsecondary outcomes had missing data.

Table B5. Number of valid cases and percentage missing for each variable

Variable	Number of valid cases	Percent missing
Type of high school enrollment	340,737	0.0
Gender	340,737	0.0
Race/ethnicity	340,737	0.0
Eligibility for the national school lunch program	312,187	8.4
English learner student status	320,223	6.0
Special education status	320,223	6.0
Grade 8 ISTEP+ math score	309,702	9.1
Grade 8 ISTEP+ English language arts score	308,530	9.5
Grade 8 school type	326,304	4.2
School size	340,310	0.1
School locale	340,737	0.0
School math achievement	340,667	0.0
School English language arts achievement	340,660	0.0
Course failure	340,737	0.0
Suspension	340,737	0.0
Absent 15 or more days a year	340,737	0.0
Took at least one Advanced Placement examination	340,737	0.0
Passed at least one Advanced Placement examination	340,737	0.0
Took a college entrance examination	340,737	0.0

Variable	Number of valid cases	Percent missing
Graduated from high school within four years	340,737	0.0
Earned an honors diploma in high school	340,737	0.0
Enrolled in college within one year of expected high school graduation	340,737	0.0
Enrolled in a four-year college rather than a two-year college[a]	120,649	0.0
Took only nonremedial courses in the first year	120,649	0.0
Completed all attempted credits in the first year	119,585	1.0
Persisted to a second year	120,649	0.0

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.
a. Applies only to students who enrolled in an Indiana public college or university.
Source: Authors' analysis of data provided by the Indiana Management Performance Hub and the U.S. Department of Education's Common Core of Data and Private School Universe Survey.

Although the proportion of missing data for each individual variable was between 0 and 9.5 percent, the overall response rate for all cases with no missing data for analyses of college and career readiness outcomes was just below 84 percent. See tables C2 and C3 for the study team's comparison of the overall sample to the analytic sample on all indicators of college and career readiness and early college success.

Listwise deletion was used for student-level covariates with missing data. No school-level data were missing. Although little to no data were missing at the postsecondary level within each sample, the study team compared the characteristics of the Indiana public college sample with the characteristics of the sample who attended Indiana nonpublic or out-of-state public or private colleges and discussed the representativeness of the Indiana public college sample in the main body of the report.

Sensitivity analysis. The study team conducted a sensitivity analysis for the approach to dealing with missing data by implementing an inverse probability weighting approach. To do this, the study team created a pseudosample of students not missing data on any variables except for grade 8 ISTEP+ math score, grade 8 ISTEP+ English language arts score, and grade 8 school type, which were highly correlated. This pseudosample contained 91.5 percent of the full sample of students. The study team ran a logistic regression with a binary outcome variable equal to 1 for cases that were complete (that is, included in the analytic sample) and 0 for observations that were missing at least one of the variables (that is, excluded from the analytic sample). The predictor variables in this regression included gender, race/ethnicity, eligibility for the national school lunch program, English learner student status, special education status, cohort year, type of high school enrollment, and school characteristics (school grade 8 ISTEP+ performance, school size, and school locale). The results of this regression were used to generate weights equal to the inverse probability of being included in the analytic sample. The study team reran the hierarchical generalized linear models used to address research question 2 and applied these weights. The results were substantively similar to those presented in the report (see table C9 in appendix C).

For each outcome there are six comparisons among high school enrollment types: nonvoucher students compared with students in traditional public schools, nonvoucher students compared with charter school students, nonvoucher students compared with voucher recipients, voucher recipients compared with students in traditional public schools, voucher recipients compared with charter school students, and charter school students compared with students in traditional public schools. Across the 10 indicators of college and career readiness, these yield 60 comparisons. Of the 60 comparisons, 57 (95 percent) yielded the same result (either a difference of 5 percentage points or larger—that is, a meaningful difference—or no meaningful difference). In 3 comparisons (5 percent) the difference changed from meaningful to not meaningful due to a 1 percentage point change in predicted probabilities from 5 percentage points to 4 percentage points. Those 3 comparisons were: the difference between charter school students and students in traditional public schools in the probability of taking at least one Advanced Placement examination, the difference between nonvoucher students and charter school students in the

probability of graduating from high school within four years, and the difference between nonvoucher students and students in traditional public schools in the probability of earning an honors diploma in high school (see table C9 in appendix C). The results for research question 3 did not require sensitivity analysis because the sample used for these analyses had a low percentage of missing data.

Analytic models

This section provides additional detail on the analysis methods used to answer each research question.

Research question 1. To describe and compare differences in student background characteristics by type of high school enrollment, the study team produced counts and percentages of students with each characteristic. Descriptive statistics were generated separately for students in traditional public schools, charter school students, voucher recipients, and nonvoucher students.

Research questions 2 and 3. To describe and compare the percentages of students in traditional public schools, charter school students, voucher recipients, and nonvoucher students who met indicators of college and career readiness and early college success, the study team produced counts and percentages of each group of students who met the indicators of success.

The associations between type of high school enrollment and indicators of college and career readiness and early college success were examined overall and by student group using variables indicating students' prior academic achievement and their demographic characteristics, including gender, race/ethnicity, eligibility for the national school lunch program, English learner student status, and special education status.

Models for research questions 2 and 3 measured statistical associations between type of high school enrollment (a set of indicators for whether students were students in traditional public schools, charter school students, voucher recipients, or nonvoucher students) and the indicators of college and career readiness and early college success (see table B3).

All binary outcomes were modeled using the following logit equation:

$$Y_{ij} = \log\left(\frac{u_{ij}}{1-u_{ij}}\right)$$

where Y_{ij} is the log odds of success for student i in high school j *and* u_{ij} is the probability of success for student i in high school j.

The hierarchical generalized linear models for identifying associations with students' high school and postsecondary outcomes are as follows:

Level 1 model: Students within schools

$$Y_{ij} = \beta_{0j} + \boldsymbol{\beta_1 EnrollmentType}_{ij} + \boldsymbol{\beta_2 Student}_{ij} + e_{ij} \text{ (B1)}$$

where i is the index for students ($i = 1, \ldots, n_j$) in school j; j is the index for high schools ($j = 1, \ldots, j$); *EnrollmentType*$_{ij}$ is a vector of the key predictor variables indicating whether students were students in traditional public schools, charter school students, voucher recipients, or nonvoucher students; *Student*$_{ij}$ is a vector of student demographic characteristics for student i in high school j; and e_{ij} is the random error term for student i in high school j.

Level 2 model: Schools

The intercept from the Level 1 model (β) becomes the dependent variable in the Level 2 model:

$$\beta_{0j} = \gamma_{00} + \boldsymbol{\gamma_{1j} School}_{0j} + u_{0j} \text{ (B2)}$$

where **School**$_{0j}$ is a vector of school characteristics for high school *j* and *u*$_{0j}$ is the random error for high school *j*. The study team then calculated adjusted probabilities for each student and enrollment type using coefficients for each student's own student and high school background characteristics but the coefficients for each of the four types of high school enrollment. The study team then averaged those adjusted probabilities by type of high school enrollment across all students in the analysis.

Research question 4. To examine whether associations between type of high school enrollment and student outcomes varied by students' demographic characteristics, the study team used single-level generalized linear models with clustered standard errors to account for the clustering of students within schools and included interaction terms between type of high school enrollment and student demographic characteristics to test whether coefficients for each type of high school enrollment differed across student demographic characteristics. The equation is as follows:

$$Y_{ij} = \beta_{0j} + \boldsymbol{\beta_1 EnrollmentType}_{ij} + \boldsymbol{\beta_2 Student}_{ij} + \boldsymbol{\beta_{3j} EnrollmentType}_{ij} * \boldsymbol{Student}_{ij} + e_{ij} \text{ (B3)}$$

where student enrollment type was interacted with the following vector of student background characteristics: gender, whether students were Black or Hispanic, eligibility for the national school lunch program, English learner student status, special education status, grade 8 math and English language arts achievement, and cohort year.[2] e_{ij} was adjusted for the clustering of students into schools. The study team used single level generalized linear models with clustered standard errors rather than hierarchical generalized linear models because Stata did not have the computational power to conduct the postestimation calculations for adjusted probabilities from the more complex hierarchical generalized linear models with interaction terms. To test the robustness of this approach, the study team estimated interaction models with hierarchical generalized linear models and generalized linear models with clustered standard errors and found no substantive differences in the results. The study team then calculated adjusted probabilities using the same approach as for research questions 2 and 3 and averaging the adjusted probabilities across all students in the analysis from equation B3. The study team defined meaningful differences as differences that were 5 percentage points or greater. That threshold was determined in consultation with the stakeholder advisory group.

Reference

Indiana Department of Education. (2016). *Choice Scholarship Program annual report: Participation and payment data.* Indiana Department of Education, Office of School Finance. https://indianapublicmedia.org/stateimpact/files/2016/07/2015-2016-Choice-Scholarship-Program-Report-FINAL.pdf.

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[2] High school enrollment type was interacted with all student background characteristics except for other race/ethnicity and grade 8 school type. The sample size for other race/ethnicity was too small and grade 8 school type was too collinear with high school enrollment type to make these interactions feasible.

Appendix C. Supporting analysis

This appendix presents full results for all analyses. Table C1 presents descriptive statistics for student and high school characteristics for the full sample and separately by type of high school enrollment. Table C2 presents descriptive statistics for indicators of college and career readiness for the full sample by type of high school enrollment and for the analytic sample by type of high school enrollment. Table C3 presents descriptive statistics for indicators of early college success for the full sample of students who enrolled in an Indiana public college by type of high school enrollment and for the analytic sample by type of high school enrollment.

Results for research questions 2 and 3 are presented as odds ratios in the appendix tables. Indicators of college and career readiness are presented in tables C4–C7. Indicators of early college success are presented in table C8. Table C9 presents adjusted probabilities for each indicator of college and career readiness and early college success by type of high school enrollment. Table C10 compares the sample of students who enrolled in an Indiana public college with the sample of students who enrolled in another college type (Indiana private college or a public or private college outside Indiana). Tables C11–C15 present results for research question 4 about the interaction between type of high school enrollment and student background characteristics. Table C16 presents detailed adjusted probabilities for students who were and were not eligible for the national school lunch program.

Figure C1 presents the distribution of high school graduation and college enrollment outcomes by type of high school enrollment for all students in grade 9 from 2010/11 to 2013/14. Figure C2 presents the distribution of college enrollment outcomes by type of high school enrollment for students who graduated from high school within four years and enrolled in a college within one year of graduation.

Table C1. Indiana student and high school background characteristics by type of high school enrollment, 2010/11–2013/14 (percent)

Characteristic	All students (*N* = 340,737)	Students in traditional public schools (*n* = 317,367)	Charter school students (*n* = 5,820)	Voucher recipients (*n* = 2,021)	Nonvoucher students (*n* = 15,529)
Student background characteristic					
Student demographic characteristic					
Female	49	49	52	50	49
Black	12	11	49	30	4
Hispanic	8	8	9	16	5
Other race/ethnicity	6	6	6	9	6
White	74	75	36	45	85
Eligible for the national school lunch program	34	35	52	53	8
English learner student	7	7	7	14	4
Had an individualized education program	11	12	12	7	4
Grade 8 ISTEP+ math score					
Did not meet standards	19	19	28	17	6
Met standards	53	53	48	63	52
Exceeded standards	19	19	11	16	31
Missing	9	9	13	4	11
Grade 8 ISTEP+ English language arts score					
Did not meet standards	23	23	29	20	7
Met standards	58	58	51	68	62
Exceeded standards	10	9	8	8	21
Missing	9	9	13	4	11
Grade 8 school type					
Public	89	94	29	52	13
Charter	2	1	58	12	0
Private	6	2	5	34	74
Missing	4	4	9	2	12
High school background characteristic					
School locale					
City	32	28	85	77	72
Suburb	27	28	15	15	20
Town	16	17	0	3	3
Rural area	25	26	0	4	5

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.
Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C2. Indiana students' performance on indicators of college and career readiness by type of high school enrollment, 2010/11–2013/14 cohorts (percent)

Indicator	Full sample (N = 340,737)				Analytic sample (n = 285,029)			
	Students in traditional public schools (n = 317,367)	Charter school students (n = 5,820)	Voucher recipients (n = 2,021)	Nonvoucher students (n = 15,529)	Students in traditional public schools (n = 265,836)	Charter school students (n = 4,498)	Voucher recipients (n = 1,754)	Nonvoucher students (n = 12,941)
Ever failed a course in high school	45	57	41	16	43	57	40	16
Ever suspended in high school	29	47	11	2	26	47	10	2
Absent 15 or more days a year	15	23	14	5	13	20	12	5
Took at least one Advanced Placement examination	26	24	20	45	30	27	22	47
Passed at least one Advanced Placement examination	13	12	9	29	15	13	10	30
Took a college entrance examination	54	56	60	79	61	65	65	84
Graduated from high school within four years	81	75	88	94	90	86	94	98
Earned an honors diploma in high school	29	26	22	55	34	29	24	58
Enrolled in college within one year of expected high school graduation	46	43	58	75	53	51	62	79
Enrolled in a four-year college rather than a two-year college[a]	71	70	73	88	71	71	74	89

a. Applies only to students who enrolled in an Indiana public college or university. The full sample size for this variable was 120,649 (111,174 students in traditional public schools, 1,876 charter school students, 779 voucher recipients, and 6,820 nonvoucher students).
Note: Percentages have not been adjusted for other student and high school background characteristics.
Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C3. Indiana students' performance on indicators of early college success by type of high school enrollment, 2010/11–2013/14 cohorts (percent)

Indicator	Full sample (N = 120,649)				Analytic sample (n = 115,513)			
	Students in traditional public schools (n = 111,174)	Charter school students (n = 1,876)	Voucher recipients (n = 779)	Nonvoucher students (n = 6,820)	Students in traditional public schools (n = 106,934)	Charter school students (n = 1,703)	Voucher recipients (n = 720)	Nonvoucher students (n = 6,156)
Took only nonremedial courses in the first year	86	81	84	92	87	81	84	93
Completed all attempted credits in the first year[a]	54	39	43	68	54	39	44	68
Persisted to a second year	76	67	71	87	76	67	72	87

a. Data were missing for 1 percent of students.

Note: Percentages have not been adjusted for other student and high school background characteristics.

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C4. Results of hierarchical generalized linear models estimating the association between grade 9 type of high school enrollment and whether Indiana students ever failed a course in high school, were ever suspended in high school, or averaged more than 15 absences a year, 2010/11–2013/14

Characteristic	Ever failed a course (n = 285,029)		Ever suspended (n = 285,029)		Averaged more than 15 absences a year (n = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable						
Type of high school enrollment						
Charter school student	1.36	0.30	1.46	0.22	1.24	0.16
Voucher recipient	0.53	0.09	0.23	0.03	1.03	0.13
Nonvoucher student	0.32	0.05	0.13	0.02	0.76	0.09
Student background characteristic						
Female	0.54	0.01	0.53	0.01	1.37	0.02
Black	0.94	0.02	1.99	0.04	0.54	0.01
Hispanic	1.36	0.03	1.42	0.03	1.09	0.03
Other race/ethnicity	1.01	0.02	1.28	0.03	0.90	0.02
Eligible for the national school lunch program	1.79	0.02	1.70	0.02	2.26	0.03
English learner student	0.67	0.02	0.56	0.01	0.52	0.02
Had an individualized education program	0.90	0.02	0.88	0.01	0.85	0.02
Grade 8 ISTEP+ score						
Math score	0.42	0.00	0.66	0.01	0.66	0.01
English language arts score	0.67	0.01	0.67	0.01	0.89	0.01
Grade 8 school type						
Charter	1.02	0.05	1.03	0.05	1.04	0.06
Private	0.85	0.03	0.58	0.02	0.60	0.03
Cohort year						
2010/11	0.95	0.01	1.28	0.02	0.77	0.01
2011/12	0.95	0.01	1.16	0.02	0.83	0.01
2012/13	0.96	0.01	1.04	0.02	0.84	0.01
High school background characteristic						
School grade 8 ISTEP+ performance						
School average math and English language arts score	1.23	0.02	1.34	0.02	0.96	0.02
School size (grades 9–12)						
Medium	1.12	0.05	0.98	0.04	1.02	0.04
Large	1.07	0.07	0.98	0.06	0.98	0.06
Extra large	0.76	0.07	0.82	0.08	1.09	0.11
School locale						
City	1.30	0.20	1.08	0.11	1.40	0.12
Town	1.14	0.19	0.87	0.10	0.92	0.09
Rural area	0.77	0.11	0.68	0.07	0.80	0.07

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.
Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Odds ratios for the average student are based on multilevel generalized linear models for binary outcomes that control for student and high school background characteristics (see appendix B for details).
Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C5. Results of hierarchical generalized linear models estimating the association between grade 9 type of high school enrollment and whether Indiana students took at least one Advanced Placement examination, passed at least one Advanced Placement examination, or took a college entrance examination, 2010/11–2013/14

Characteristic	Took at least one Advanced Placement examination (n = 285,029)		Passed at least one Advanced Placement examination (n = 285,029)		Took a college entrance examination (n = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable						
Type of high school enrollment						
Charter school student	0.68	0.19	0.41	0.13	1.40	0.18
Voucher recipient	0.43	0.09	0.60	0.13	0.99	0.11
Nonvoucher student	0.62	0.12	0.85	0.17	1.20	0.12
Student background characteristic						
Female	1.51	0.02	0.98	0.01	1.76	0.02
Black	1.05	0.03	0.58	0.02	1.91	0.04
Hispanic	0.89	0.02	0.95	0.04	0.91	0.02
Other race/ethnicity	1.24	0.03	1.17	0.04	1.33	0.03
Eligible for the national school lunch program	0.57	0.01	0.63	0.01	0.55	0.01
English learner student	1.88	0.05	1.96	0.07	1.63	0.04
Had an individualized education program	0.42	0.01	0.55	0.03	0.70	0.01
Grade 8 ISTEP+ score						
Math score	3.27	0.03	3.84	0.05	2.24	0.02
English language arts score	2.44	0.02	3.30	0.04	1.84	0.02
Grade 8 school type						
Charter	0.84	0.05	1.12	0.11	0.98	0.05
Private	1.73	0.05	1.84	0.07	1.78	0.06
Cohort year						
2010/11	0.87	0.01	0.87	0.02	0.78	0.01
2011/12	0.91	0.01	0.90	0.02	0.83	0.01
2012/13	0.52	0.01	0.49	0.01	0.91	0.01
School characteristic						
School grade 8 ISTEP+ performance						
School average math and English language arts score	0.74	0.02	0.80	0.04	0.87	0.01
School size (grades 9–12)						
Medium	1.08	0.12	1.12	0.08	1.02	0.04
Large	0.84	0.07	1.18	0.12	1.09	0.06
Extra large	1.12	0.12	1.26	0.17	1.39	0.12
School locale						
City	0.84	0.16	0.79	0.16	0.72	0.06
Town	0.51	0.11	0.45	0.10	0.85	0.07
Rural area	0.58	0.10	0.43	0.08	0.90	0.06

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Odds ratios for the average student are based on multilevel generalized linear models for binary outcomes that control for student and high school background characteristics (see appendix B for details).

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C6. Results of hierarchical generalized linear models estimating the association between grade 9 type of high school enrollment and whether students graduated from high school within four years or earned an honors diploma in high school, 2010/11–2013/14

Characteristic	Graduated from high school within four years (n = 285,029)		Earned an honors diploma in high school (n = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable				
Type of high school enrollment				
Charter school student	0.92	0.10	1.23	0.17
Voucher recipient	1.51	0.20	0.76	0.09
Nonvoucher student	1.77	0.21	1.43	0.14
Student background characteristic				
Female	1.34	0.02	2.10	0.02
Black	1.58	0.04	1.10	0.03
Hispanic	0.85	0.03	0.80	0.02
Other race/ethnicity	1.05	0.03	1.06	0.03
Eligible for the national school lunch program	0.49	0.01	0.46	0.01
English learner student	2.28	0.08	2.04	0.06
Had an individualized education program	1.61	0.03	0.41	0.01
Grade 8 ISTEP+ score				
Math score	1.88	0.02	4.67	0.05
English language arts score	1.56	0.02	2.14	0.02
Grade 8 school type				
Charter	1.05	0.06	0.93	0.06
Private	1.95	0.12	1.92	0.06
Cohort year				
2010/11	0.91	0.02	0.88	0.01
2011/12	0.91	0.02	0.94	0.01
2012/13	1.22	0.03	1.03	0.02
High school background characteristic				
School grade 8 ISTEP+ performance				
School average math and English language arts score	0.99	0.02	0.77	0.01
School size (grades 9–12)				
Medium	0.91	0.04	0.95	0.04
Large	1.00	0.06	1.05	0.06
Extra large	1.21	0.12	1.32	0.12
School locale				
City	0.68	0.05	0.75	0.06
Town	1.12	0.08	1.12	0.10
Rural area	1.33	0.09	1.27	0.10

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Odds ratios for the average student are based on multilevel generalized linear models for binary outcomes that control for student and high school background characteristics (see appendix B for details).

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C7. Results of hierarchical generalized linear models estimating the association between grade 9 type of high school enrollment and whether students enrolled in college within one year of expected high school graduation or enrolled in an Indiana public four-year college rather than an Indiana public two-year college, 2010/11–2013/14

Characteristic	Enrolled in college within one year of expected high school graduation (*n* = 285,029)		Enrolled in a four-year college rather than a two-year college[a] (*n* = 115,513)	
	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable				
Type of high school enrollment				
Charter school student	1.03	0.09	1.47	0.25
Voucher recipient	1.47	0.12	1.53	0.24
Nonvoucher student	1.78	0.12	1.93	0.26
Student background characteristic				
Female	1.58	0.01	1.32	0.02
Black	1.85	0.03	1.29	0.04
Hispanic	0.91	0.02	0.74	0.03
Other race/ethnicity	1.20	0.02	1.34	0.05
Eligible for the national school lunch program	0.61	0.01	0.72	0.01
English learner student	1.40	0.03	1.19	0.05
Had an individualized education program	0.82	0.01	0.53	0.02
Grade 8 ISTEP+ score				
Math score	1.85	0.01	2.53	0.04
English language arts score	1.54	0.01	2.05	0.03
Grade 8 school type				
Charter	1.01	0.04	0.95	0.08
Private	1.55	0.04	1.61	0.08
Cohort year				
2010/11	0.95	0.01	0.89	0.02
2011/12	0.97	0.01	1.02	0.02
2012/13	1.03	0.01	1.02	0.02
High school background characteristic				
School grade 8 ISTEP+ performance				
School average math and English language arts score	0.92	0.01	0.84	0.02
School size (grades 9–12)				
Medium	0.97	0.03	1.08	0.06
Large	1.09	0.05	1.18	0.10
Extra large	1.39	0.09	1.28	0.16
School locale				
City	0.75	0.04	0.76	0.08
Town	0.94	0.05	0.62	0.07
Rural area	1.04	0.05	0.64	0.06

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.

a. Applies only to students who enrolled in an Indiana public college or university.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Odds ratios for the average student are based on multilevel generalized linear models for binary outcomes that control for student and high school background characteristics (see appendix B for details).

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C8. Results of hierarchical generalized linear models estimating the association between grade 9 type of high school enrollment and whether students who enrolled in Indiana public colleges or universities took only nonremedial courses in the first year, completed all attempted credits in the first year, or persisted to a second year, 2010/11–2013/14

Characteristic	Took only nonremedial courses in the first year (*n* = 115,513)		Completed all attempted credits in the first year (*n* = 114,515)		Persisted to a second year (*n* = 115,513)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable						
Type of high school enrollment						
Charter school student	1.33	0.20	0.92	0.09	0.95	0.10
Voucher recipient	1.21	0.19	0.96	0.10	1.02	0.11
Nonvoucher student	1.38	0.18	1.33	0.10	1.24	0.11
Student background characteristic						
Female	1.09	0.02	1.38	0.02	1.18	0.02
Black	0.77	0.03	0.76	0.02	1.05	0.03
Hispanic	0.79	0.04	0.82	0.03	0.97	0.04
Other race/ethnicity	1.07	0.05	0.91	0.03	1.06	0.04
Eligible for the national school lunch program	0.78	0.02	0.61	0.01	0.57	0.01
English learner student	1.36	0.07	1.58	0.05	1.97	0.08
Had an individualized education program	0.66	0.02	0.90	0.03	0.92	0.03
Grade 8 ISTEP+ score						
Math score	2.89	0.05	1.66	0.02	1.46	0.02
English language arts score	1.79	0.03	1.33	0.01	1.39	0.02
Grade 8 school type						
Charter	0.89	0.08	0.97	0.07	1.06	0.08
Private	1.30	0.09	1.32	0.05	1.41	0.07
Cohort year						
2010/11	0.60	0.02	1.07	0.02	1.32	0.03
2011/12	0.91	0.03	1.04	0.02	1.27	0.03
2012/13	0.91	0.03	1.04	0.02	1.19	0.02
High school background characteristic						
School grade 8 ISTEP+ performance						
School average math and English language arts score	0.88	0.02	1.02	0.02	1.07	0.02
School size (grades 9–12)						
Medium	1.02	0.06	0.99	0.03	1.05	0.04
Large	0.97	0.07	1.03	0.05	1.07	0.05
Extra large	1.31	0.16	1.08	0.07	1.30	0.09
School locale						
City	0.73	0.06	0.89	0.04	0.92	0.04
Town	0.67	0.06	1.03	0.05	0.88	0.04
Rural area	0.82	0.07	1.13	0.05	0.99	0.05

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Odds ratios for the average student are based on multilevel generalized linear models for binary outcomes that control for student and high school background characteristics (see appendix B for details).

Source: Authors' calculations using data from the Indiana Management Performance Hub.

Table C9. Adjusted probabilities of each indicator and 95 percent confidence intervals by type of high school enrollment for the main analyses and the sensitivity analyses with inverse probability weighting, 2010/11–2013/14

Indicator	Main analyses				Sensitivity analyses			
	Students in traditional public schools	Charter school students	Voucher recipients	Nonvoucher students	Students in traditional public schools	Charter school students	Voucher recipients	Nonvoucher students
Ever failed a course in high school[a]	0.41 (0.39, 0.44)	0.47 (0.39, 0.55)	0.30 (0.25, 0.35)	0.22 (0.18, 0.26)	0.42 (0.39, 0.45)	0.48 (0.38, 0.58)	0.31 (0.23, 0.39)	0.23 (0.19, 0.28)
Ever suspended in high school[a]	0.24 (0.23, 0.25)	0.30 (0.25, 0.35)	0.08 (0.06, 0.10)	0.05 (0.04, 0.06)	0.25 (0.23, 0.26)	0.31 (0.24, 0.37)	0.08 (0.06, 0.10)	0.05 (0.04, 0.07)
More than 15 absences a year[a]	0.12 (0.11, 0.12)	0.14 (0.11, 0.16)	0.12 (0.10, 0.14)	0.09 (0.07, 0.11)	0.12 (0.11, 0.12)	0.14 (0.11, 0.17)	0.12 (0.09, 0.15)	0.09 (0.07, 0.11)
Took an Advanced Placement examination[a]	0.28 (0.25, 0.30)	0.23 (0.17, 0.29)	0.18 (0.14, 0.22)	0.22 (0.18, 0.26)	0.26 (0.25, 0.29)	0.22 (0.13, 0.30)	0.17 (0.13, 0.22)	0.21 (0.15, 0.27)
Passed an Advanced Placement examination[a]	0.12 (0.11, 0.13)	0.07 (0.04, 0.10)	0.09 (0.07, 0.11)	0.11 (0.08, 0.13)	0.11 (0.10, 0.12)	0.07 (0.03, 0.10)	0.08 (0.06, 0.11)	0.10 (0.07, 0.13)
Took a college entrance examination[a]	0.62 (0.61, 0.63)	0.67 (0.64, 0.71)	0.62 (0.58, 0.65)	0.65 (0.62, 0.68)	0.60 (0.59, 0.62)	0.66 (0.61, 0.72)	0.60 (0.54, 0.66)	0.64 (0.58, 0.69)
Graduated from high school within four years[a]	0.90 (0.90, 0.90)	0.89 (0.88, 0.91)	0.93 (0.91, 0.94)	0.94 (0.93, 0.95)	0.89 (0.89, 0.90)	0.89 (0.87, 0.91)	0.92 (0.91, 0.94)	0.93 (0.92, 0.95)
Earned an honors diploma in high school[a]	0.34 (0.33, 0.35)	0.37 (0.33, 0.40)	0.30 (0.28, 0.33)	0.39 (0.36, 0.41)	0.33 (0.32, 0.34)	0.35 (0.30, 0.40)	0.29 (0.26, 0.33)	0.37 (0.34, 0.40)
Enrolled in college within one year of expected high school graduation[a]	0.53 (0.52, 0.54)	0.54 (0.50, 0.57)	0.61 (0.58, 0.64)	0.64 (0.62, 0.67)	0.52 (0.51, 0.53)	0.52 (0.48, 0.57)	0.60 (0.56, 0.63)	0.63 (0.60, 0.67)
Enrolled in a four-year college rather than a two-year college[b]	0.71 (0.70, 0.73)	0.77 (0.73, 0.82)	0.78 (0.74, 0.82)	0.81 (0.78, 0.84)	0.71 (0.70, 0.72)	0.76 (0.72, 0.81)	0.77 (0.72, 0.81)	0.80 (0.80, 0.84)
Took only nonremedial courses in the first year[b]	0.87 (0.86, 0.87)	0.89 (0.87, 0.92)	0.89 (0.86, 0.91)	0.90 (0.88, 0.91)	—	—	—	—
Completed all attempted credits in the first year[b]	0.54 (0.53, 0.55)	0.52 (0.48, 0.57)	0.53 (0.49, 0.57)	0.60 (0.57, 0.63)	—	—	—	—
Persisted to a second year[b]	0.76 (0.76, 0.77)	0.75 (0.72, 0.79)	0.77 (0.73, 0.80)	0.80 (0.77, 0.82)	—	—	—	—

— is not applicable.

a. The sample size for this variable was 285,029.

b. Applies only to students who enrolled in an Indiana public college or university. The sample size for this variable was 115,513.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Adjusted probabilities are predicted probabilities for each student averaged across all students in the sample, based on regressions that control for student and high school background characteristics (see appendix B for details).

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C10. Characteristics of students enrolling in an Indiana public college or university or an Indiana private or out-of-state college or university within one year of high school graduation, 2010/11–2013/14 (percent)

Characteristic	Students enrolling in an Indiana public college or university (*n* = 120,649)	Students enrolling in an Indiana private or out-of-state college or university (*n* = 40,266)
Total	75	25
Key independent variable		
Type of high school enrollment		
Traditional public school student	92	86
Charter school student	2	2
Voucher recipient	1	1
Nonvoucher student	6	12
Student background characteristic		
Female	56	55
Black	9	8
Hispanic	7	5
Other race/ethnicity	6	6
White	78	81
Eligible for the national school lunch program	29	19
English learner student	7	4
Had an individualized education program	6	5
Grade 8 ISTEP+ math scores		
Did not meet standards	9	6
Met standards	58	51
Exceeded standards	29	38
Missing	3	5
Grade 8 ISTEP+ English language arts scores		
Did not meet standards	11	8
Met standards	70	65
Exceeded standards	15	22
Missing	4	5
Grade 8 school type		
Public	89	83
Charter	2	1
Private	7	12
Missing	2	4
High school background characteristic		
School locale		
City	30	31
Suburb	31	30
Town	15	14
Rural area	25	24

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.
Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C11. Interactions between type of high school enrollment and student background characteristics, results of generalized linear models with clustered standard errors estimating the association between grade 9 type of high school enrollment and whether students ever failed a course in high school, were ever suspended in high school, or averaged more than 15 absences a year, 2010/11–2013/14

Characteristic	Ever failed a course (*n* = 285,029)		Ever suspended (*n* = 285,029)		Averaged more than 15 absences a year (*n* = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable						
Type of high school enrollment						
Charter school student	1.56	0.47	1.24	0.31	1.41	0.28
Voucher recipient	0.87	0.18	0.36	0.09	2.26	0.45
Nonvoucher student	0.54	0.10	0.08	0.03	1.16	0.18
Student background characteristic						
Female	0.59	0.01	0.54	0.01	1.36	0.02
Black	1.00	0.09	1.93	0.12	0.60	0.04
Hispanic	1.50	0.08	1.56	0.08	1.13	0.06
Other race/ethnicity	0.97	0.04	1.33	0.05	0.91	0.03
Eligible for the national school lunch program	1.75	0.05	1.75	0.03	2.27	0.06
English learner student	0.66	0.04	0.56	0.03	0.54	0.03
Had an individualized education program	0.94	0.03	0.85	0.02	0.88	0.02
Grade 8 ISTEP+ score						
Math score	0.48	0.02	0.69	0.01	0.70	0.01
English language arts score	0.69	0.01	0.68	0.01	0.88	0.01
Grade 8 school type						
Charter	0.87	0.07	1.12	0.08	1.07	0.08
Private	0.75	0.04	0.61	0.04	0.58	0.04
Cohort year						
2010/11	0.88	0.03	1.14	0.04	0.72	0.02
2011/12	0.90	0.03	1.07	0.03	0.80	0.02
2012/13	0.93	0.02	0.98	0.02	0.82	0.02
Interaction terms						
Female*Charter school student	1.21	0.11	1.20	0.13	0.96	0.06
Female*Voucher recipient	1.09	0.15	1.31	0.19	0.89	0.12
Female*Nonvoucher student	0.84	0.06	1.04	0.16	1.08	0.11
Black*Charter school student	1.01	0.26	1.71	0.44	1.05	0.21
Black*Voucher recipient	1.15	0.32	0.87	0.17	0.75	0.14
Black*Nonvoucher student	1.21	0.24	0.75	0.14	0.73	0.14
Hispanic*Charter school student	0.86	0.27	0.91	0.22	0.69	0.15
Hispanic*Voucher recipient	0.88	0.28	0.93	0.30	0.99	0.25
Hispanic*Nonvoucher student	0.90	0.12	1.02	0.23	0.77	0.16
Eligible for the national school lunch program*Charter school student	0.81	0.13	0.82	0.08	0.88	0.14

Characteristic	Ever failed a course (n = 285,029)		Ever suspended (n = 285,029)		Averaged more than 15 absences a year (n = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Eligible for the national school lunch program*Voucher recipient	0.83	0.15	0.80	0.18	0.56	0.11
Eligible for the national school lunch program*Nonvoucher student	1.19	0.18	1.10	0.23	0.88	0.09
English learner student*Charter school student	1.17	0.25	1.44	0.24	1.60	0.32
English learner student*Voucher recipient	1.41	0.34	1.20	0.42	0.77	0.35
English learner student*Nonvoucher student	1.64	0.25	1.37	0.44	1.01	0.30
Grade 8 ISTEP+ math score*Charter school student	1.34	0.13	1.12	0.09	1.00	0.07
Grade 8 ISTEP+ math score*Voucher recipient	1.19	0.18	1.18	0.13	0.83	0.13
Grade 8 ISTEP+ math score*Nonvoucher student	0.84	0.05	0.93	0.09	0.89	0.07
Grade 8 ISTEP+ English language arts score*Charter school student	0.94	0.08	1.12	0.07	0.98	0.06
Grade 8 ISTEP+ English language arts score*Voucher recipient	1.17	0.15	1.14	0.16	1.35	0.17
Grade 8 ISTEP+ English language arts score*Nonvoucher student	1.00	0.06	0.96	0.14	1.14	0.07

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.
Note: Sample consists of students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Models also adjusted for high school background characteristics including school academic achievement, size, and locale. Odds ratios for the average student are based on multilevel generalized linear models for binary outcomes that control for student and high school background characteristics. Other race/ethnicity and grade 8 school type were not interacted with high school enrollment type due to statistical limitations (see appendix B for details).
Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C12. Interactions between type of high school enrollment and student background characteristics, results of generalized linear models with clustered standard errors estimating the association between grade 9 type of high school enrollment and whether students took at least one Advanced Placement examination, passed at least one Advanced Placement examination, or took a college entrance examination, 2010/11–2013/14

Characteristic	Took at least one Advanced Placement examination (*n* = 285,029)		Passed at least one Advanced Placement examination (*n* = 285,029)		Took a college entrance examination (*n* = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable						
Type of high school enrollment						
Charter school student	1.64	0.77	3.69	1.52	0.97	0.20
Voucher recipient	0.69	0.14	0.97	0.24	0.72	0.10
Nonvoucher student	0.93	0.18	1.30	0.24	1.28	0.19
Student background characteristic						
Female	1.45	0.02	0.97	0.02	1.74	0.03
Black	1.29	0.12	0.73	0.07	2.01	0.11
Hispanic	0.99	0.06	1.04	0.07	1.02	0.05
Other race/ethnicity	1.30	0.04	1.24	0.06	1.35	0.04
Eligible for the national school lunch program	0.58	0.02	0.59	0.02	0.52	0.01
English learner student	1.80	0.11	1.92	0.12	1.58	0.08
Had an individualized education program	0.45	0.02	0.58	0.03	0.70	0.02
Grade 8 ISTEP+ score						
Math score	2.84	0.08	3.30	0.10	2.14	0.04
English language arts score	2.25	0.06	3.03	0.08	1.89	0.02
Grade 8 school type						
Charter	0.61	0.11	0.63	0.14	0.97	0.08
Private	1.50	0.13	1.59	0.13	1.75	0.10
Cohort year						
2010/11	0.95	0.04	1.00	0.04	0.85	0.04
2011/12	0.96	0.03	1.00	0.04	0.88	0.03
2012/13	0.59	0.02	0.68	0.00	0.95	0.02
Interaction terms						
Female*Charter school student	0.95	0.14	1.20	0.14	0.91	0.06
Female*Voucher recipient	0.76	0.10	0.92	0.18	0.83	0.09
Female*Nonvoucher student	1.00	0.07	1.09	0.08	0.75	0.03
Black*Charter school student	0.79	0.28	0.34	0.12	1.15	0.21
Black*Voucher recipient	0.79	0.15	0.74	0.15	0.76	0.22
Black*Nonvoucher student	0.81	0.14	0.81	0.20	0.71	0.13
Hispanic*Charter school student	0.48	0.14	0.32	0.09	1.56	0.31
Hispanic*Voucher recipient	0.51	0.15	0.52	0.20	1.02	0.19
Hispanic*Nonvoucher student	0.73	0.12	0.70	0.15	0.92	0.15

Characteristic	Took at least one Advanced Placement examination (n = 285,029)		Passed at least one Advanced Placement examination (n = 285,029)		Took a college entrance examination (n = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Eligible for the national school lunch program*Charter school student	1.41	0.25	1.01	0.14	1.71	0.19
Eligible for the national school lunch program*Voucher recipient	1.22	0.18	1.25	0.24	1.58	0.27
Eligible for the national school lunch program*Nonvoucher student	1.27	0.16	1.25	0.19	1.20	0.16
English learner student*Charter school student	0.88	0.26	1.21	0.48	0.91	0.21
English learner student*Voucher recipient	1.56	0.49	0.71	0.28	0.97	0.25
English learner student*Nonvoucher student	0.74	0.15	0.96	0.20	0.64	0.12
Grade 8 ISTEP+ math score*Charter school student	0.77	0.12	0.80	0.11	0.77	0.06
Grade 8 ISTEP+ math score*Voucher recipient	0.81	0.10	0.77	0.14	0.67	0.09
Grade 8 ISTEP+ math score*Nonvoucher student	0.92	0.17	0.96	0.16	0.80	0.05
Grade 8 ISTEP+ English language arts score*Charter school student	0.99	0.09	1.11	0.12	0.90	0.05
Grade 8 ISTEP+ English language arts score*Voucher recipient	1.07	0.11	1.30	0.23	0.85	0.10
Grade 8 ISTEP+ English language arts score*Nonvoucher student	0.85	0.06	0.77	0.06	0.82	0.04

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Models also adjusted for high school background characteristics, including school academic achievement, size, and locale. Odds ratios for the average student are based on generalized linear models for binary outcomes with clustered standard errors and controls for student and high school background characteristics. Other race/ethnicity and grade 8 school type were not interacted with high school enrollment type due to statistical limitations (see appendix B for details).

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C13. Interactions between type of high school enrollment and student background characteristics, results of generalized linear models with clustered standard errors estimating the association between grade 9 type of high school enrollment and whether students graduated from high school within four years or earned an honors diploma in high school, 2010/11–2013/14

Characteristic	Graduated from high school within four years (*n* = 285,029)		Earned an honors diploma in high school (*n* = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable				
Type of high school enrollment				
Charter school student	0.55	0.11	1.25	0.25
Voucher recipient	0.81	0.18	0.46	0.11
Nonvoucher student	1.32	0.25	1.04	0.14
Student background characteristic				
Female	1.34	0.02	2.04	0.03
Black	1.49	0.07	1.07	0.07
Hispanic	0.84	0.04	0.76	0.03
Other race/ethnicity	1.03	0.04	1.06	0.03
Eligible for the national school lunch program	0.48	0.02	0.45	0.01
English learner student	2.26	0.12	2.06	0.10
Had an individualized education program	1.58	0.05	0.42	0.02
Grade 8 ISTEP+ score				
Math score	1.83	0.03	4.35	0.09
English language arts score	1.58	0.02	2.16	0.03
Grade 8 school type				
Charter	1.11	0.09	0.83	0.08
Private	2.08	0.20	1.92	0.00
Cohort year				
2010/11	0.96	0.03	0.93	0.03
2011/12	0.94	0.03	0.98	0.03
2012/13	1.24	0.03	1.05	0.02
Interaction terms				
Female*Charter school student	1.03	0.09	1.02	0.10
Female*Voucher recipient	0.81	0.18	0.99	0.16
Female*Nonvoucher student	0.97	0.13	1.02	0.07
Black*Charter school student	1.34	0.30	0.82	0.14
Black*Voucher recipient	1.18	0.31	0.85	0.21
Black*Nonvoucher student	0.83	0.20	0.58	0.10
Hispanic*Charter school student	1.69	0.48	1.33	0.21
Hispanic*Voucher recipient	0.95	0.34	0.58	0.25
Hispanic*Nonvoucher student	0.93	0.22	0.72	0.12
Eligible for the national school lunch program*Charter school student	1.55	0.20	1.82	0.26

Characteristic	Graduated from high school within four years (n = 285,029)		Earned an honors diploma in high school (n = 285,029)	
	Odds ratio	Standard error	Odds ratio	Standard error
Eligible for the national school lunch program*Voucher recipient	1.95	0.40	1.97	0.33
Eligible for the national school lunch program*Nonvoucher student	1.22	0.27	1.25	0.16
English learner student*Charter school student	0.58	0.17	0.72	0.18
English learner student*Voucher recipient	0.64	0.31	1.09	0.40
English learner student*Nonvoucher student	0.53	0.17	0.56	0.10
Grade 8 ISTEP+ math score*Charter school student	0.90	0.08	0.72	0.05
Grade 8 ISTEP+ math score*Voucher recipient	0.96	0.17	0.69	0.13
Grade 8 ISTEP+ math score*Nonvoucher student	0.99	0.15	0.90	0.07
Grade 8 ISTEP+ English language arts score*Charter school student	1.01	0.11	1.05	0.07
Grade 8 ISTEP+ English language arts score*Voucher recipient	0.66	0.12	1.11	0.13
Grade 8 ISTEP+ English language arts score*Nonvoucher student	0.74	0.08	0.89	0.05

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Models also adjusted for high school background characteristics including school academic achievement, size, and locale. Odds ratios for the average student are based on generalized linear models for binary outcomes with clustered standard errors and controls for student and high school background characteristics. Other race/ethnicity and grade 8 school type were not interacted with high school enrollment type due to statistical limitations (see appendix B for details).

Source: Authors' calculations using data from the Indiana Management Performance Hub.

Table C14. Interactions between type of high school enrollment and student background characteristics, results of generalized linear models with clustered standard errors estimating the association between grade 9 type of high school enrollment and whether students enrolled in college within one year of expected high school graduation or whether students who enrolled in an Indiana public college or university enrolled in a four-year college rather than a two-year college, 2010/11–2013/14

Characteristic	Enrolled in college within one year of expected high school graduation (n = 285,029)		Enrolled in a four-year college rather than a two-year college[a] (n = 115,513)	
	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable				
Type of high school enrollment				
Charter school student	0.86	0.11	1.58	0.44
Voucher recipient	1.04	0.14	1.03	0.23
Nonvoucher student	1.72	0.18	1.70	0.31
Student background characteristic				
Female	1.58	0.02	1.28	0.03
Black	1.83	0.07	1.50	0.11
Hispanic	0.91	0.03	0.95	0.06
Other race/ethnicity	1.20	0.03	1.41	0.06
Eligible for the national school lunch program	0.59	0.01	0.70	0.02
English learner student	1.36	0.05	0.16	0.06
Had an individualized education program	0.83	0.02	0.54	0.02
Grade 8 ISTEP+ score				
Math score	1.80	0.02	2.31	0.06
English language arts score	1.59	0.02	2.04	0.04
Grade 8 school type				
Charter	1.00	0.05	0.96	0.09
Private	0.52	0.07	1.66	0.11
Cohort year				
2010/11	1.01	0.02	0.93	0.03
2011/12	1.02	0.02	1.05	0.03
2012/13	1.06	0.02	1.04	0.03
Interaction terms				
Female*Charter school student	0.95	0.07	0.89	0.13
Female*Voucher recipient	0.91	0.09	1.40	0.29
Female*Nonvoucher student	0.81	0.05	1.19	0.14
Black*Charter school student	1.06	0.13	0.98	0.17
Black*Voucher recipient	1.04	0.12	1.26	0.23
Black*Nonvoucher student	0.79	0.11	1.00	0.18
Hispanic*Charter school student	1.03	0.16	1.82	0.76
Hispanic*Voucher recipient	0.83	0.22	1.37	0.43
Hispanic*Nonvoucher student	1.18	0.13	1.07	0.35

Characteristic	Enrolled in college within one year of expected high school graduation (n = 285,029)		Enrolled in a four-year college rather than a two-year college[a] (n = 115,513)	
	Odds ratio	Standard error	Odds ratio	Standard error
Eligible for the national school lunch program*Charter school student	1.33	0.08	1.16	0.18
Eligible for the national school lunch program*Voucher recipient	1.35	0.15	0.99	0.23
Eligible for the national school lunch program*Nonvoucher student	1.09	0.13	0.77	0.13
English learner student*Charter school student	0.15	0.12	0.45	0.14
English learner student*Voucher recipient	1.44	0.46	1.04	0.36
English learner student*Nonvoucher student	0.63	0.10	0.87	0.20
Grade 8 ISTEP+ math score*Charter school student	0.82	0.06	0.84	0.10
Grade 8 ISTEP+ math score*Voucher recipient	0.88	0.76	1.14	0.25
Grade 8 ISTEP+ math score*Nonvoucher student	0.82	0.03	1.12	0.12
Grade 8 ISTEP+ English language arts score*Charter school student	0.95	0.05	1.05	0.13
Grade 8 ISTEP+ English language arts score*Voucher recipient	0.91	0.08	0.94	0.22
Grade 8 ISTEP+ English language arts score*Nonvoucher student	0.76	0.05	1.07	0.11

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.

a. Applies only to students who enrolled in an Indiana public college or university.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Models also adjusted for high school background characteristics, including school academic achievement, size, and locale. Odds ratios for the average student are based on generalized linear models for binary outcomes with clustered standard errors and controls for student and high school background characteristics. Other race/ethnicity and grade 8 school type were not interacted with high school enrollment type due to statistical limitations (see appendix B for details).

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Table C15. Interactions between type of high school enrollment and student background characteristics, results of generalized linear models with clustered standard errors estimating the association between grade 9 type of high school enrollment and whether students who enrolled in an Indiana public college or university took only nonremedial courses in the first year, completed all attempted credits in the first year, or persisted to a second year, 2010/11–2013/14

Characteristic	Took only nonremedial courses in the first year (*n* = 115,513)		Completed all attempted credits in the first year (*n* = 114,515)		Persisted to a second year (*n* = 115,513)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Key independent variable						
Type of high school enrollment						
Charter school student	1.45	0.34	0.89	0.17	0.73	0.13
Voucher recipient	0.90	0.24	0.93	0.14	0.60	0.12
Nonvoucher student	1.23	0.17	1.00	0.08	0.96	0.09
Student background characteristic						
Female	1.09	0.03	1.36	0.02	1.15	0.02
Black	0.81	0.05	0.77	0.03	1.09	0.04
Hispanic	0.93	0.05	0.85	0.03	1.01	0.05
Other race/ethnicity	1.10	0.06	0.92	0.03	1.08	0.04
Eligible for the national school lunch program	0.76	0.02	0.59	0.01	0.55	0.01
English learner student	1.29	0.08	1.58	0.06	1.97	0.09
Had an individualized education program	0.67	0.02	0.89	0.03	0.92	0.03
Grade 8 ISTEP+ score						
Math score	2.76	0.07	1.63	0.03	1.43	0.02
English language arts score	1.83	0.05	1.34	0.02	1.40	0.02
Grade 8 school type						
Charter	0.89	0.09	0.99	0.09	1.07	0.08
Private	1.32	0.09	1.36	0.06	1.42	0.08
Cohort year						
2010/11	0.61	0.02	1.10	0.03	1.35	0.03
2011/12	0.92	0.03	1.06	0.02	1.29	0.03
2012/13	0.92	0.03	1.05	0.02	1.20	0.03
Interaction terms						
Female*Charter school student	0.83	0.10	0.91	0.09	1.08	0.14
Female*Voucher recipient	0.97	0.21	0.97	0.13	1.39	0.26
Female*Nonvoucher student	1.09	0.13	1.17	0.07	1.39	0.14
Black*Charter school student	0.89	0.19	1.04	0.21	0.97	0.15
Black*Voucher recipient	1.04	0.32	0.71	0.15	0.94	0.20
Black*Nonvoucher student	0.91	0.18	0.92	0.19	0.95	0.14
Hispanic*Charter school student	1.04	0.37	1.48	0.55	1.74	0.55
Hispanic*Voucher recipient	0.53	0.17	0.67	0.21	1.06	0.30
Hispanic*Nonvoucher student	0.87	0.25	0.82	0.15	1.02	0.16

Characteristic	Took only nonremedial courses in the first year (n = 115,513)		Completed all attempted credits in the first year (n = 114,515)		Persisted to a second year (n = 115,513)	
	Odds ratio	Standard error	Odds ratio	Standard error	Odds ratio	Standard error
Eligible for the national school lunch program*Charter school student	0.91	0.13	1.12	0.11	1.38	0.20
Eligible for the national school lunch program*Voucher recipient	1.45	0.34	1.24	0.23	1.61	0.32
Eligible for the national school lunch program*Nonvoucher student	1.25	0.24	1.33	0.16	1.02	0.14
English learner student*Charter school student	1.00	0.41	0.87	0.27	0.63	0.19
English learner student*Voucher recipient	1.57	0.52	0.91	0.25	0.91	0.30
English learner student*Nonvoucher student	0.95	0.29	0.61	0.12	0.46	0.10
Grade 8 ISTEP+ math score*Charter school student	0.58	0.06	0.91	0.07	0.78	0.05
Grade 8 ISTEP+ math score*Voucher recipient	0.95	0.18	0.69	0.10	0.90	0.16
Grade 8 ISTEP+ math score*Nonvoucher student	1.30	0.13	0.99	0.06	1.05	0.10
Grade 8 ISTEP+ English language arts score*Charter school student	1.06	0.13	0.85	0.06	0.95	0.07
Grade 8 ISTEP+ English language arts score*Voucher recipient	1.06	0.20	1.09	0.15	0.92	0.18
Grade 8 ISTEP+ English language arts score*Nonvoucher student	0.70	0.07	1.07	0.06	1.07	0.09

ISTEP+ is the Indiana Statewide Testing for Educational Progress–Plus, which is the state assessment administered to students in grades 3–8.

Note: Includes students in 405 traditional public schools, 34 charter schools, and 84 private voucher schools. Models also adjusted for school characteristics, including school academic achievement, size, and locale. Odds ratios for the average student are based on generalized linear models for binary outcomes with clustered standard errors and controls for student and high school background characteristics. Other race/ethnicity and grade 8 school type were not interacted with high school enrollment type due to statistical limitations (see appendix B for details).

Source: Authors' calculations using data from the Indiana Management Performance Hub.

Table C16. Adjusted probabilities of selected outcomes for students who were not eligible for the national school lunch program and eligible for the national school lunch program by type of high school enrollment, 2010/11–2013/14

Characteristic	Ever suspended in high school[a]	Absent more than 15 days a year[a]	Took at least one Advanced Placement examination[a]	Took a college entrance examination[a]	Graduated from high school within four years[a]	Earned an honors diploma in high school[a]	Enrolled in college within one year of expected high school graduation[a]	Persisted to a second year[b]
Students in traditional public schools								
Not eligible	0.22	0.09	0.33	0.66	0.93	0.38	0.57	0.80
Eligible	0.31	0.17	0.26	0.55	0.87	0.27	0.47	0.69
Difference	−0.09	−0.08	0.07	0.11	0.06	0.11	0.10	0.11
Charter school students								
Not eligible	0.27	0.12	0.38	0.67†	0.89	0.40†	0.54†	0.74†
Eligible	0.34	0.20	0.35	0.65†	0.86	0.37†	0.49†	0.69†
Difference	−0.07	−0.08	0.03	0.02†	0.03	0.03†	0.05†	0.05†
Voucher recipients								
Not eligible	0.10†	0.16†	0.25	0.59†	0.92†	0.26†	0.58†	0.73†
Eligible	0.13†	0.19†	0.20	0.55†	0.91†	0.24†	0.53†	0.71†
Difference	−0.03†	−0.03†	0.05	0.04†	0.01†	0.02†	0.05†	0.02†
Nonvoucher students								
Not eligible	0.06†	0.10	0.30	0.68	0.95	0.37	0.66	0.81
Eligible	0.10†	0.18	0.26	0.59	0.91	0.28	0.57	0.71
Difference	−0.04†	−0.08	0.04	0.09	0.04	0.09	0.09	0.10

† indicates that differences by eligibility for the national school lunch program for charter school students or private voucher school students (with or without a voucher) are meaningfully different from differences by eligibility for the national school lunch program for students in traditional public schools.
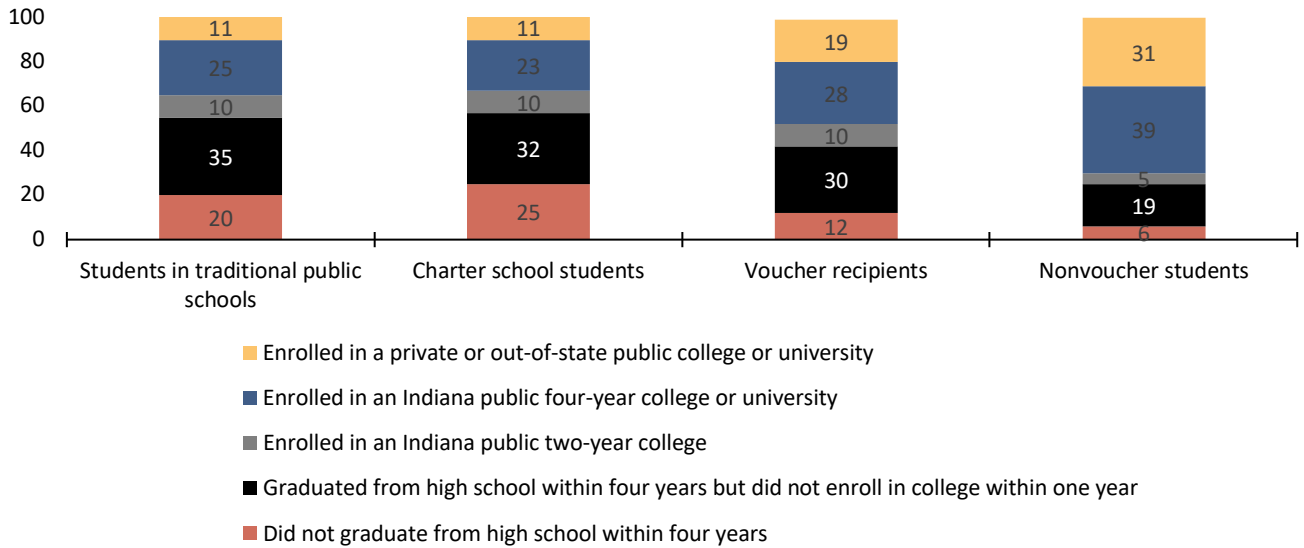
a. The sample size for this variable was 285,029.

b. Applies only to students who enrolled in an Indiana public college or university. The sample size for this variable was 115,513.

Note: Adjusted probabilities are predicted probabilities for each student averaged across all students in the sample, based on regressions that control for student and high school background characteristics. Results are based on generalized linear models for binary indicators that allow for clustering by school, control for student and high school background characteristics, and include all interactions between student background characteristics and type of high school enrollment (see appendix B for details).

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Figure C1. Of all students in grade 9 from 2010/11 to 2013/14, 35 percent of students in traditional public schools, 33 percent of charter school students, 38 percent of voucher recipients, and 44 percent of nonvoucher students enrolled in an Indiana public college or university

Percent of all students

- Enrolled in a private or out-of-state public college or university
- Enrolled in an Indiana public four-year college or university
- Enrolled in an Indiana public two-year college
- Graduated from high school within four years but did not enroll in college within one year
- Did not graduate from high school within four years

Note: *n* = 340,737.

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.

Figure C2. Of students who graduated from high school within four years and within one year of expected high school graduation, three-fourths enrolled in an Indiana public college or university, 2010/11–2013/14

Percent of high school graduates who enrolled in college

- Enrolled in a private or out-of-state public college or university
- Enrolled in an Indiana public four-year college or university
- Enrolled in an Indiana public two-year college
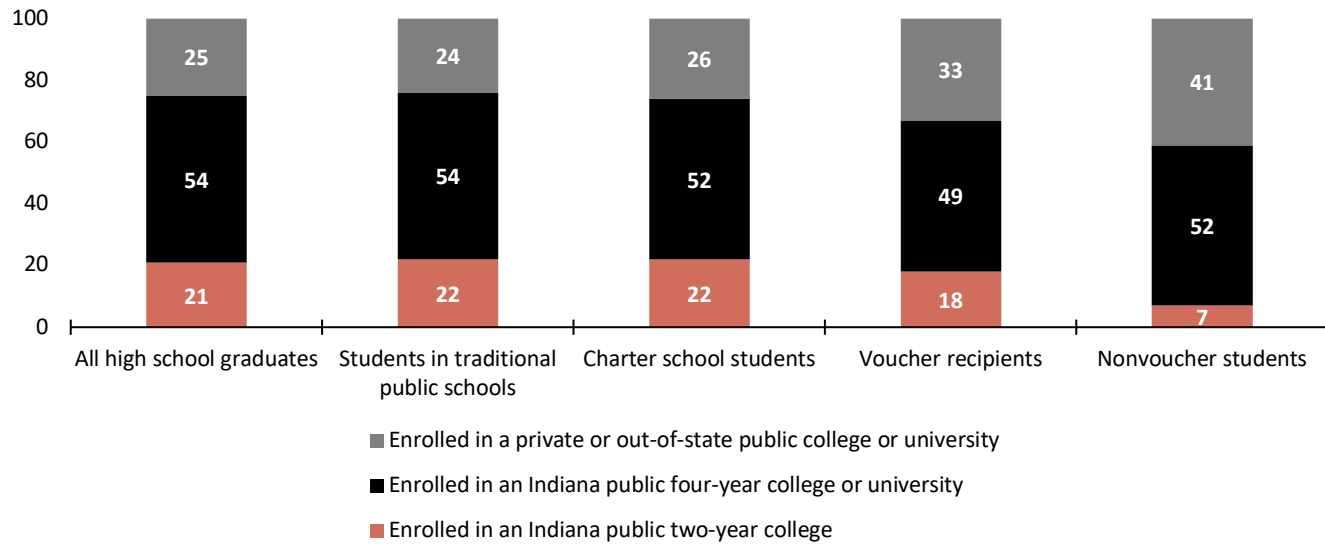
Note: *n* = 160,915.

Source: Authors' calculations using data provided by the Indiana Management Performance Hub.