

Understanding the Availability of Arts Education in U.S. High Schools

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Executive Summary

Introduction

Collectively, the arts education offered at the nation's public schools represents the largest investment by the American people in continuation of our aesthetic and artistic culture. The value and impact of schoolbased arts education reverberates through the entire nation's artistic economy and community: Data from the National Endowment's most recent Survey of Public Participation in the Arts confirms that formal, schoolbased arts education experiences in childhood are strongly associated with later adult arts engagement as creator, performer, patron, or donor/financial supporter (Elpus, 2015). Thus, arts education in schools is truly an investment in the artistic future of the nation.

And yet, arts education, which has overwhelming popular support in public opinion polls (Americans for the Arts, 2005), is not universally available in the nation's secondary schools. According to estimates from the National Center for Education Statistics (Parsad & Spiegelman, 2012), in the 2009-2010 school year formal music instruction was available at 91% of public secondary schools and formal visual art instruction was available at 89% of secondary schools. The availability of theater and dance instruction lagged considerably behind that of music and visual art: formal theater instruction was offered at 45% of American secondary schools; formal dance instruction was available at only 12% of secondary schools.

The purpose of the present study was to understand what contextual factors are associated with the comprehensiveness of a high school's arts offerings. We sought to go behind the "top line" numbers available in the Parsad & Spiegelman report by understanding what school characteristics were common to the schools that did—and did not—offer arts instruction in one or more of the four major arts disciplines of visual art, dance, music, and theater.

Study Methodology

We used data from the National Center for Education Statistics (NCES) *High School Longitudinal Study of 2009* (HSLs) to analyze the relationships between school factors and arts availability. Specifically, we examined the complete high school course catalogs available in the HSLs data to understand the availability of arts education at a nationally representative sample of 940 high schools that participated in HSLs. We gathered school characteristic information from the HSLs data, and where these were insufficient for any one school because of missing data issues, we instead used the school characteristics as reported annually to the US Department of Education as part of the Common Core of Data (for public schools) and Private School Study (for private schools). Prior to conducting our main analyses, we manually verified the course catalog data to ensure that all arts courses appearing in the dataset were properly coded in terms of the arts discipline and subarea. Data were analyzed using appropriate survey-adjusted categorical data analysis tools (Rao-Scott adjusted χ^2 and logistic regression) for both bivariate and multivariate analyses.

Key Findings & Implications

- The strongest and most consistent school factor related to arts availability—including the offering of *any* arts course and *each* of the arts disciplines considered individually—was school size. As the enrollment in a school increased, so too does the likelihood that the school offers a more comprehensive arts program. We cannot determine a reason for this association in the present study, though it seems reasonable to suspect that the economies of scale achieved in schools with larger student populations seem to make it more likely that schools could support staffing and facility space for arts programs. Although the

reason is not yet clear, those interested in promoting access to arts education should remain engaged with the school size debate—those advocating advantages for schools with smaller enrollments should be encouraged to ensure that arts courses remain available if smaller-school reforms are undertaken.

- Traditional public high schools, by far, have the greatest likelihood of offering arts education. Of all school types (public and private), public charter high schools had the least availability of arts education. Within the private school sector, Catholic schools far surpassed non-Catholic private schools in terms of arts availability. Charter school leaders should be pressed to increase the offering of arts education within their schools, as the lack of availability of comprehensive arts education seems to disadvantage charter school students in terms of access to a quality arts education in comparison to their traditional public school peers. Those promoting expansion of the charter school sector should be encouraged to ensure that the arts are a viable part of the curricula at future charter schools, especially given the status of music and the arts as enumerated parts of a “well rounded curriculum” as defined by the Every Student Succeeds Act, the current incarnation of federal public school law.
- Although prior research indicates there are arts education uptake variations by race and ethnicity, we *do not* find that the availability of any particular arts course significantly varies with the racial/ethnic composition of the school, except for music, where there was a slight relationship. However, no clear pattern of availability or lack of availability emerged, suggesting that future research within music specifically is warranted.
- The proportion of students eligible for free- or reduced price lunch is significantly related to the availability of the arts in America’s high schools; however, the relationship is

different for public schools and private schools. In the public high schools, as the proportion of students eligible for free or reduced price lunch increases, the likelihood of offering arts education *decreases*. In the private schools, this trend is reversed, and greater proportions of students eligible for free- or reduced-price lunch are associated with increased availability of the arts. This may be an artifact of the Catholic/non-Catholic private school divide where Catholic schools offer more arts classes than non-Catholic private schools. The Catholic high schools are more likely to serve greater proportions of poorer students than are the non-Catholic private schools. However, more research in this area is needed to clarify the root cause of this finding.

- Urbanicity (that is, a school's location in an urban, rural, or suburban area) was *not* significantly associated with whether or not a school would offer any visual art or music. However, dance and theater, which are considerably less available than visual art and music, are exceptionally underrepresented among the offerings of rural schools.
- Region of the country was not significantly associated with the availability of arts overall; however, descriptive results showed that different arts disciplines are more prevalent in different regions. The visual arts had the greatest availability in the Western United States, music had the greatest availability in the Midwest, while theater and dance had the greatest availability in the South.

Full Paper

Introduction

Collectively, the arts education offered at the nation's public schools represents the largest investment by the American people in continuation of our aesthetic and artistic culture. The value and impact of school-based arts education reverberates through the entire nation's artistic economy and community: Data from the National Endowment's most recent Survey of Public Participation in the Arts confirms that formal, school-based arts education experiences in childhood are strongly associated with later adult arts engagement as creator, performer, patron, or donor/financial supporter (Elpus, 2015). Thus, arts education in schools is truly an investment in the artistic future of the nation.

And yet, arts education, which has overwhelming popular support in public opinion polls (Americans for the Arts, 2005), is not universally available in the nation's secondary schools. According to estimates from the National Center for Education Statistics (Parsad & Spiegelman, 2012), in the 2009-2010 school year formal music instruction was available at 91% of public secondary schools and formal visual art instruction was available at 89% of secondary schools. The availability of theater and dance instruction lagged considerably behind that of music and visual art: formal theater instruction was offered at 45% of American secondary schools; formal dance instruction was available at only 12% of secondary schools.

Because of the overview nature of Parsad and Spiegelman's (2012) report, they offer little speculation or concrete justification for the uneven access to comprehensive arts education, other than to note that the offering of various arts disciplines consistently "varied by [a school's] concentration of poverty, measured by the percentage of students eligible for free or reduced-price lunch" (p. 14). Beyond the concentration of poverty among students served by a

school, there is little to no rigorous national research exploring the factors that are associated with schools offering comprehensive arts education programs or little to no arts education programs.

Though the data provided by Parsad and Spiegelman are useful, their report suffers one additional weakness when trying to understand how to support comprehensive arts education in schools: It was beyond the scope of their investigation to explore the comprehensiveness of their responding school's arts programs. That is, each discipline was categorized simply as being "offered" or "not offered," with no clear distinction made between schools that offered only one music or art course from those with sequential curricula in all four areas. From their work, then, it is impossible to understand from their report the full range of contextual factors which contribute to making a school's offered curriculum truly "arts rich" or "arts poor" (Ruppert & Nelson, 2006; Thomas, Singh, Klopfenstein, & Henry, 2013). For example, there are many documented cases of schools with high concentrations of student poverty offering exceptional arts education programs, such as the Turnaround Arts schools (Stoelinga, Silk, Reddy, & Rahman, 2015) and some of the A+ arts integration schools in North Carolina and elsewhere (Noblit, Corbett, Wilson, & McKinney, 2008). Other important contextual factors, such as state educational policies (e.g., arts graduation requirements), school size (in terms of enrollment), number of arts educators per capita, school urbanicity, and the average proportion of a school's graduating students going on to postsecondary education remain unexplored or explored only at the state level in the literature.

Longitudinal research of student outcomes has consistently suggested that when at-risk or not at-risk students engage in arts education, they outperform their non-arts peers on a host of educational, social, and behavioral outcomes (Catterall, Dumais, & Hampden-Thompson, 2012),

even when controlling for other demographics. Given that arts education is beneficial to at-risk and not at-risk youth, a clearer and more comprehensive picture of the status of arts education in the nation's high schools would, at the very least, help educational policymakers and arts philanthropists understand where investments in arts education are working and where future investments could be targeted for the greatest return. Yet this clear picture does not yet exist in the research literature. The proposed study seeks to address this gap in the evidence.

The purpose of this study was to develop a national profile of the availability of arts education in American high schools and to understand what contextual factors are associated with the comprehensiveness of high school arts offerings. Data were drawn from the complete course catalogs and school profiles of a nationally representative sample of schools included in the third followup (2013 data collection) of the NCES High School Longitudinal Study of 2009 (HSLS09). Specifically, the study will address the following descriptive and explanatory research questions:

(1) What is the proportion of high schools in the United States which offer curricular coursework in: music, visual art, dance, and theater? What types of courses are most commonly offered within each discipline (e.g., music: band, choir, orchestra, AP Music theory; visual art: 2D studio art, ceramics, sculpture; theater: acting, playwriting; dance: techniques, repertoire, choreography, etc.)?

(2) In schools where any arts courses are offered, what is the average number of arts courses and arts disciplines offered?

(3) How does the availability of arts education in American high schools vary by school characteristics and contextual factors? Specifically, how do arts offerings vary with: school control and type, school urbanicity, region of the country, school socioeconomic profile

(racial/ethnic composition, percent eligible for free/reduced lunch), school size (expressed in terms of student enrollment), and school schedule type (e.g., block vs. traditional)?

Method

Data Source and Preparation for Analysis. Data for the present study were drawn from two components of the High School Longitudinal Study of 2009 (HSLs), a large, nationally representative survey study of students and schools in the United States conducted by the U.S. Department of Education's National Center for Education Statistics (NCES). HSLs is the most recent data collection effort in NCES's ongoing series of national surveys on American secondary schools and students. HSLs traces a nationally representative cohort of American students ($N = 21,440$) who were freshmen (i.e., ninth graders) in one of 940 public and private high schools participating in the study during the 2009-2010 academic year. The sample for HSLs was complexly drawn in two stages: a series of randomly selected high schools from across the nation served as the primary sampling unit, and then students were randomly selected for participation from within the participating schools.

In addition to surveying students, HSLs surveyed a school administrator (typically the principal), a school counselor, and two teachers who were currently working with the sampled students. For HSLs, school characteristics were collected from school administrators and counselors as well as imputed from the Common Core of Data and the Private School Universe Survey, separate annual federal data collections of school information. Additionally, HSLs collected administrative data about the school's course offerings (i.e., course catalogs) in a later wave at the same time that sample members' high school transcripts were collected. In the present study, we make use of school-level data only—demographic and other characteristics

and the courses offered by the school—to generate a profile of the arts courses available in the nation’s public and private high schools. We use the appropriate school-level weight, as well as balanced repeated replication (BRR) variance estimation, to ensure that all reported quantities are nationally representative and robust to the sampling procedures employed by HSLs.

Course offering outcomes. As part of the student high school transcript data collection in the 2013 update wave to HSLs, NCES collected complete high school course catalogs from the participating schools. Course data from all catalogs, including verbatim course titles, credit level, and other pertinent course information, was recorded in an HSLs course offering dataset. NCES then applied “School Courses for the Exchange of Data” (SCED) coding to each course offered. We identified arts courses offered at each school on the basis of the SCED codes applied to the data.

As arts courses are not a main focus element of HSLs, we manually verified the coding on all courses that had been coded as arts courses (N of courses = 30,810) to ensure that the applied code indicated the correct arts discipline and subarea based on the verbatim course title. We corrected errors for a limited number of course where, in our expert opinion, codes had been misapplied. This was necessary because some arts courses titles may appear misleading to those without arts education expertise and are then consequently miscoded. For example, a course titled “Jazz Ensemble” would be immediately recognized by an arts education expert to refer to an instrumental ensemble despite the existence of, and codes for, vocal jazz ensembles. In the very few cases ($N < 150$) where the course titles remained ambiguous to us, we visited the school website to examine course offering and catalog descriptions that were publicly available.

Once course coding was verified, we determined which schools offered which courses and generated a set of binary indicator variables for each arts discipline (visual art, dance,

theater, and music) and for the key subareas within those disciplines. We use these binary indicator variables as the source of our descriptive data and as the outcome variables in our univariate and multivariate analyses of characteristics associated with the offering of arts courses.

Empirical Approach. Research Question (1). To answer Research Question (1), we computed the survey-weight-adjusted proportion of schools offering (1) any arts courses, (2) each of the four arts disciplines, and (3) each individual type of arts course—that is, the subareas within the arts disciplines. We computed the proportions separately for all high schools, for public high schools, for Catholic high schools, and for non-Catholic private high schools. We report the proportions as top-line percentages.

Research Question (2). To answer Research Question (2), we computed survey-weight-adjusted means for the number of courses and number of arts disciplines offered across all high schools in the nation. We report means, standard errors, and distributions.

Research Question (3). We answer Research Question (3) in two steps. First, we estimate univariate associations between school characteristics and the offering of any arts course and the offering of the specific arts disciplines. To compute these estimates for categorical school characteristics (such as the urbanicity of the school), we use the Rao-Scott adjusted χ^2 (Rao & Scott, 1984), a survey adjusted test of the independence of two categorical variables, analogous to the Pearson χ^2 statistic used to analyze data arising from a simple random sample. A significant result on the Rao-Scott statistic indicates that the characteristic in question is associated with arts course availability. For continuous characteristics, such as the

size of the school expressed in terms of student enrollment, we use a univariate survey-adjusted logistic regression model.

We further analyze the relative importance of each significant univariate characteristic by estimating multivariate survey-adjusted logistic regression models. In the multivariate models, we use as predictors any characteristic that was found to be associated with arts course offerings in the univariate analyses. Our outcome measure for these models is the offering of (1) any arts course, (2) any visual art course, (3) any dance course, (4) any theater course, and (5) any music course. From the logistic regression models, we compute coefficients, odds ratios, and predicted probabilities to understand the nature of the associations between school characteristics and the likelihood of offering the various arts courses.

Results

Availability of Arts Education in American High Schools. . We find that arts courses are not universally available in American high schools. We estimate that **82%** of all high schools in the nation offered at least one course in one or more of the four major arts disciplines: visual art, dance, theater, and music.

Among all public high schools, **88%** offered at least one arts course in any discipline. While **12%** of public high schools offered no arts instruction, **12%** offered only one of the four arts disciplines, **28%** offered two arts disciplines, **31%** offered three arts disciplines, and **17%** offered all four major arts disciplines. Not all public high schools in the United States are considered alike; public high schools are categorized into at least five major “types.” These types are regular (or traditional) public high schools, public charter high schools, special program or

magnet schools, vocational schools, and alternative schools. We find significant variation in the availability of arts education at public high schools by public school type, $F(3, 1090) = 10.4, p < .001$. Fully **92%** of traditional public high schools offered at least one arts course and **96%** of special program or magnet schools offered at least one arts course. Among alternative education schools, **83%** offered at least one arts course and **71%** of vocational high schools offered at least one arts course. Public charter schools, by far, have the lowest availability of arts courses: only **37%** of public charter high schools offered *any* arts instruction at all.

In private high schools, there were fewer opportunities for students to study the arts. Only **63%** of all private high schools offered any arts instruction. While **37%** of private schools offered no arts courses, **1%** offered only one of the four major arts disciplines, **28%** offered two arts disciplines, **26%** offered three arts disciplines, and **8%** offered all four major arts disciplines. Similar to the public schools, there was variation in arts course offerings by the type of private school. By far, Catholic schools make up the largest proportion of non-public high schools in the nation. Among Catholic high schools, **83%** offered at least one arts course; this is much closer to the public school availability than the overall private school availability indicates. The bulk of the disparity between the public schools and private schools is driven by the lower levels of arts availability in the non-Catholic private schools. Arts courses were only available in **57%** of non-Catholic private high schools.

Availability by Arts Discipline and Course. The four arts disciplines, and the subareas of courses within those disciplines, are not equally available in American high schools. Visual art was the most available arts discipline; at least one course in visual art was offered in **79%** of all high schools. Music was the second-most available arts discipline; at least one course in music

was offered in **74%** of all high schools. Courses in theater were available at **46%** of high schools. The availability of dance lagged far behind the other arts disciplines; courses in dance were offered in only **16%** of schools.

Among the four arts disciplines, availability varied by school characteristics. Tables 1 through 4 display the availability of arts courses within discipline across school control and, for private schools, whether the school was a Catholic school or a non-Catholic private school. Course titles in Tables 1 through 4 are categories of courses from each discipline as grouped by Secondary Courses for the Exchange of Data (SCED) Coding, version 4.0. Generally speaking, non-charter public high schools offered the greatest opportunities for arts study, followed by Catholic schools and non-Catholic private schools. Public charter schools consistently offered the fewest opportunities for students to study the arts.

Arts Course Counts. Across all schools, public and private, that offered at least one arts discipline, the average number of unique arts courses offered was 22.68 ($SE = 1.87$). In public schools with arts courses, the average number of unique courses offered was 24.81 ($SE = 2.25$). In private schools (both Catholic and non-Catholic) with arts programs, the average number of arts courses offered was smaller, 13.09 ($SE = 1.70$). Focusing only on the Catholic schools, the average number of arts courses available at schools with arts programs was 17.36 ($SE = 1.45$). Non-Catholic private schools with arts programs averaged 11.44 ($SE = 2.31$) unique arts courses.

Visual art. In public schools with visual art programs, the average number of unique visual arts courses offered was 9.98 ($SE = 0.82$). In private schools (both Catholic and non-Catholic) with visual arts programs, the average number of courses available was 6.89 ($SE = 0.77$). In the Catholic schools offering visual art, the mean number of unique courses was 8.39

($SE = 0.46$). At non-Catholic private schools offering visual art, the average number of visual art courses offered was 6.21 ($SE = 1.09$).

Music. In public schools with music programs, the average number of unique music courses offered was 12.55 ($SE = 1.34$). In private schools with curricular music, the average number of music courses offered was 4.76 ($SE = 0.66$). Among Catholic schools with music programs, the average number of music courses offered was 6.28 ($SE = 0.77$). In non-Catholic private schools offering any music, the average number of music courses offered was 4.21 ($SE = 0.87$).

Dance. In public schools with dance programs, the average number of unique dance courses offered was 5.75 ($SE = 0.97$). In private schools with dance programs, the average number of dance courses offered was 3.06 ($SE = 0.68$). At Catholic schools with dance programs, the average number of unique courses in dance offered was 3.94 ($SE = 0.60$). Among non-Catholic private schools offering dance courses, the average number offered was 2.16 ($SE = 1.38$).

Theater. In public schools with theater programs, the average number of unique theater courses offered was 5.22 ($SE = 0.55$). In private schools with theater programs, the average number of theater courses offered was 2.87 ($SE = 0.65$). In Catholic schools with theater programs, the average number of unique theater courses available was 3.66 ($SE = 0.40$). Among non-Catholic private schools with theater programs, the average number of theater courses offered was 2.62 ($SE = 0.86$).

School Control, School Type, and Arts Availability

School Control. In the descriptive results above, it is readily apparent that the public high schools tend to have greater availability of the various arts disciplines and courses than do private high schools as a whole. It is also clear that in most cases, the Catholic high schools have greater availability of arts education than do private high schools which are not affiliated with the Catholic church. Here, we apply statistical scrutiny to the availability of the arts by school control using the Rao-Scott adjusted χ^2 (Rao & Scott, 1984) to determine whether the differences in availability by school control are statistically significant.

Availability of any arts education. Table 5 summarizes the availability of any arts course and any course within the four major arts disciplines by school control. The differences in availability are statistically significant, $F(2, 310) = 13.08, p < .001$. Adjusted residuals indicate that lower availability in non-Catholic private schools is the largest significant contributor to the overall association between school control and arts availability.

Availability of visual art education. As seen in Table 5, the differences between availability of visual arts courses appears to vary by school control, with more public and Catholic high schools offering visual arts courses than non-Catholic private schools. The difference is statistically significant, $F(2, 290) = 14.24, p < .001$.

Availability of music education. Similar to visual arts education, Table 5 shows differences in availability of music education by school control, with fewer non-Catholic private high schools offering music courses than either public or Catholic high schools. The association between school control and music offering is statistically significant, $F(2, 290) = 4.27, p = .02$.

Availability of theater education. Theater courses are available at considerably fewer high schools than are courses in visual art or music. Accordingly, the differences among percentages of public, Catholic, and non-Catholic private schools that offer theater courses are

smaller, and the association between school control and theater availability was *not* statistically significant, $F(2, 330) = 1.2, p = .28$.

Availability of dance education. Although dance was by far the least available of the four major arts disciplines, there is a somewhat different pattern of dance availability by school control than for the other disciplines. Dance courses were most available in Catholic high schools, with 21% of Catholic high schools offering at least one credit-bearing dance course, as compared to 18% of public high schools and just 6% of non-Catholic private high schools. The association between school control and dance availability was statistically significant, $F(2, 350) = 6.07, p = .004$.

Public School Type. In the descriptive results above, there appears to be some evidence that arts availability in the public high schools may be associated with the specific type of high school. We note above that arts availability seems to be more prevalent in non-charter high schools than in charter high schools. Here, we subject this apparent disparity to statistical scrutiny using the Rao-Scott adjusted χ^2 (Rao & Scott, 1984) to determine whether the differences in availability by public school type are statistically significant. We further refine the analysis from the descriptive results above by categorizing public high schools in the HSLs sample into one of five possible “types:” (1) a regular, non-charter and non-magnet high school; (2) a charter high school; (3) a non-charter special program or “magnet” school; (4) a vocational or technical school; or (5) an alternative education school.

Availability of any arts education. Table 6 summarizes the availability of arts education courses, overall and by arts discipline, in public schools by type. The differences in availability

across public school types for any arts education are statistically significant, $F(3, 1090) = 10.41$, $p < .001$.

Availability of visual art education. As seen in Table 6, visual arts education is considerably less available in public Charter high schools than in public high schools of any other type. The difference is in visual art availability by public school type statistically significant, $F(3, 1090) = 7.92$, $p < .001$.

Availability of music education. Table 6 shows that among public schools, far fewer public charter high schools offer music than do regular high schools, magnet high schools, vocational/technical high schools, or alternative education high schools, with under 30% of public charter high schools offering even one credit-bearing course in music. The association between public school type and music offering is statistically significant, $F(3, 1030) = 6.32$, $p < .001$.

Availability of theater education. Theater courses, being available at fewer public high schools overall than visual art or music courses, present a somewhat different availability pattern than the other arts disciplines. While the theater was least available in public charter high schools (with only 30% of public charter schools offering any credit-bearing courses in theater), it was most readily available in vocational/technical high schools (63%). This is possibly due to greater technical theater coursework at vocational schools (courses such as lighting design, stagecraft, scenic design, and costume design) which are considered theater courses as coded in SCED and the need for attendant theater productions and courses to be supported by the theatrical technicians. Regular high schools had fewer opportunities to pursue theater curricularly, with only 51% of regular public high schools offering credit bearing courses in theater. Fewer than 1% of alternative high schools appear to have had curricular theater courses, though this may be

a sampling artifact due to the relatively low number of alternative high schools participating in HSLS. Overall, there was no statistically significant association between public school type and theater availability, $F(3, 1050) = 1.49, p = .22$.

Availability of dance education. Of the four arts disciplines, dance has the least availability in public schools, with 18% of regular public high schools, 11% of charter high schools, 31% of magnet high schools, less than 1% of vocational/technical high schools, and 28% of alternative high schools offering any credit bearing coursework in the discipline. Note, however, that the low percentage of vocational/technical high schools reported here may be an artifact of the HSLS data due to relatively low numbers of participating vocational schools in the dataset. The association between public school type and dance availability was not statistically significant, $F(3, 1060) = 0.56, p = .64$.

School Characteristics Associated with Arts Course Offerings in Public Schools

As we have seen, arts availability in American high schools is linked with school control (that is, the school's status as public or private), with the public schools generally having greater arts availability than the nation's private high schools. We sought to further understand how arts availability varied *within* the public school sector, and so we examined several important school characteristics to determine whether, when considered individually, they were associated with the availability of arts education or any of the arts disciplines. As we did with school control and school type earlier, we determined whether there was a bivariate relationship between each characteristic and the availability of arts education using the Rao-Scott adjusted χ^2 .

We were not only interested in the bivariate relationships, however. We also sought to understand the relative importance of each school characteristic on the likelihood that a given

school would offer curricular arts education when considered jointly with the other salient characteristics. To do so, we conducted a more sophisticated multivariate analysis—specifically, logistic regression. In this section of the report, we first present the bivariate analyses by school characteristic and then turn to the logistic regression results.

Bivariate Analyses

Urbanicity. Urbanicity refers to the status of the school’s location in terms of its population and its proximity to a major city. Using a framework relying on definitions used by the U.S. Census Bureau for the 2010 decennial census, the National Center for Education Statistics categorizes a school’s urbanicity in one of four ways: (1) city, (2) suburb, (3) town, or (4) rural. Generally speaking, Cities are large, urban centers with relatively high populations and population densities in what NCES refers to as a “principal city.” Suburbs are quite near, but outside the boundaries of, a “principal city,” but remain inside an “urbanized area.” The Census considers “urbanized areas” to be places with populations of 50,000 or more. Towns are located inside an “urban cluster,” outside the boundaries of a “principal city” and outside the boundaries of an urbanized area, but are generally located within 35 miles of an urbanized area. “Urban clusters” are places with a population greater than 2,500 but less than 50,000. Rural areas are defined by the Census Bureau as all areas not within an urbanized area or an urban cluster. Distance to the urbanized area is not a deciding factor in the designation of rurality: rural areas can be on the fringe of a urbanized area (within 5 miles), distant from an urbanized area (between 5 and 25 miles away), or remote to an urbanized area (greater than 25 miles away).

“Suburbs” and “Towns” are primarily differentiated by their location *within* (suburbs) or *outside* (towns) the urbanized area itself.

Urbanicity and availability of any arts education. Table 7 summarizes the availability of arts education by urbanicity. Public high schools located in cities had the lowest availability of arts coursework—78% of city schools offered at least one course in one of the four arts disciplines. This was less than the availability in suburban public high schools (90%), public high schools located in towns (90%), and in rural public high schools (91%). However, the differences in availability by urbanicity were not statistically significant, $F(3, 571) = 1.04, p = .37$.

Urbanicity and visual art education. As seen in Table 7, there was slight variation in the availability of visual art courses by urbanicity, with 90% of schools located in towns and suburbs offering at least one visual art course, compared to 86% of rural schools and 77% of city schools. The differences in availability of visual art education by urbanicity were not statistically significant, $F(3, 570) = 0.69, p = .55$.

Urbanicity and music. Descriptive results in Table 7 show that greater proportions of schools in towns and suburbs offered music courses than did the proportions of rural or city schools. The differences in availability were not statistically significant, $F(3, 540) = 0.90, p = .43$.

Urbanicity and theater. Urbanicity and theater offerings were significantly related, $F(3, 590) = 3.69, p = .01$. Although theater was less commonly available overall than music or visual art, theater was considerably more prevalent in schools located in suburbs (65%), cities (57%), and towns (54%) than at schools located in rural areas, where only 36% of schools offer curricular theater courses for credit.

Urbanicity and dance. The availability of dance courses was significantly related to school locale, $F(3, 530) = 8.90, p < .001$. Dance was available for credit at 33% of public high schools in the suburbs, 33% of public high schools in cities, but only 10% of schools located in towns and 9% of schools located in rural areas.

Region of the County. Schools in HSLS are geographically categorized using the Census-designated regions of *Northeast* (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont), *Midwest* (Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin), *South* (Alabama, Delaware, District of Columbia, Florida, Georgia, Kentucky, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, and West Virginia), and *West* (Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming).

Arts education availability by region. Table 8 summarizes the availability of any arts education and the various arts disciplines by region of the country. Public high schools in the western United States had the greatest availability of arts education; fully 97% of schools in the West offered at least one arts course. The differences by region in arts availability were not statistically significant, $F(3, 560) = 0.81, p = .48$.

Visual arts education availability by region. The western United States had the greatest availability of visual arts education in the public high schools—97% of public high schools in the West offer at least one credit bearing course in the visual arts. In the Northeast, 85% of schools offered at least some visual art, followed by 83% of schools in the Midwest and 82% of

schools in the South. The differences by region were not statistically significant, $F(3, 560) = 1.00, p = .39$.

Music availability by region. The pattern of availability for music courses by region of the country was sharply different than the pattern for visual art instruction. Whereas visual art education was available in 97% of high schools in the West, music courses were only available at 59% of public high schools in the West. The greatest proportion of music availability was in the Midwest, where 85% of schools offered at least one credit bearing course in music, followed by the Northeast (82%) and the South (81%). The differences by region were not statistically significant, $F(2, 470) = 1.28, p = .28$.

Theater availability by region. The pattern of availability for theater courses differed from that of music and visual art courses. More public high schools located in the South (61%) offered theater courses for credit than did schools in the West (56%), Northeast (41%), or Midwest (33%). However, similar to the other disciplines, the disparities by region were not statistically significant, $F(2, 360) = 1.83, p = .17$.

Dance availability by region. Region of the country was significantly associated with the availability of curricular dance courses, $F(3, 500) = 4.02, p = .01$. Dance was available at 28% of public high schools in the South, 25% of public high schools in the West, 10% of public high schools in the Midwest, and just 7% of public high schools located in the Northeast.

Proportion of Students Receiving Free or Reduced Price Lunch. The proportion of students in a public school receiving free or reduced-price lunch (FRL) through the National School Lunch Program is a frequently-used proxy for the socioeconomic status of the community served by a public school (Harwell & LeBeau, 2010). Although it is not a perfect

proxy for the community's socioeconomic status, it is a useful benchmark that can be used to approximate the amount of poverty *concentrated* within the neighborhoods served by any one school. This is a key concept in educational research because concentrated poverty has been shown to be associated with poor educational outcomes (Iceland & Hernandez, 2017).

Availability of any arts education and FRL. As the percentage of students eligible for FRL increases, the likelihood that a public school will offer any arts education courses decreases, slightly for each marginal one-unit change in percentage, but significantly (coefficient = -0.03, OR = .97, $p = .02$). Marginal predicted probabilities based on the bivariate logistic regression model show that a public high school with 0% of students eligible for FRL has a 97% chance of offering at least one credit-bearing arts course, whereas a school with 50% of students eligible for FRL has only an 89% chance of offering any arts courses. Public schools with 100% of students eligible for FRL have only a 68% chance of offering any arts courses. Figure 1 shows the probability of a public high school offering any arts course as a function of the percentage of students within the school who are eligible for FRL.

Visual art education and FRL. As the percentage of students eligible for FRL increases, the likelihood that a public high school offers visual art decreases slightly, but statistically significantly (coefficient = -.02, OR = 0.98, $p = .03$). Marginal predicted probabilities based on this bivariate logistic regression model show that a public school with 0% of students eligible for FRL has a 95% chance of offering a visual arts course, while a school with 50% of students eligible for FRL has only an 86% chance of offering a visual arts course, and a school with 100% of students eligible for FRL has only a 66% chance of offering any visual arts. Figure 2 shows the probability of a public high school offering any arts course as a function of the percentage of students within the school who are eligible for FRL.

Music education availability and FRL. The availability of music courses was significantly linked to the percentage of students in a school eligible for FRL (coefficient = $-.02$, OR = $.98$, $p = .01$). Schools with no students eligible for FRL had a $.90$ probability of offering music for credit, whereas schools with 50% of students eligible for FRL had only a $.78$ probability. Schools where 100% of students were eligible for FRL had only a $.58$ probability of offering credit bearing courses in music. Figure 3 shows the relationship between the probability of offering courses in music and the percentage of students in a public school eligible for FRL.

Theater education and FRL. Unlike the disciplines of music and visual art, the availability of theater courses at public high schools did not vary significantly by proportion of students eligible for FRL (coefficient = $-.009$, OR = $.99$, $p = .09$). Although theater courses were available at fewer schools serving greater proportions of students eligible for FRL, the overall smaller number of schools offering theater does not allow the disparity to be measured with enough precision to be statistically significant.

Dance education and FRL. The availability of dance courses was not significantly associated with the proportion of students in the school eligible for FRL, $F(9, 2880) = 1.18$, $p = .31$.

Student Racial/Ethnic Composition. Racial composition and availability of any arts courses. The proportion of students within a public high school who identify as White or another race/ethnicity was not significantly associated with the offering of any arts education courses, $F(4, 1180) = 1.52$, $p = .20$.

Racial composition and availability of visual art courses. The proportion of students within a public high school who identify as White or another race/ethnicity was not significantly associated with the offering of visual arts education courses, $F(4, 1150) = 1.31, p = .26$.

Racial composition and availability of music courses. The racial composition of schools was significantly associated with the offering of music courses, $F(5, 1780) = 3.93, p = .001$. Generally, as the proportion of white students in a school increases, the likelihood of the school offering music courses increases; however, there is an interesting turn in the proportion of schools offering music: as the proportion of white students in a school exceeds 70%, the likelihood of offering music courses begins to decrease. It is possible that other variables account for this pattern; for example, schools genuinely enrolling 100% white students may be located in poorer areas than schools that are predominantly white but still have some measurable amount racial and ethnic diversity. It is also possible that this is a cohort effect or sampling artifact of the schools in HSLS. Further research on this question is needed.

Racial composition and availability of theater courses. The proportion of students within a public high school who identify as White or another race/ethnicity was not significantly related to the availability of theater courses, $F(5, 1820) = 1.97, p = .07$.

Racial composition and availability of dance courses. The proportion of students within a public high school identifying as White or another race/ethnicity was not significantly associated with the offering of dance courses, $F(3, 960) = 2.34, p = .07$.

School Schedule. Arts educators have often worried that changes from a “traditional schedule” (e.g., an 8- or 9-period school day) to a “block schedule” (e.g., a schedule featuring fewer courses per day taught in longer time periods) might lead to reduced uptake and

availability of arts education courses within schools. Administrators at HSLs schools were asked to indicate if their schools followed a “traditional” schedule, a “block” schedule, or a combination featuring elements of both block and traditional scheduling.

Availability of any arts education and scheduling paradigm. The availability of any arts courses in any discipline was not significantly associated with a public high school’s indicated scheduling paradigm, $F(2, 640) = 2.62, p = .07$. Despite the lack of statistical association between scheduling and arts availability, arts programs were somewhat rarer at schools that had moved to some form of block or combined scheduling. While arts courses were available at 94% of public high schools with traditional schedules, arts courses were only available at 81% of schools with block schedules and 81% of schools with combined schedules.

Availability of visual arts education and scheduling paradigm. Similar to the offering of any arts education courses, the availability of visual arts education coursework in a school was not significantly associated with the school’s scheduling paradigm, $F(2, 680) = 0.83, p = .43$. Despite the lack of statistical significance, a greater proportion of schools on traditional schedules offered visual arts courses than did the proportions of schools with block or combined scheduling. Of schools with traditional schedules, 90% of them offered at least one credit-bearing visual arts course, while 80% of block scheduling schools and 80% of combined block/traditionally scheduled schools offered visual art courses.

Availability of music education and scheduling paradigm. A slightly greater proportion of schools on traditional schedules offered music (80%) than did schools on block (76%) or combined schedules (72%). However, the differences were small enough that the availability of music courses and school scheduling paradigm were not significantly associated, $F(2, 620) = 0.24, p = .76$.

Availability of theater education and scheduling paradigm. Scheduling paradigm and theater offerings were not significantly related, $F(2, 680) = .42, p = .65$.

Availability of dance education and scheduling paradigm. Scheduling paradigm and dance offerings were not significantly related, $F(2, 690) = 1.76, p = .17$.

School Size. School size, and its attendant effect on student-level outcomes, has been an area of inquiry in educational research for at least the past fifty years. Evidence from educational research has, at times, favored smaller high schools of 600 or fewer (Leithwood & Jantzi, 2009) or “medium” high schools of 600 to 900 students (Lee & Smith, 1997). Others have pointed out that smaller schools may have less comprehensive curricula or suffer from administrative and bureaucratic hurdles that are not smaller than large schools (Monk & Haller, 1993). We examined the association between public high school size and arts course offerings using bivariate logistic regression.

School size and any arts offerings. Schools of 200 students were estimated to have about a .86 probability of offering at least one arts course of any type, while schools of 1000 had a .90 probability of offering at least one arts course and schools of 4000 had a .97 probability of offering at least one arts course in any discipline. Although the trend clearly showed greater probabilities of arts offerings at larger high schools, the effect of school size on the overall probability was not statistically significant (coefficient = .0004, OR = 1.0004, $p = .18$).

School size and visual arts offerings. Schools of 200 students were estimated to have about a .82 probability of offering at least one visual art course, while schools of 1000 students had a .88 probability and schools of 4000 had a .98 probability of offering at least one visual art course. Though there is an evident trend toward greater probability of offering visual art courses

in larger schools, the bivariate logistic regression model was not statistically significant (coefficient = .0006, OR = 1.0006, $p = .08$).

School size and music offerings. School size and music offerings were significantly associated with each other; larger schools had a greater probability of offering music courses than did smaller schools (coefficient = 0.0014, OR = 1.0014, $p = .003$). Schools with 200 students had a .67 probability of offering at least one credit-bearing music courses, while schools of 1000 had a .87 probability. Schools of 2800 or more had a .99 probability of offering credit-bearing music courses. The bivariate relationship between school size and the probability of offering a music course is shown in Figure 4.

School size and theater offerings. School size was significantly related to the probability that a school would offer credit-bearing curricular theater (coefficient = .002, OR = 1.002, $p < .001$). Schools of 200 had only a .25 probability of offering theater for credit, while schools of 1000 had a .64 probability. Schools of 3000 or more had a .99 probability of offering theater courses for credit. The strong bivariate relationship between school size and the probability of offering a theater course is shown in Figure 5.

School size and dance offerings. Similar to all of the other analyses of school size, dance availability was significantly associated with school size (coefficient = .002, OR = 1.002, $p < .001$). A public high school of 200 students had only a 7% probability of offering curricular dance for credit, while schools of 1000 had a 19% probability. Schools of 2000 had a 52% chance of offering dance and schools of 3400 or more had a 90% or greater probability of offering dance courses. Figure 6 shows the relationship between school size and the probability of offering a dance course.

Multivariate Analyses

Through all of the bivariate analyses, only a few key school characteristics were consistently associated with a school's offering of any arts education or any one of the four major arts disciplines. These were (1) the school's status as a regular public school high school, a public charter high school, or a private school; (2) the proportion of students within the school eligible for free- or reduced-price lunch; and (3) the size of the school as expressed by total student enrollment. To better understand the relationships among these variables and the offering of arts courses, we estimated logistic regression models for the following theoretical model:

$$\ln \left[\frac{P(\text{Offer}_j)}{1 - P(\text{Offer}_j)} \right] = \alpha + \beta_1 \text{PercentFRL}_j + \beta_2 \text{PublicSchool}_j + \beta_3 \text{PercentFRL}_j \times \text{PublicSchool}_j \\ + \beta_4 \text{Charter}_j + \beta_5 \text{TotalEnrollment}_j$$

where $P(\text{Offer}_j)$ is the probability that school j would offer arts courses (or a course in one of the arts disciplines), PublicSchool_j is a binary indicator variable set to 1 if the school is public high school and 0 if the school is a private high school, PercentFRL_j is the percentage of students in the school eligible for free- or reduced-price lunch, Charter_j is a binary indicator variable set to 1 if the school operates as a charter school, and TotalEnrollment_j is the total reported enrollment of the school in the 2009-2010 school year. The interaction term between PercentFRL_j and PublicSchool_j allows the effect of free and reduced price lunch to vary between the public and private schools, as exploratory analyses suggested it did. We estimated this model using logistic regression.

School characteristics and the offering of any arts. Table 9 presents the results of the logistic regression models for the offering of any arts course and any arts course within each of the four major disciplines. As seen in model (1) of Table 9, which is the model for the relationship among school characteristics and the offering of any curricular arts instruction,

public schools were **17 times** more likely to offer arts courses than were non-public schools. However, charter schools were considerably less likely than non-charter schools to offer any arts courses; charter schools were **93% less likely** to offer any arts instruction than were non charter schools. There was a significantly different relationship between students eligible for free- or reduced price lunch in private and public schools. As the percentage of FRL students in a public school increased, the likelihood that school would offer any arts instruction decreased; however, in the private schools the trend was reversed and more lower SES students in a school increased the potential that arts would be offered. This trend is possibly an artifact of the Catholic/non-Catholic school divide noted earlier: Catholic high schools are more likely to offer the arts *and* more likely to serve more students of lower socioeconomic statuses than are the non-Catholic private schools.

Logistic regression models interpreted as odds ratios are sometimes unintuitive to understand due to the multiplicative (rather than additive) nature of odds ratios. As such, to better understand the models we present, we have calculated from our models the predicted probabilities that a school would offer the arts as a function of the various characteristics. The overall probability that any school (public or private) would offer arts instruction was .83. In the public high schools, the probability was .90 and in the private schools it was .79. In non-charter schools, the probability that a school would offer the arts was .85, but in charter schools, the probability was only .38. For each 1,000 additional students enrolled in a school, the probability that the school offered the arts increased by roughly .05. In the smallest schools, the probability that the school would offer any arts instruction was .80, while in the largest schools the probability was .97.

We constructed a set of visualizations using our predicted probabilities to further demonstrate the relationships between school characteristics and the likelihood of offering arts instruction. Figure 7 shows the relationship between FRL and the likelihood of offering an arts course for both public and private high schools. Figure 8 shows the relationship between school size and the offering of arts programs for public and private schools. Figure 9 shows the relationship between FRL student proportion and the likelihood of offering any arts instruction in the public schools only, separated into charter and non-charter public high schools. Figure 10 shows the relationship between school size and the likelihood of offering any arts instruction for the public high schools only, separated into charter and non-charter public high schools.

School characteristics and offering visual art. Model (2) in Table 9 presents the results of the logistic regression examining the probability of offering visual arts instruction as a function of various school characteristics. Public schools were **13** more times likely to offer visual art instruction for credit than were non-public schools. Charter schools lagged behind non-charter schools in the offering of visual art — charter schools were **91% less likely** than other schools to offer any visual art instruction for credit. School size was significantly related to the probability that a school would offer visual arts instruction as was the proportion of students within the school eligible for free- or reduced-price lunch, even when controlling for school size and the other characteristics included in the model.

Predicted probabilities computed from the logistic regression model further explain these relationships. Whereas all schools considered together had a .79 probability of offering any visual art instruction, the probability for public high schools was .88 and the probability for private schools was .78. Charter schools had only a .39 probability of offering any visual arts instruction. For each additional 1,000 students in a school, the probability that visual arts would

be offered increased by .08, with the smallest observed schools having a .74 chance of offering visual art and the largest schools observed having a .99 probability.

Visualizations of the relationships among these variables and the offering of visual arts courses are presented in Figures 11, 12, 13, and 14. Figure 11 shows the relationship between FRL and the likelihood of offering a visual arts course for both public and private high schools. Figure 12 shows the relationship between school size and the offering of visual arts courses for public and private schools. Figure 13 shows the relationship between FRL student proportion and the likelihood of offering visual arts instruction in the public schools only, separated into charter and non-charter public high schools. Figure 14 shows the relationship between school size and the likelihood of offering any arts instruction for the public high schools only, separated into charter and non-charter public high schools.

School characteristics and offering music. Model (3) in Table 9 presents the results of the logistic regression for the likelihood that a school would offer any courses in music based on the school's characteristics. Public schools were more likely to offer music than non-public schools, but the gap was considerably smaller than for visual art. Predicted probabilities (see Figure 15) show that the difference between public and private schools matched on school size is quite small. Charter schools were again less likely than non-charter schools to offer music—charter schools were **89% less likely** than non-charter schools to offer music courses. Unlike visual art, the proportion of students in a school who were eligible for FRL was *not* significantly related to music offering once other school characteristics are controlled.

Predicted probabilities from the model show that among all high schools there was a .75 probability of offering any music. In charter schools, the probability was considerably less—charter high schools had only a .35 probability of offering music courses for credit. As school

size increased, so did the probability that a school would offer music courses. For each additional 1,000 students enrolled in a school, the probability rose .17. The smallest schools observed had a .60 chance of offering music while the largest schools observed had a .999 probability of offering at least one curricular music course.

Visualizations of the relationships among these variables and the offering of visual arts courses are presented in Figures 15 and 16. Figure 15 shows the relationship between school size and the offering of music courses for public and private schools. Figure 16 shows the relationship between total school enrollment and the likelihood of offering music in the public schools only, separated into charter and non-charter public high schools. The disparity between regular public high schools and public charter high schools in terms of music availability is quite apparent.

School characteristics and offering theater. Model (4) in Table 9 presents the results of the logistic regression for the likelihood that a high school would offer any courses in theater. Since theater is far less common than either music or visual art, fewer school characteristics are significantly related to the offering of theater than they are to the offering of visual art or music. In fact, as Table 9 shows, only school size, as expressed in terms of total school enrollment, is a significant predictor of whether a school would or would not offer a theater course. An increase of 1,000 students was associated with a .37 gain in probability. The smallest schools observed had a .20 chance of offering any theater for credit while the largest schools observed had a .999 probability of offering at least one curricular theater course.

Figure 17 shows the strong connection between school size and the probability that a school would offer a theater course, for the public and private schools separated. As evident in

Table 9 and in the visual, there is no significant difference between public and private schools for this relationship.

School characteristics and offering dance. Model (5) in Table 9 presents the logistic regression results for the likelihood that a high school would offer any courses in dance. Similar to theater, as dance is the least commonly available art form, there were not very many school characteristics that were significantly related to the offering of dance, with the notable exception of school size. As school size increased by 1,000 students, the probability that a school would offer curricular dance increased .24. The smallest schools observed had only a .05 probability of offering any dance, whereas the largest schools observed had a .99 probability of offering dance courses for credit. The relationship between school size and the likelihood of offering dance is shown in Figure 18. The “inflection point” in Figure 18 where a school becomes more likely to offer dance than not to offer dance is at a school size of approximately 2,100 students.

Discussion

The most important findings from the present study are (1) the relationship of school size to the comprehensiveness of arts offerings, (2) the stark lack of arts availability in public charter high schools compared to traditional public high schools, and (3) the relationship between arts availability and student socioeconomic status.

Whereas Parsad and Spiegelman (2012) reported on the availability of the arts in terms of school socioeconomic status, the present study is the first to explore the relationship between school size and arts offerings. Prior research on school size has, at times, favored larger schools or smaller schools (Leithwood & Jantzi, 2009), there is evidence in the research literature that suggests larger schools have more comprehensive offerings (Haller, Monk, Bear, Griffith, &

Moss, 1990; Monk & Haller, 1993). Although past research has not considered the arts in this way, it is clear, at least in the HSLC cohort, that larger schools afford their students more opportunities to study the arts. Arts advocates should become familiar with the relationship between arts availability and school size to more adequately advocate for the inclusion of arts programs in smaller high schools. Arts researchers, too, should investigate this relationship more fully to understand the nature of the association—be it economic or otherwise—and to suggest policy prescriptions for the future, especially given the elevated status of the arts under the federal Every Student Succeeds Act.

The difference in arts availability by school type also bears future research attention. The evidence from the present study suggests that students at traditional public high schools are afforded considerably more access to arts education than are students at charter high schools. This echoes some limited past research within the field of music (Austin & Russell, 2008; Elpus, 2012), but to date there is a paucity of published research on the status of arts education programs in charter schools. As charter high schools become an option for greater numbers of American students, arts education researchers should pay attention to what is or is not happening with the sector. Policymakers and parents, too, should hold charter school operators accountable for providing their students the “well-rounded curriculum” envisaged by ESSA for American students, which includes music and the other arts.

Some past arts education research on uptake has found that there is differential arts course enrollment by race/ethnicity in arts education courses (Elpus, 2015); this line of research is particularly well-established in the discipline of music (Elpus, 2013; Elpus & Abril, 2011). The present study adds interesting context to the homogeneity of music and arts students. Here, we find that arts courses are not necessarily less available at schools that serve greater

proportions of students of color. It is an interesting exercise to speculate how relatively equitable *access* still yields differential *uptake*. The first speculation must be one of a necessary limitation on the present study—the source data itself. Here, we examine course offerings of schools as listed in their official course catalog. It is of course possible that schools serving greater proportions of students of color may list arts courses on their official catalogs that are nonetheless not regularly offered. This would explain a disparity in supposed *access* (because courses are “on the books,” even if not actually offered) and *uptake* (because courses not actually offered would *not* appear on student transcripts, which is the source of the data used in arts uptake studies. Another possibility is that students of color are somehow prevented or barred from electing to take the arts courses that are truly offered in their schools, either because they are instead shuffled toward remedial or “test prep” courses, as race/ethnicity has been linked to differential standardized test scores (Beveridge, 2009). There is at least some evidence for this possibility within the discipline of music (Elpus, 2014). Yet another possibility is that students of color simply choose other subjects when presented with a menu of options for their scarce high school elective time, either due to personal preference, parental pressure, or some other intrinsic or extrinsic influence. Clearly, more research is needed to sort among these many possibilities.

Tables

Table 1. Percentages of American High Schools Offering Visual Arts Courses

Course	All Schools	Public Schools	Private Schools	Catholic Schools	Non-Catholic Private Schools
Any Visual Art	79%	86%	56%	83%	50%
Comprehensive Art	59%	64%	43%	58%	39%
Drawing or Painting	42%	43%	39%	59%	34%
Ceramics	30%	33%	22%	33%	19%
Photography	27%	30%	15%	26%	13%
Sculpture	20%	22%	14%	33%	10%
Art Portfolio	19%	22%	11%	30%	6%
Art History	14%	16%	9%	19%	6%
Art Appreciation	12%	14%	4%	15%	1%
Visual Communication	12%	13%	7%	16%	5%
Cinematography/Videography	12%	13%	10%	16%	8%
AP Art History	11%	12%	8%	11%	7%
AP Drawing	11%	12%	7%	18%	4%
AP 2-dimensional	10%	13%	4%	13%	1%
Crafts	9%	10%	8%	13%	7%
Multimedia	9%	10%	5%	9%	5%
Animation	9%	9%	6%	1%	7%
Printmaking	8%	9%	4%	6%	4%
AP 3-dimensional	8%	8%	6%	6%	< 1%
Advertising Design	5%	6%	< 1%	< 1%	< 1%
Jewelry	4%	5%	< 1%	< 1%	< 1%
IB Art	3%	4%	< 1%	1%	< 1%
Textiles	2%	3%	< 1%	< 1%	< 1%
Calligraphy	1%	1%	< 1%	4%	< 1%

Note. The difference in proportions between public and private schools offering any visual art is significant, $F(1, 290) = 14.24, p < .001$. Among public schools, 63% of charter schools offered at least one visual arts course and 89% of non-charter schools offered at least one visual arts course. The difference is significant, $F(1, 200) = 16.90, p < .001$. Cell sizes among charter schools are too small to estimate the specific course types.

Table 2. Percentages of American High Schools Offering Music Courses

Course	All Schools	Public Schools	Private Schools	Catholic Schools	Non-Catholic Private Schools
Any Music Course	74%	78%	62%	80%	57%
Band	65%	73%	40%	65%	34%
Choir	65%	69%	53%	74%	48%
Music Theory (including AP)	29%	31%	21%	32%	18%
General Music	27%	29%	20%	20%	20%
Orchestra	18%	21%	9%	16%	7%
Guitar	11%	14%	4%	10%	3%
Piano	11%	13%	4%	13%	1%
Music Technology	7%	9%	2%	2%	2%
Individual Instrument Lessons	7%	8%	6%	11%	5%
IB Music	3%	4%	< 1%	1%	< 1%
World Music Ensemble	2%	3%	2%	1%	2%
Composition/Songwriting	2%	3%	< 1%	1%	< 1%

Note. The difference in proportions between public and private schools offering any music is significant, $F(1, 290) = 4.26, p = .02$. Among public schools, 27% of charter schools offered at least one music course and 81% of non-charter schools offered at least one music course. The difference is significant, $F(1, 200) = 17.50, p < .001$. Cell sizes among charter schools are too small to estimate the specific course types.

Table 3. Percentages of American High Schools Offering Theater Courses

Course	All Schools	Public Schools	Private Schools	Catholic Schools	Non-Catholic Private Schools
Any theater	46%	48%	39%	45%	37%
Theater Arts	28%	28%	27%	26%	27%
Comprehensive Theater	19%	21%	14%	15%	14%
Acting	16%	17%	11%	19%	8%
Stagecraft	15%	17%	9%	19%	6%
Musical Theater	6%	7%	4%	11%	2%
Theater Production	5%	6%	3%	3%	3%
Directing	3%	3%	3%	4%	2%
Playwriting	2%	2%	2%	3%	2%
Theater History	2%	2%	2%	1%	2%
IB Theater	2%	3%	< 1%	< 1%	< 1%

Note. The difference in proportions between public and private schools offering any theater was not significant, $F(2, 330) = 1.26, p = .28$. Among public schools, 30% of charter schools offered at least one theater course and 49% of non-charter schools offered at least one theater course. The difference was not significant, $F(1, 200) = 1.56, p = .21$. Cell sizes among charter schools are too small to estimate the specific course types.

Table 4. Percentages of American High Schools Offering Dance Courses

Course	All Schools	Public Schools	Private Schools	Catholic Schools	Non-Catholic Private Schools
Any dance	16%	18%	9%	21%	6%
General Dance	12%	14%	5%	16%	2%
Dance Technique (e.g., ballet, jazz, modern, etc.)	5%	6%	5%	8%	4%
Choreography	4%	4%	< 1%	4%	< 1%
Dance Repertoire	3%	3%	2%	8%	< 1%
World Dance	2%	2%	< 1%	< 1%	< 1%
Dance Improvisation	1%	2%	< 1%	< 1%	< 1%
Dance History/Appreciation	< 1%	< 1%	< 1%	< 1%	< 1%
IB Dance	< 1%	< 1%	< 1%	< 1%	< 1%

Note. The difference in proportions between public and private schools offering any dance is significant, $F(2, 350) = 6.07$, $p = .004$. Among public schools, 11% of charter schools offered at least one dance course and 18% of non-charter schools offered at least one dance course. The difference was not significant, $F(1, 200) = 0.69$, $p = .41$. Cell sizes among charter schools are too small to estimate the specific course types.

Table 5. Percentages of High Schools Offering Courses in the Arts Disciplines by School Control

Course	Public Schools	Catholic Schools	Non-Catholic Private Schools
Any Arts Course**	88%	83%	57%
Any Visual Arts Course**	86%	83%	49%
Any Music Course*	78%	80%	57%
Any Theater Course	48%	45%	37%
Any Dance Course	18%	21%	6%

Note. ** indicates availability is significantly associated with school control, $p < .001$.

* indicates availability is significantly associate with school control, $p = .02$

Table 6. Percentages of Public Schools Offering Courses in the Arts Disciplines By School Type

Course	Regular High School	Charter High School	Special Program or Magnet School	Vocational or Technical School	Alternative Education School
Any Arts Course*	92%	37%	96%	71%	83%
Any Visual Arts Course*	89%	37%	96%	60%	82%
Any Music Course*	81%	27%	96%	63%	51%
Any Theater Course	51%	30%	49%	63%	< 1 %
Any Dance Course	18%	11%	31%	< 1%	28%

Note. * indicates availability is significantly associated with public school type, $p < .001$.

Table 7. Percentages of Public Schools Offering Courses in the Arts Disciplines By Urbanicity

Course	City	Suburb	Town	Rural
Any Arts Course	78%	90%	90%	91%
Any Visual Arts Course	77%	90%	90%	86%
Any Music Course	72%	87%	86%	74%
Any Theater Course	57%	65%	54%	36%
Any Dance Course	33%	33%	10%	9%

Table 8. Percentages of Public Schools Offering Courses in the Arts Disciplines By Region of the Country

Course	Northeast	Midwest	South	West
Any Arts Course	86%	89%	84%	97%
Any Visual Arts Course	85%	83%	82%	97%
Any Music Course	82%	85%	81%	59%
Any Theater Course	41%	33%	61%	57%
Any Dance Course	7%	10%	28%	25%

Table 9. Logistic Regression Models for Offering of Arts Courses by Discipline

	(1)	(2)	(3)	(4)	(5)
	Any Arts	Visual art	Music	Theater	Dance
Percent of students eligible for FRL	1.03 [0.03] (.293)	1.04 [0.03] (.215)	1.03 [0.03] (.285)	0.99 [0.02] (.698)	0.99 [0.02] (.667)
Public School	17.18*** [13.45] (< .001)	13.11*** [10.41] (.001)	3.87* [2.41] (.030)	0.89 [0.36] (.775)	0.91 [0.53] (.868)
Public School × Percent FRL	0.95* [0.03] (.088)	0.95* [0.03] (.082)	0.96 [0.02] (.106)	1.00 [0.02] (.995)	1.01 [0.02] (.683)
Charter School	0.07** [0.06] (.001)	0.09** [0.08] (.003)	0.11** [0.09] (.006)	0.74 [0.56] (.692)	1.15 [0.82] (.846)
Total School Enrollment	1.0005 [0.00] (.144)	1.0008 [0.00] (.054)	1.002** [0.00] (.009)	1.002*** [0.00] (< .001)	1.002*** [0.00] (< .001)
Constant	1.30 [0.62] (.580)	0.86 [0.43] (.765)	0.94 [0.45] (.900)	0.33*** [0.08] (< .001)	0.05*** [0.02] (< .001)

Note. Coefficients expressed as odds ratios. Standard errors in brackets, *p*-values in parentheses.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Figures

Figure 1

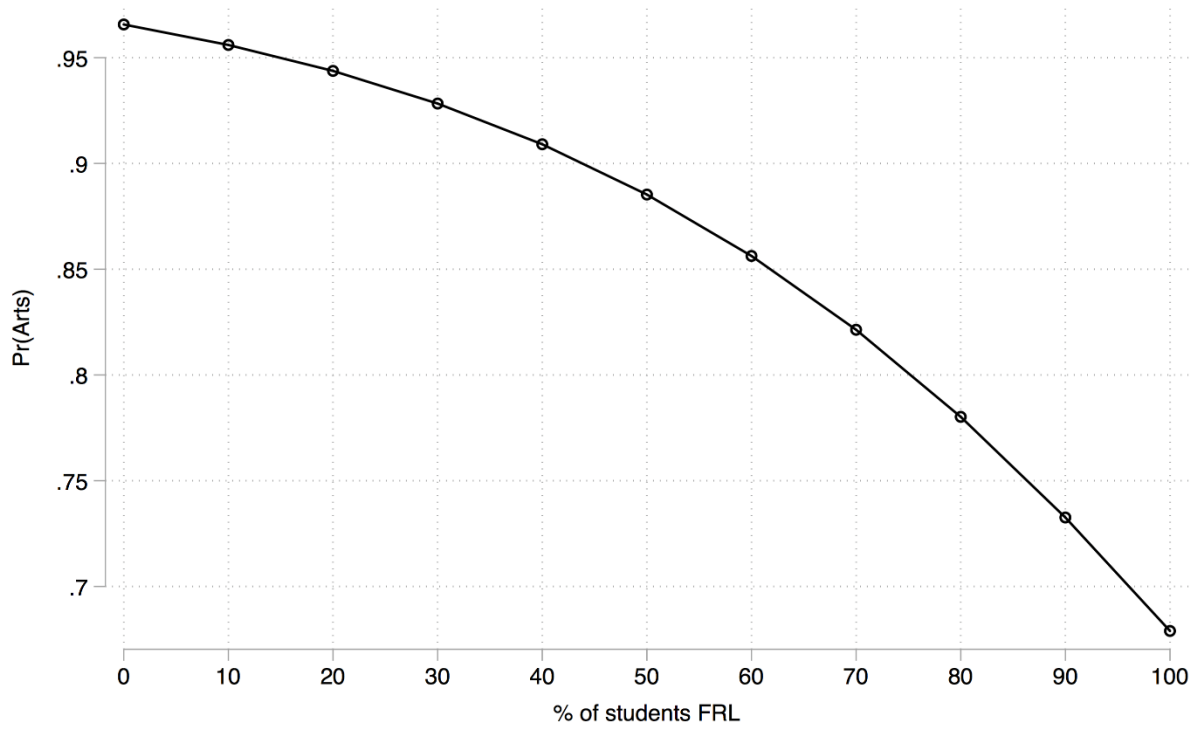


Figure 2

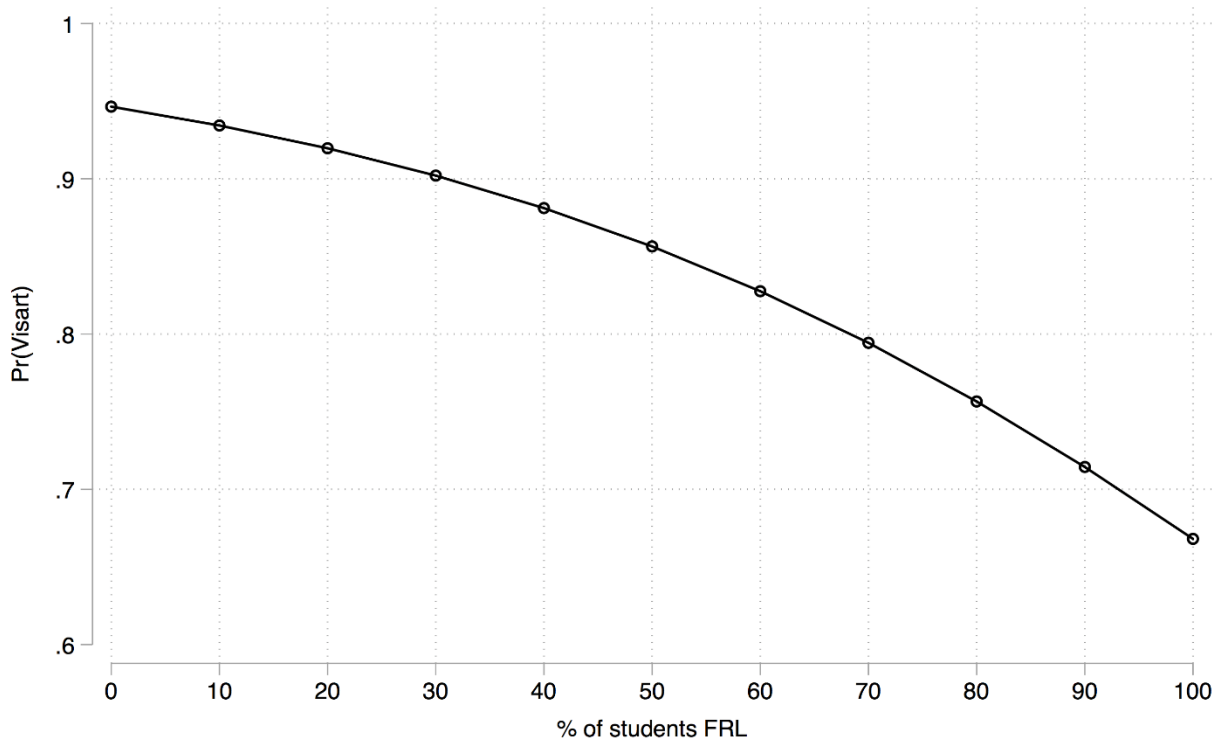


Figure 3

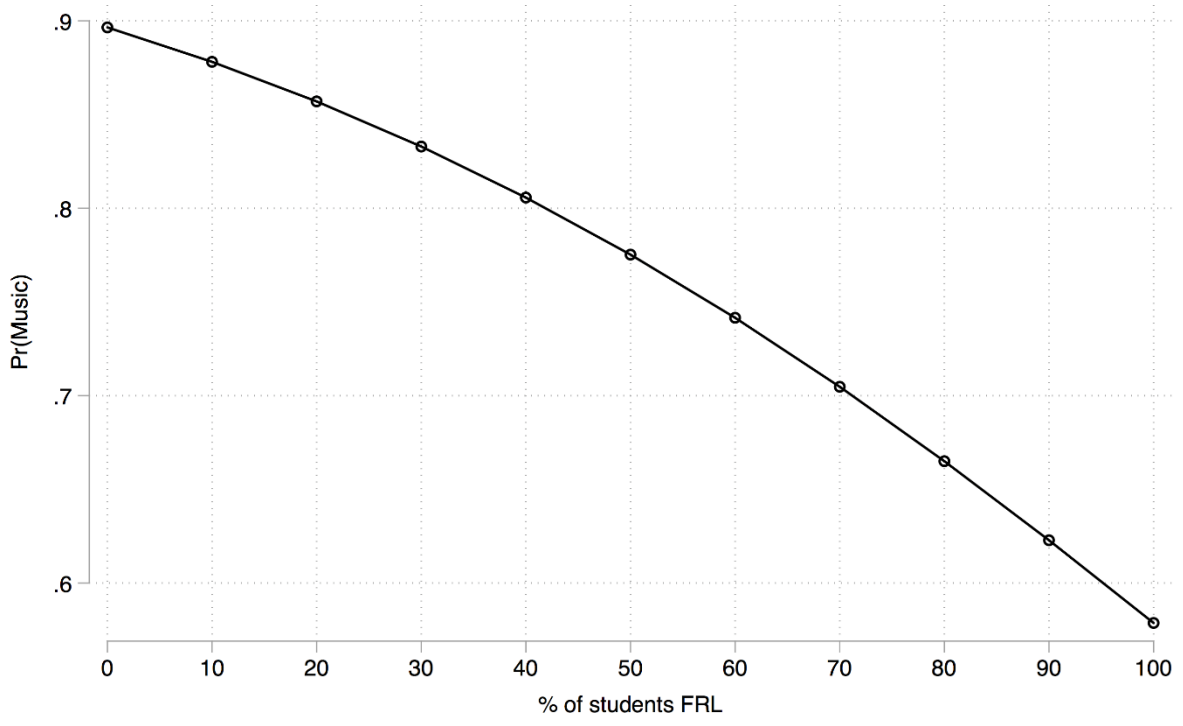


Figure 4

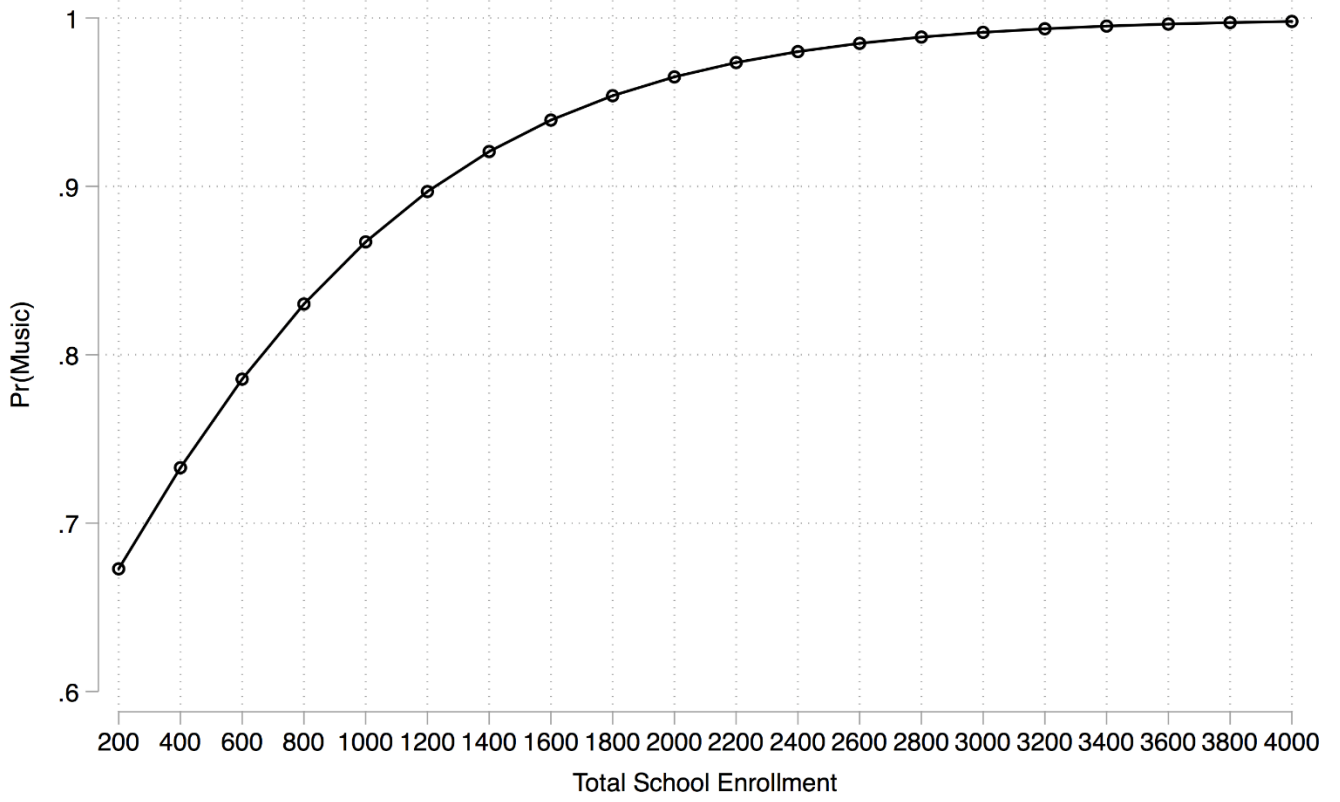


Figure 5

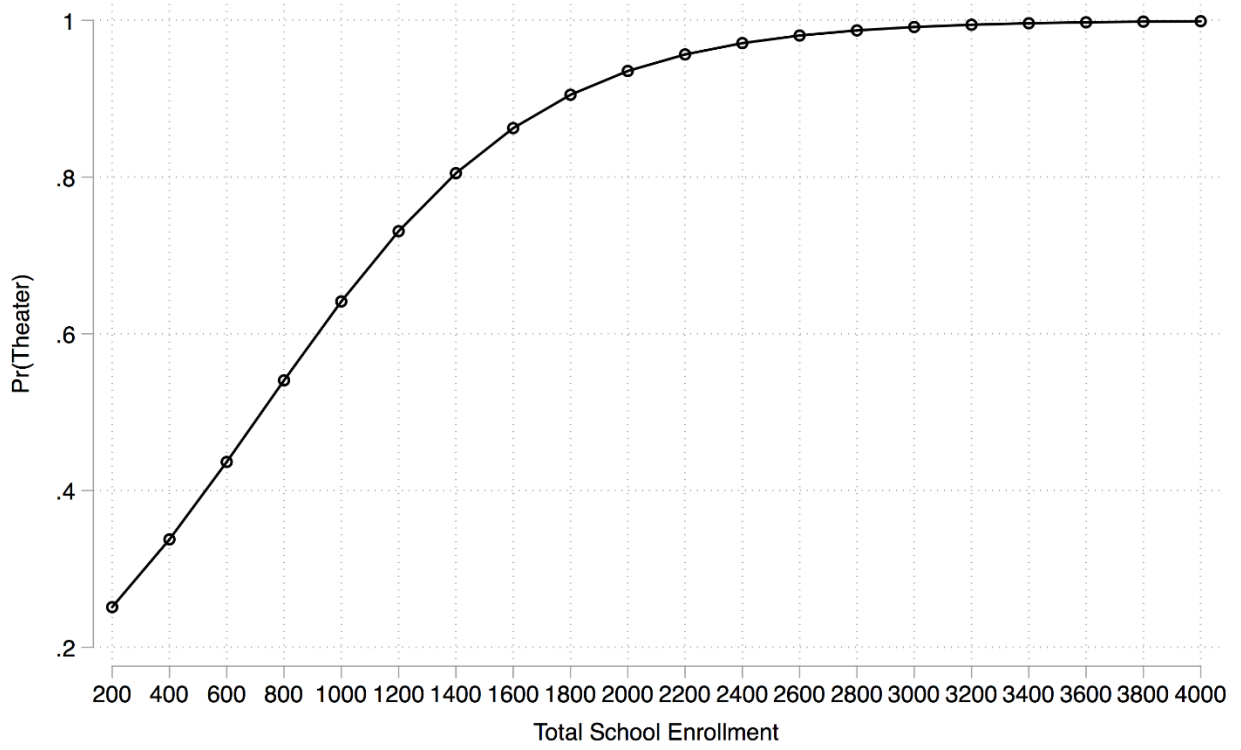


Figure 6

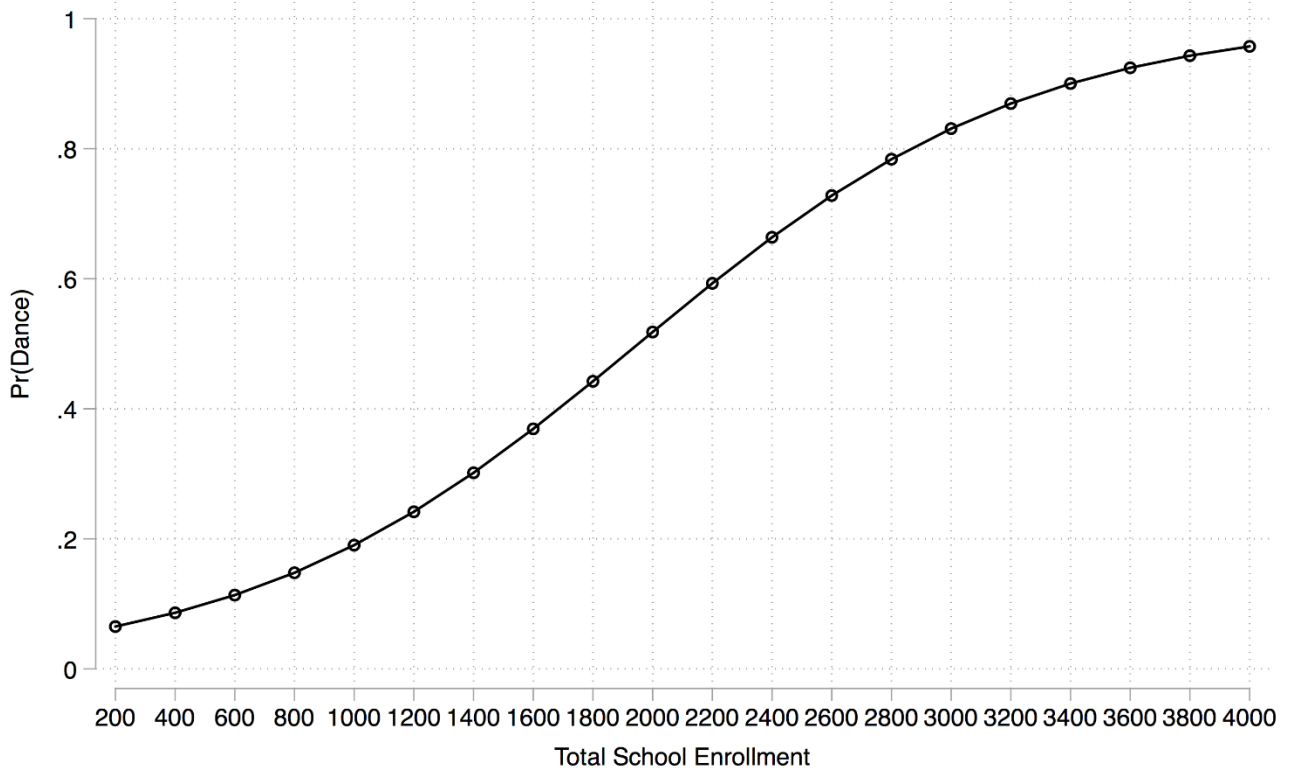


Figure 7

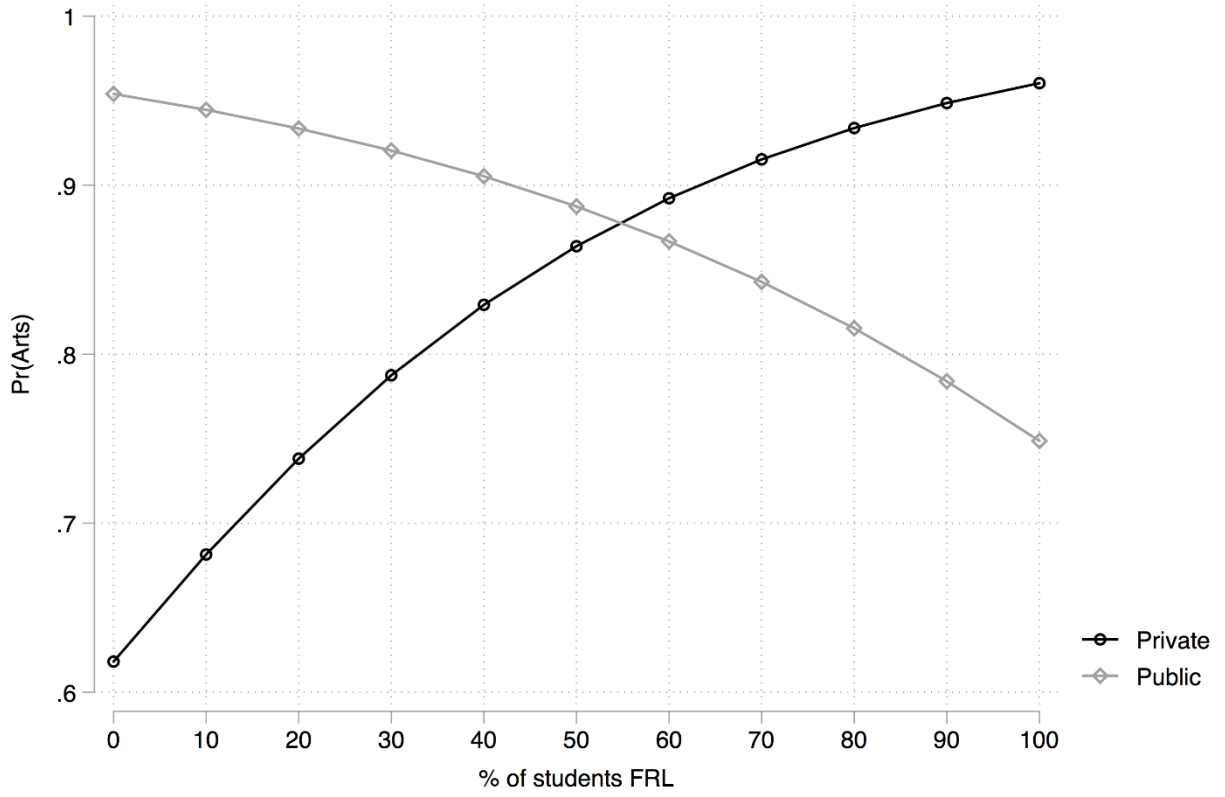


Figure 8

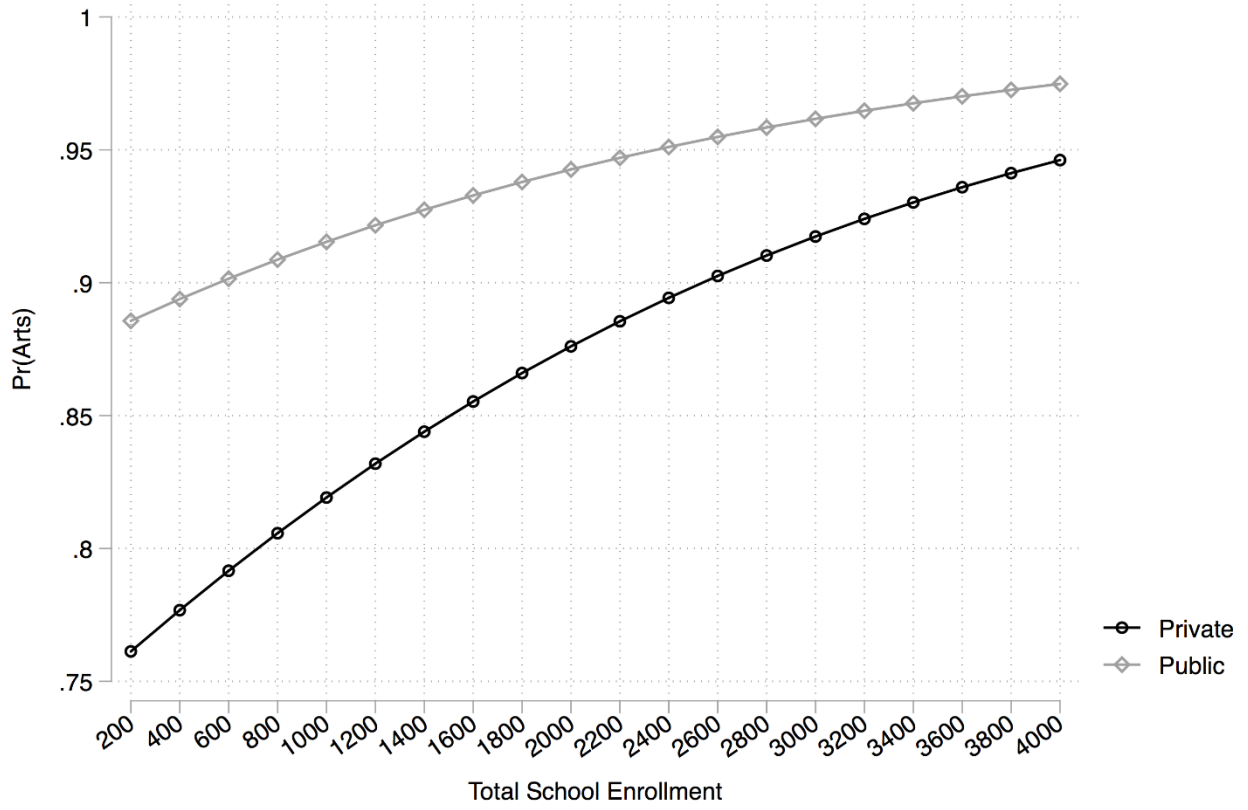


Figure 9

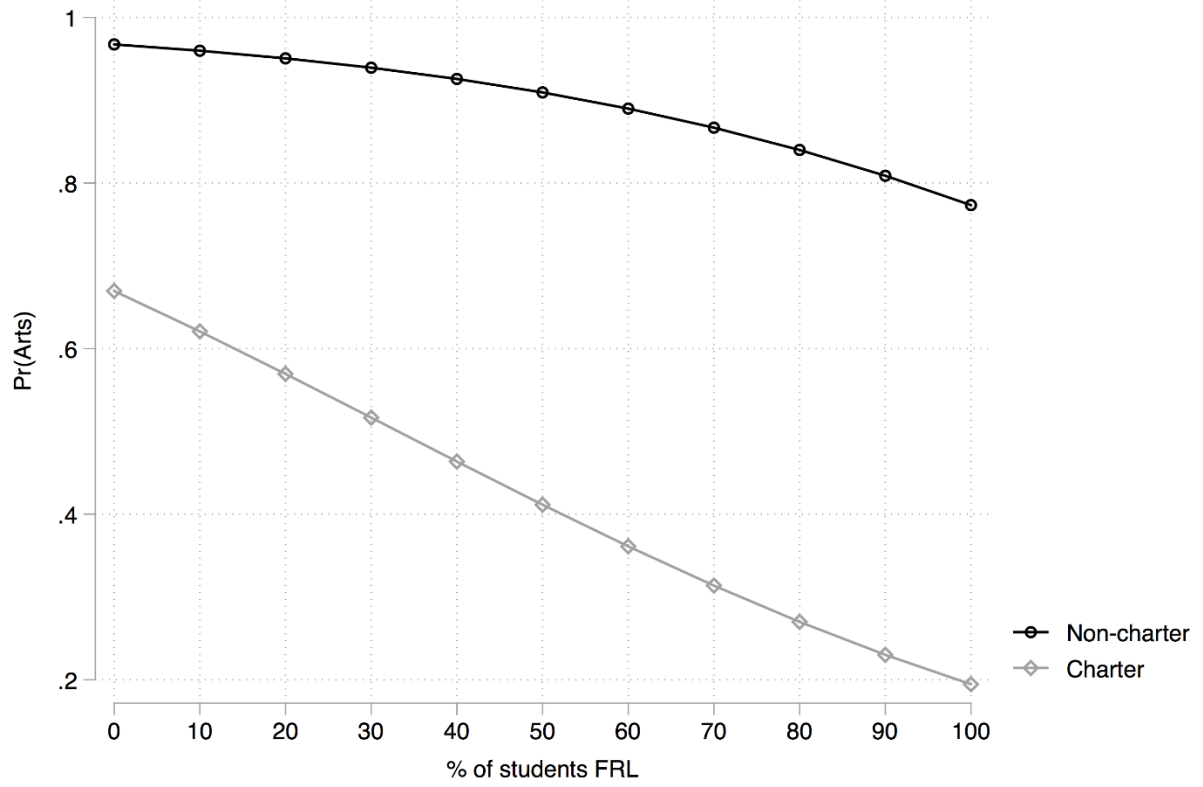


Figure 10

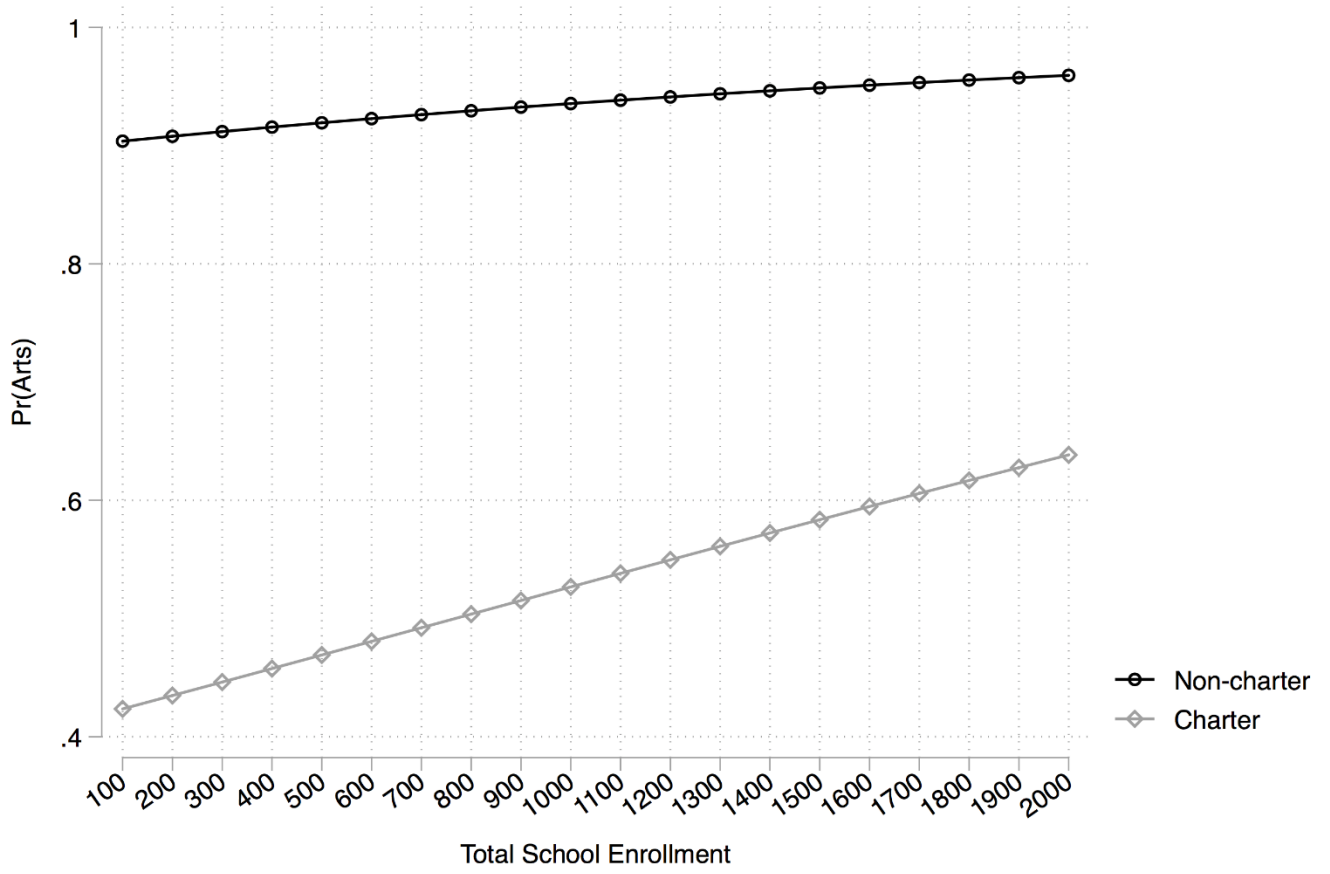


Figure 11

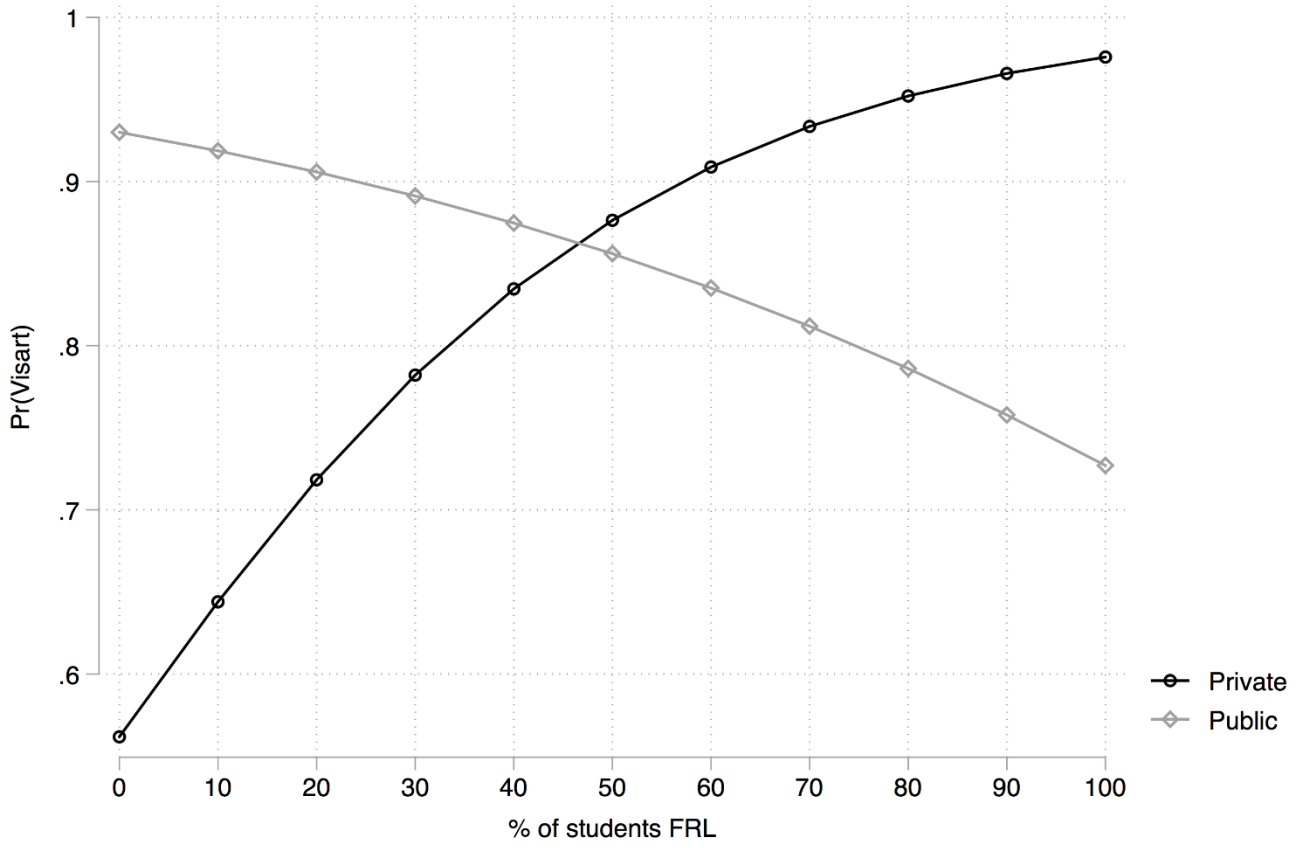


Figure 12

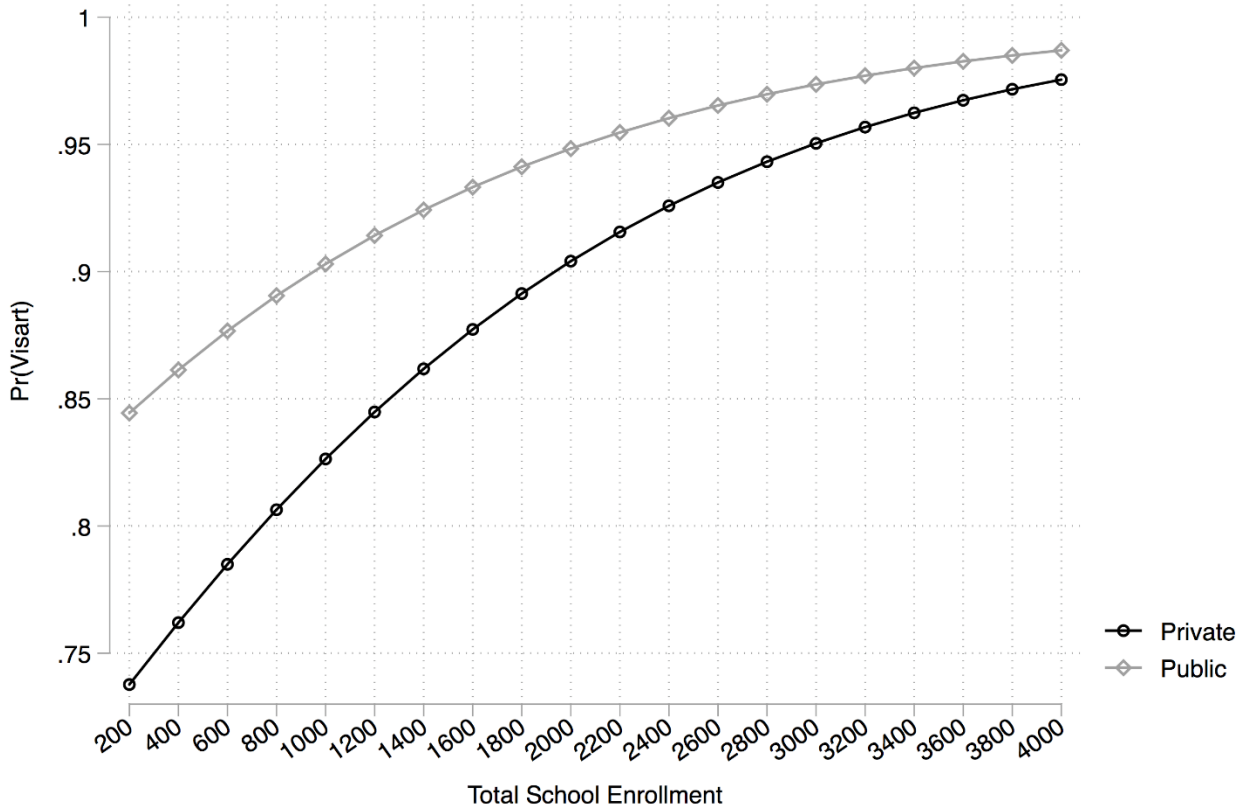


Figure 13

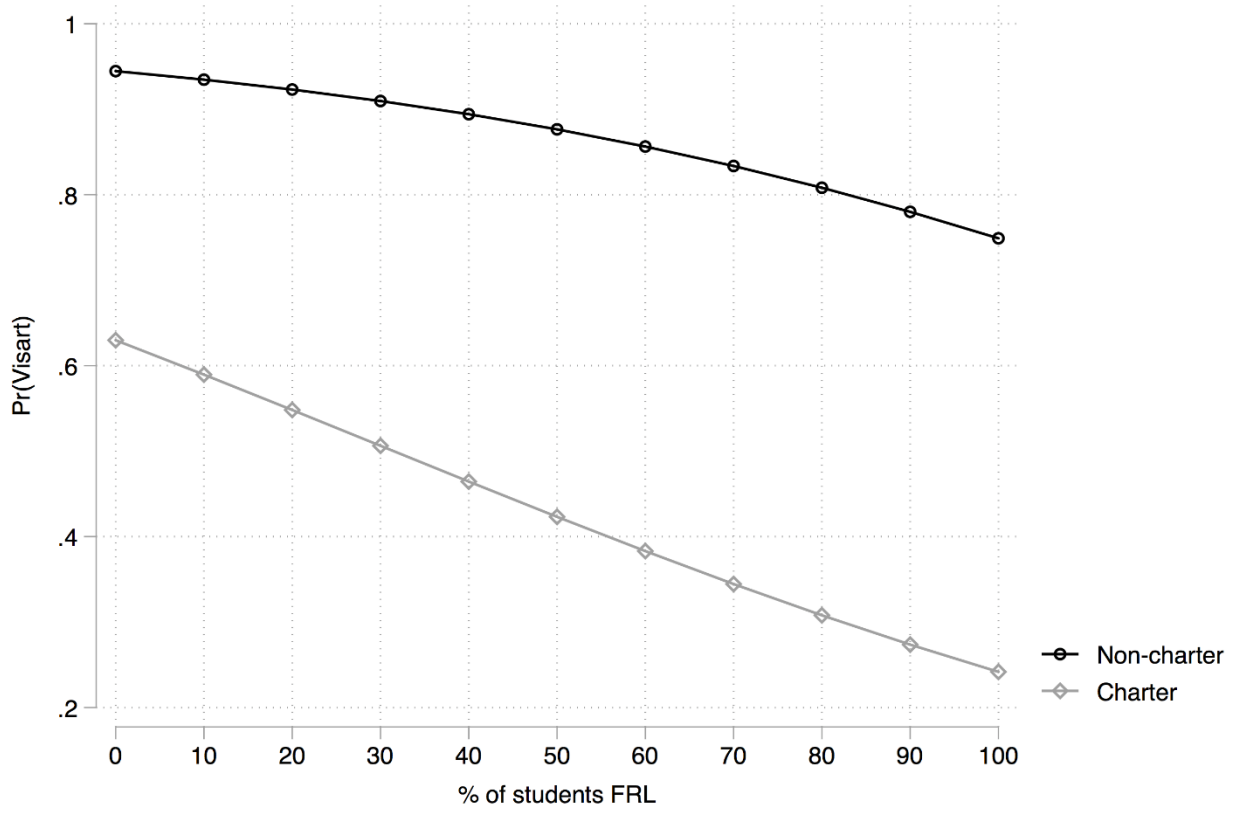


Figure 14

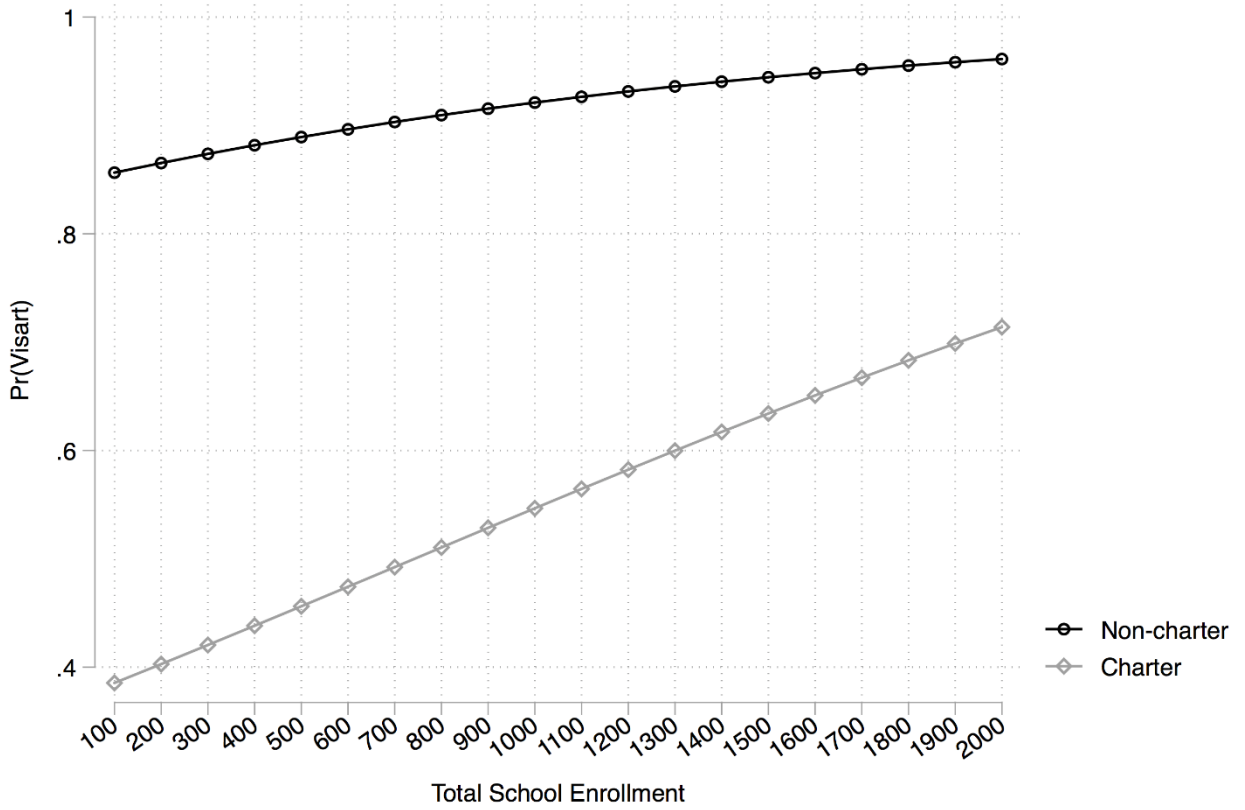


Figure 15

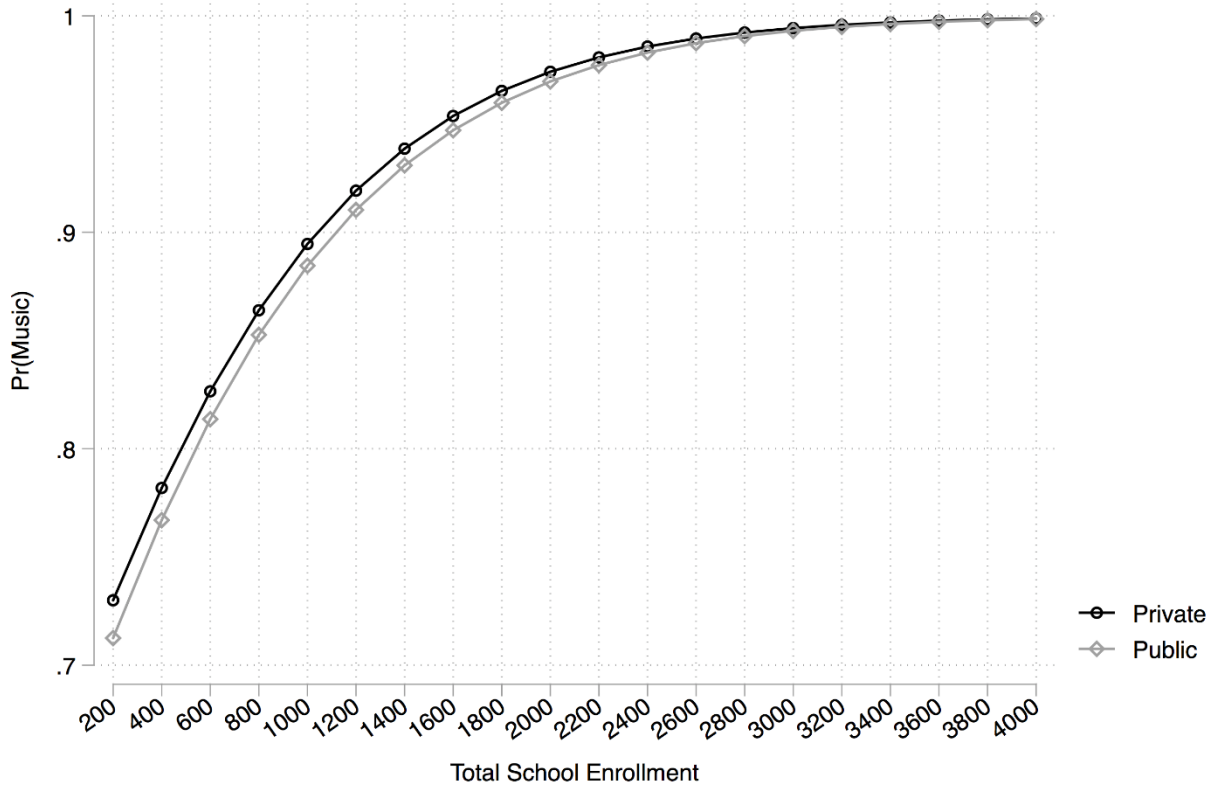


Figure 16

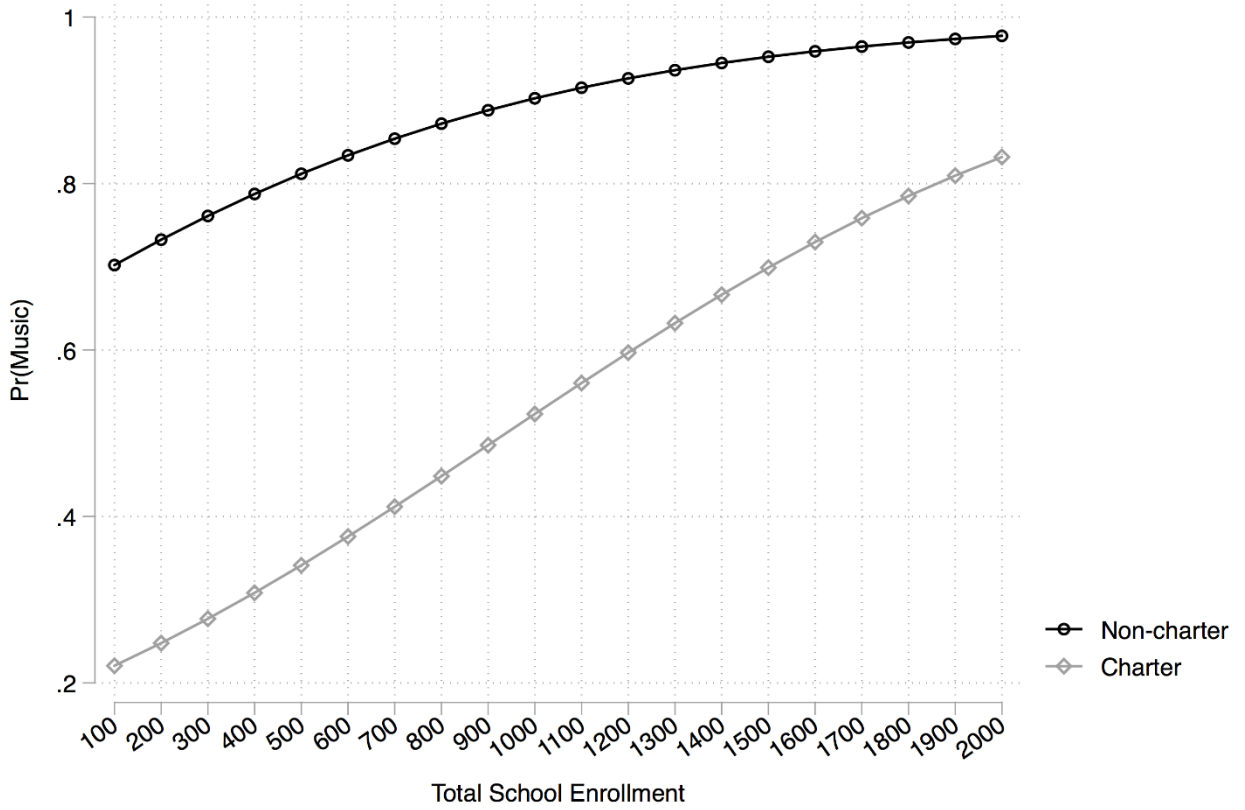


Figure 17

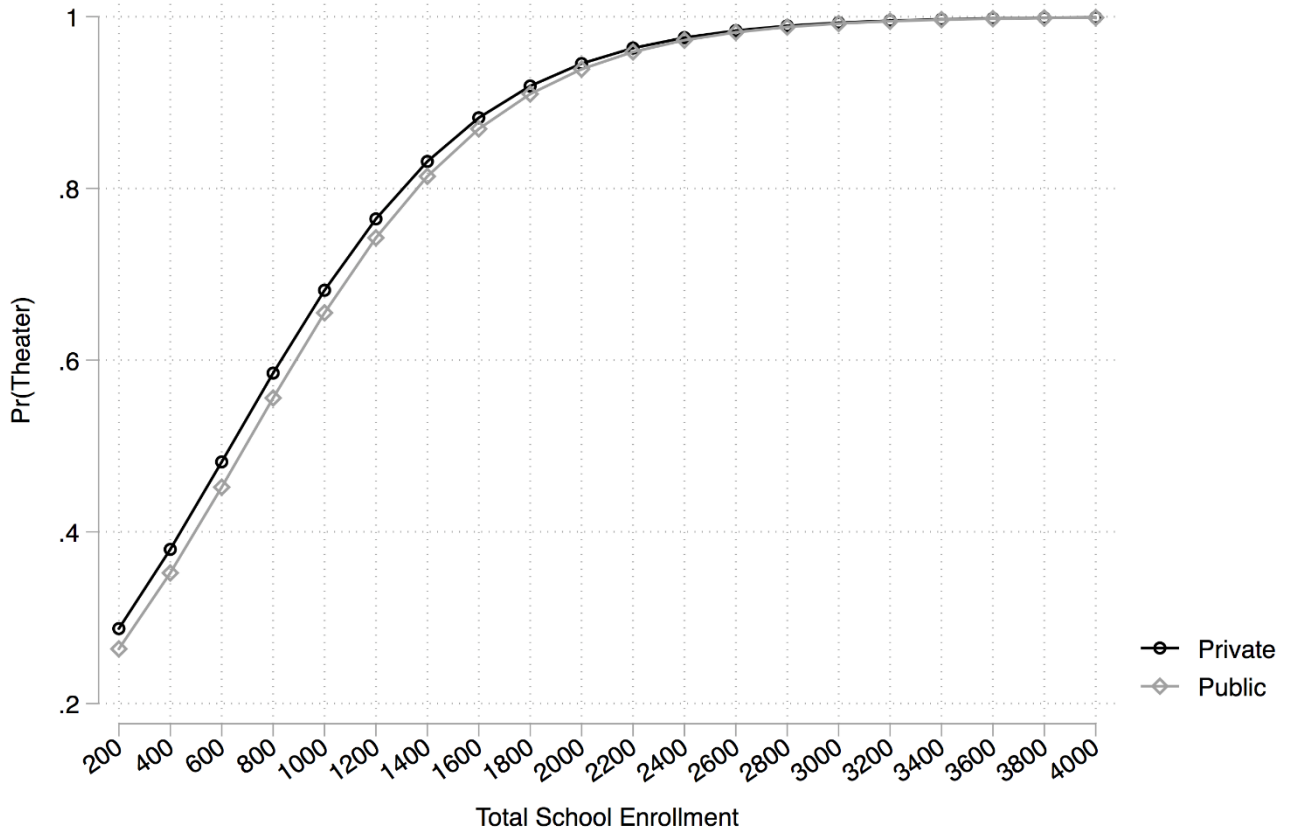
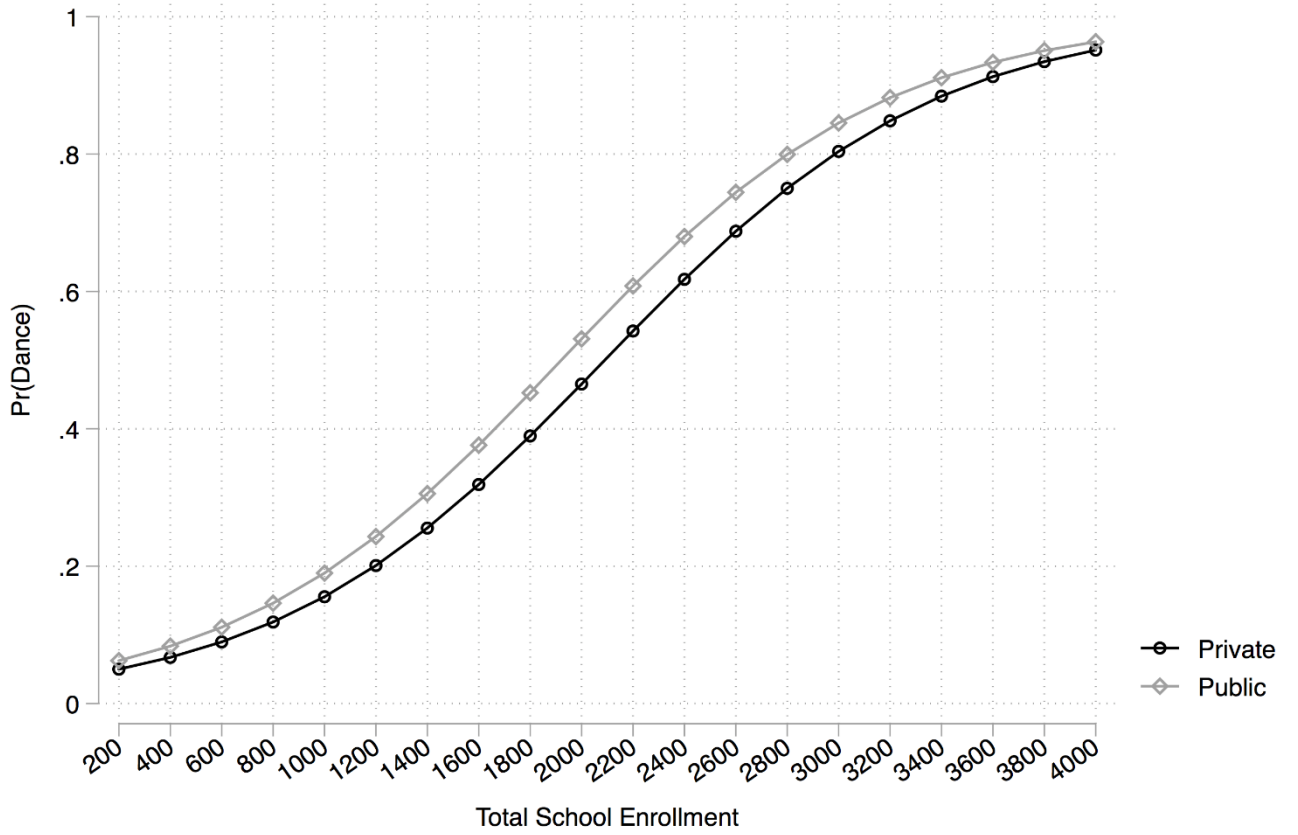


Figure 18



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