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Equity of Music Access and Enrollment in Ohio Secondary Schools

Equitable access to a quality music education for all students and healthy music class enrollment continue to be prominent goals for music teachers and advocates. While 92% of Ohio public secondary schools offer at least one music class, fewer than half of all students actually enroll. Past literature on equitable access to and enrollment in music classes offers a complex and conflicting depiction due to scholars either looking at national data sets or individual case studies, but few bounded by a single state. In order to dissect the problem of equitable access and enrollment in secondary music classes for the state of Ohio, we collected data reflecting these variables from online dashboards and analyzed them to find significant differences by locale (city, suburban, town, rural) and whether any equity factor predicted enrollment percentage in a public secondary school. Results reflected inconsistent differences between factors based on locale and found poor relationships between those same factors and a school's music enrollment. Advocates could utilize these results to justify initiatives meant to adapt to individual school contexts as opposed to state or locale-wide solutions to broadly stated music access and enrollment problems.

Keywords: music access, music enrollment, advocacy, policy, secondary music education

Introduction

Large-scale school curricular reforms often exist as ephemeral phenomena, destined to revert back to the status quo. In a discussion of education reform, Tyack and Tobin (1994) bluntly stated that "where [curricular] reforms stuck, typically the schools had been progressive even before the study and had continued to experiment afterward" (p. 469). In other words, noticeable changes to the normative expectations of American schools occurred more permanently at the individual school level compared to any national movement. A common theme in

education reform revolves around the accepted curriculum for secondary schools, particularly when deciding which classes to include as part of the requirements for graduation. Historically, subjects like math and science possessed secure places in high school graduation requirements, so they did not compete for legitimacy in a school's schedule in the same way as elective classes like music. But why are some classes given more academic weight than others? Given that post-secondary success remains a common goal of educators, this question feels especially salient as high schools become more racially diverse and local grade point averages predict post-secondary success more reliably than nationally standardized tests like the SAT (Allensworth & Clark, 2020).

Within this varied curricular framework, secondary music classes (SMCs) operate as important, but mostly optional, choices for students. Pendergast (2020), in a review of literature on curricular music access, posits that "structural factors are related to the contextual influences that support or block equitable access to [SMCs]" (p. 9). Due to their optional nature in the *grammar* of schooling (Tyack & Tobin, 1994), SMCs tend to vary widely in availability, quality, and relevance depending on any number of school-level factors (Abril & Gault, 2008; Elpus, 2014, 2017, 2020; Miksza, 2013; Pendergast, 2020). Pressure from top-down policies such as state graduation requirements and testing heavily influence local administrative decisions such as course offerings (Abril & Gault, 2008). In Ohio, the setting for the present study, some budgetary structures have created unconstitutional inequality between schools based on locale and race (Fewell et al., 2019; Phillis, 2005), which exacerbate limitations on the types of music classes offered in a particular school (Parsad & Spiegelman, 2012).

The relationships between music access and enrollment remain nebulous at best. In one exemplar study, Elpus (2017) provided a comprehensive analysis of factors contributing to whether music is offered at a secondary school, but found mixed results. Through the analysis of a national longitudinal education data set, Elpus linked various demographic and financial factors to the odds a school offered a credit-bearing music class. Notably, factors such as Free or Reduced-Price Lunch rate (FRPL), proportion of white students attending the school, and school size all predicted whether a school offered music courses. Conversely, urbanicity and whether a school had block scheduling showed no predictive validity. The national sample showed particular trends, but the data differed when broken down by region. Midwestern schools (Ohio's location) had the highest probability that music was offered as a credit-bearing class (85%). If we compare that figure with Western schools (59%), we can see how regional differences give reason to explore whether an individual state's access data present similar trends.

Access to and quality of SMCs seem rife with inequality, which may also impact whether students elect to take music classes during high schools. Broad national data studies suggest quality indicators' relationships with student enrollment in SMCs are weak at best (Elpus & Abril, 2019; Pendergast, 2020). Moreover, during the 2012/13 school year, only 24% of public high school students in the United States had enrolled in at least one ensemble music course over their four years (Elpus & Abril, 2019). This percentage is far below the 92% of high school students with access to any type of music class (ensemble or not) in Ohio during the 2016/17 school year (Morrison, 2018). These recent data discrepancies in Ohio are currently unexplored.

The larger topics of music enrollment and access present two different problems in the larger issue of equity of music access in secondary schools. Nationally, the quality of music offerings varies based on indicators like community support and sociocultural elements such as locale of the high school (i.e., city, suburban, town, or rural) (Abril & Gault, 2008; Miksza, 2013; Robinson, 2017). Morrison (2018) addressed arts enrollment and access for Ohio broadly, but stopped short of describing how the two topics operate independently or how they differed by locale. Further, a relationship between enrollment and factors related to quality of said access was not established nor discussed. The majority of music classes in secondary schools are elective, but the mere presence of a music program in a school does not automatically guarantee that students will participate (Pendergast, 2020). Particular to Ohio, this lack of participation presents a problem due to loopholes in graduation requirements that allow students to bypass music and arts classes on their way to graduation, especially those students on the career-technical pathway (Ohio Department of Education, n.d.). The question still remains: If we build a SMC to expand offerings in a given school, will the students enroll?

Review of Literature

The impetus for the current study stems from The Ohio Arts Education Data Report (Morrison, 2018), which utilized Ohio Department of Education data from the 2016/17 school year to provide a description of preK-12 arts courses within Ohio public and charter schools. According to the report, 82% of Ohio public school students participated in music courses, but this number combined primary and secondary school data. A closer examination showed that, while 92% of high schools offered music courses, only 46% of students in high schools enrolled in at least one music course during the 2016/17 school year. This incongruity suggests that the inclusion of elementary schools in the aggregate data inflated the 82% participation rate because arts participation is compulsory in Ohio primary

schools rather than optional among competing elective classes (Ohio Department of Education, n.d.). Further, Morrison's (2018) objectives were to provide a broad description of access and enrollment for all arts classes at all levels of school in Ohio, not just secondary music. The present study builds off Morrison's report by addressing factors that could contribute to the quality, and not just the presence, of a school's SMC offerings.

Additionally, the broad findings from Morrison (2018) inform the current study by establishing a baseline of questioning regarding external factors that could indicate the quality of a music program, whether those factors differ between locales, and if they affected enrollment in those classes. Both the lowest arts access and highest participation rates were in high poverty schools, suggesting that quality indicators, like budgetary differences and number of music course offerings, would differ between rural/city schools and suburban/town schools. While other factors besides the ones discussed below may impact the quality of music education offered by Ohio secondary schools, the current study will focus on the ones described in related research and defined by clear outcome data (Helton, 2020). The following review explores the possible reasons for these differences and how those reasons relate to the current study. Qualitative differences between locales will then be seen in contrast to national education data analyses to justify looking at similar data at the state level.

Distinct Types of Challenges Between Locales

A spectrum of issues can contribute to differences in quality music access between schools based on locale. Rural and city schools may struggle to provide similar services and experiences compared to wealthier suburban schools due to a lack of financial or personnel resources (Bouck, 2004). Similarly, city schools often lack financial resources, but face challenges in recruiting and retaining qualified arts teachers (Robinson, 2018), a reality also experienced in rural schools (Bouck, 2004). These indicators of quality music access for secondary schools warrant further exploration in order to better relate the issue to the music enrollment gap for Ohio secondary school students, especially given that music enrollment varies the most at the secondary school level (Elpus, 2014; Elpus & Abril, 2019).

City students hoping to receive consistent, high quality music education face hurdles particular to their locale, one of which is access to qualified, experienced teachers. Chronic music teacher turnover in city secondary schools is comparably worse than national aggregate rates of teacher turnover (Robinson, 2018). Exacerbating this trend, city high schools tend to struggle in retaining young music teachers due to the "praxis shock" associated with teaching in an urban setting

(Shaw, 2018, p. 32). New teachers often feel unprepared to facilitate the needs of city students because of the difference between their and their students' backgrounds. Complicating the issue even further, high music teacher turnover can lead to not only drops in enrollment, but the consolidation of classes (Kloss, 2012; Robinson, 2018), ultimately increasing the number of students a single teacher sees in a given day. The increased workload, attributed to both low enrollment and school staffing budgets, creates stressful student-to-teacher ratios which would affect the quality of teaching performance for any music teacher (Shaw, 2016).

Financially disadvantaged schools, which tend to be clustered in city and rural locales, often struggle to provide students access to a quality music education (Morrison, 2018; Parsad & Spiegelman, 2012). The current state budgetary situation in Ohio has been unconstitutional since the Ohio Supreme Court's 1991 *DeRolph* school funding lawsuit decision (Fewell et al., 2019; Phillis, 2005). The *DeRolph* decision declared that Ohio's method of funding schools was illegal due to inefficiencies and inequalities that disproportionately disadvantage city and rural schools. Given that city (Costa-Giomi & Chappell, 2007) and rural (Bouck, 2004) schools inherently express budgetary concerns, this inequitable and unconstitutional apportioning of public money for schooling intensifies those challenges. Fewell et al. (2019) specifically cited the inadequacy of arts programs in some underfunded Appalachian schools in Southeastern Ohio as examples of this problem. In rural settings, financial scarcity may result from less property tax revenue, low per capita income levels, and small and widely dispersed populations. Given their high cost-per-pupil ratios, arts programs in particular may suffer (Campbell, 2001). Similarly, city music programs can see a wide variance of financial support, with some music budgets being $0 annually (Fitzpatrick, 2011). In Ohio, these budgetary woes show no sign of attenuating.

Possible Rural Outliers

As noted by Bates (2011), rural schools present a different set of attributes than their city or suburban counterparts, and as such pose a different set of opportunities and challenges. Rural students may face issues such as lower teacher expectations, decreased access to technology, and fewer course offerings (Bouck, 2004). More positively, rural music teachers often form close bonds with their students and their families and showcase the school's music programs as a part of community events (Hunt, 2009).

Rural areas often take pride in their schools and school music programs as evidence of the strength of their communities (Bates, 2013). Schools may be home to generations of ensemble musicians as children join the same music programs in

which their parents and/or grandparents participated (VanDeusen, 2016). Bands and choirs perform at a wide variety of community events, increasing the visibility of the school music program and reinforcing the community's connection to the school and the music program. In one particular case study of a successful, well-established choral program in a rural setting, the program's connection to community values increased commitment to participation (Bannerman, 2019). It is possible that, despite particular challenges related to equity indicators, rural schools possess stronger community cohesion than the other locales, which could strengthen enrollment numbers despite a lack of resources.

Contrasting National Trends

Despite the qualitative differences observed in the previously cited studies, analyses of national education data show fewer predictive indicators of student access and enrollment in SMCs. Miksza (2013) found few relationships between arts resources, variety and quality of SMC offerings, and enrollment. Utilizing a national data set, the regression model compared a myriad of quality indicators with advocacy efforts for school arts programs. Significant differences in arts enrollment between locales were among those indicators. The only observed effect found between arts quality indicators and participation was instructional time. All other quality indicators revealed no significant effects associated with participation in arts classes. This particular finding is worth noting in the context of the present study because proxy variables for poverty such as FRPL were found to be unrelated to locale. The lack of a predictive results between the two variables suggests that locale may play a role separate from financial issues regarding arts access, particularly because high-poverty locales tend to be concentrated in city and rural areas.

In a national survey of secondary school principals, Abril and Gault (2008) found that, while 98% of their respondents offered some type of music class for credit, only 34% required a curricular music class for graduation. Although 34% of respondents signaled that their schools require a music class for graduation (a school-level decision, not one dictated by state-wide policy), they did not indicate the exact enrollment in music classes. It was also unclear as to which school locale (city, suburban, or rural) would be most likely to make curricular music a prerequisite for graduation. While significant differences between the number of music classes offered were found in the larger statistical model $F(2, 528) = 25.31$, $p < .001$, further analysis showed that the significance was due to rural schools offering a significantly more restricted curriculum. Similarly, Gerrity (2009) surveyed Ohio principals and found similarly muddled results when attempting to connect state and national policy expectations and how music is valued in a given school.

Principals generally thought highly of their music programs, but tended to view them as expendable. These data, however, were not broken down by locale.

High-poverty secondary schools also struggled to maintain dedicated spaces for music instruction, were less likely to have a standardized music curriculum, and offered the fewest number of curricular SMC options (Parsad & Spiegelman, 2012). Despite the arts deficits commonly associated with high poverty locales, schools with the lowest FRPL rates (i.e. schools catering to students from a high socio-economic status) tended to have the lowest music participation. Specific to Ohio, Morrison (2018) found similar trends, but did not differentiate between the two most common high-poverty school locales: city and rural.

Elpus (2017) analyzed similar data sets to identify quality indicators associated with the availability of secondary arts classes. In addition to the findings discussed earlier, the study also found significant differences in the availability of any arts course in city schools (78%) versus suburban (90%), town (90%), or rural (91%) schools. When music was separated out, city and rural schools had much more similar rates of availability, with 72% of city schools and 74% of rural schools offering at least one music course compared to 87% of suburban schools and 86% of town schools, although none of these differences were statistically significant. Replicating some of the findings from Miksza (2013), Elpus (2017) found similarities between rural and city schools unrelated to funding, but few significant differences between secondary school music enrollment based on locale.

In a more recent analysis of the national data, Elpus (2020) determined that the availability and number of music courses were linked to FRPL rates as well as the percentage of white students in a particular high school. Total school enrollment represented the only other factor contributing to the number of SMCs offered. Particularly referring to school size, Elpus suspected that the significant differences among equity of arts access among larger schools "may be reflected in the greater likelihood of these schools to have more teacher and facility resources" (p. 17). Although qualitative financial differences have been reported at the local level, national trends of systematic inequity in arts access have not been observed. It is unclear whether Ohio's trends at the state level resemble localized accounts or national data patterns.

Need for the Study

The discussed literature presents a complex environment of both access and enrollment concerns in secondary education for music educators. Qualitative accounts of rural and city high schools suggest substantial challenges to offering quality music education in those settings. In contrast, large-scale data reports

suggest that the differences in quality factors is negligible when broken down by locale. For the current study, we investigated whether this pattern holds for a smaller, more homogenous sample from a single state governed by the same policy expectations. We sought to determine if any quality factors predict enrollment in Ohio secondary school music programs. Although the term "quality" remains ambiguous, for this study, we will focus on the variables and outcomes described in the literature. The results could inform various stakeholders about access and enrollment problems in music education across the state of Ohio.

The purpose of this study was to examine possible indicators of unequal access to secondary music education in Ohio and whether those indicators predicted student enrollment in SMCs. Various school-level factors could describe music access beyond the binary of offering/not offering music as a credit-bearing class. Current large-scale data analyses describe the existence of music classes in Ohio, but not the quality of those offerings nor if quality predicts enrollment. The current study aimed to address not only equity of access, but the quality of that access and if/how those music education quality factors predicted music enrollment. Ultimately, we hope the results for this study provide guidance for music education advocates and teachers who wish to make informed arguments and pragmatic policy suggestions (Elpus, 2020; Helton, 2020) in their local communities and schools.

Method

Using data available through the Ohio Arts Education Data Project's (n.d.) data dashboard and the Ohio School Report Cards Advanced Reports (n.d.), we used simple random sampling to select Ohio high schools (N = 178) and logged the publicly available data related to music and access and enrollment. This sample represents 15.5% of the 1,152 public high schools in Ohio. The data collected through this process served as indicators depicting the equity of arts access across all locales in Ohio for the 2017/18 school year and if/how those indicators translated to enrollment. Enrollment was represented by the percentage of students who took a credit-bearing music class during the 2017/18 school year. Indicators of arts equity included student to arts teacher ratios and number of different arts classes offered (music and visual art only).

Financial indicators of equity included financial data unrelated to a school's FRPL rate. Instructional, total, and support cost per pupil data were chosen due to their inherent differences among locales and their relative lack of relationship with indicators of poverty. Further, costs per pupil have been used to determine differences between schools based on locales as a way of ensuring a school's financial data are independent of community factors like SES (Johnson et al., 2014).

This distinction focuses the analysis on differences between locale that cannot be explained by socioeconomic status or other cost-of-living expenses. After a series of normality tests and residual plots, we identified and eliminated outliers that fell more than three standard deviations from the mean for a final sample of $n = 164$. All indicators and their descriptive statistics broken down by locale can be seen in Table 1.

Preliminary Analysis

Various distributions failed normality tests, which we attributed to the population being inherently skewed and/or kurtotic, and not the result of errors in the random sampling. By choosing to use simple random sampling instead of stratified sampling, we risked this type of distribution, but eliminated unnecessary bias through independence and identical distribution of samples (Miksza & Elpus, 2018). Attenuating further concern, the χ^2 test of equivalence confirmed that the unequal sample draws from each locale were not significantly different from equal draws from each locale $\chi^2(3, N = 164) = 7.37, p > .05$, giving reason to look further into each variable to determine where significant differences could occur between locales.

Additionally, significant differences found in the one-way ANOVAs for the non-normal samples indicated the error related to the non-normal samples and distributions did not notably interfere with the results. To confirm this, similar to the methods used in Abril and Gault (2008), we looked at the subgroup differences to see which specific locales differed significantly with a post hoc Bonferroni adjustment. A factorial ANOVA with the Bonferroni adjustment yielded significant differences between variables according to locale. These differences can be seen in Table 2.

The ANOVA analyses suggested that specific indicators varied less between locales than expected, particularly the financial data. Fortunately, this general lack of variation between locales, as also seen in Miksza (2013), justified a broader approach to finding how financial and equity indicators were related to enrollment. In order to explore these relationships, we utilized a stepwise multiple regression analysis (MLR) to find significant predictors of music enrollment among all schools in Ohio. Because of our interest in which indicators would predict enrollment, the stepwise MLR model helped "determine which of a very large set of variables might be most pertinent to [the] outcome" (Miksza & Elpus, 2018, p. 132). This style of regression model was appropriate given the uncertain relationships between the quality indicators and music enrollment across all locales.

Initially, the bulk of the indicators returned either miniscule or non-significant betas. The only independent variables with significant betas were student-to-teacher ratio and administrator cost per pupil. Collinearity diagnostics showed a high correlation between cost variables such as total and instructional cost per pupil ($r = .95$, $p < .001$) as well as a moderate relationship between total and admin cost per pupil ($r = .44$, $p < .001$). Further, pupil support had few interactions between locales. As a result of these developments, we calculated the support cost's percentage of the total instructional cost. We conducted the same MLR analysis with the new variable and it returned a substantial and significant beta. The stepwise MLR results can be seen in Table 3.

Results

In alignment with previous research, the breakdown of locale showed various differences between equity indicators. One-way ANOVAs shown in Table 1 indicated that each variable significantly differed between locales, suggesting that location factored in those differences. City and rural school mean values bookended the variable ranges among locales with suburban and town schools filling in the middle. Notably, city schools offered the fewest arts classes ($M = 6.67$, $SD = 3.46$) and sported the lowest music enrollment percentages ($M = 28.27$, $SD = 17.07$). In contrast, rural schools offered approximately the same number of arts classes ($M = 6.94$, $SD = 2.78$) but had the highest percentage of students enrolled in music classes among all locales ($M = 37.38$, $SD = 15.01$).

Certain financial indicators did not differ as much as expected, but followed similar patterns as the other arts equity indicators. For example, the total cost per pupil across locales were within one standard deviation of the total mean ($M = 8049.29$, $SD = 1470.89$), suggesting that whatever differences exist between arts equity indicators could be unrelated to financial information. To confirm this, correlations were calculated between the number of arts offerings at a school and student-to-teacher ratio ($r = -.05$, $p = .47$), instructional cost per pupil ($r = -.05$, $p = .48$), pupil support per pupil ($r = .23$, $p < .01$), and administrator cost per pupil ($r = -.18$, $p = .01$). The lack of generalized relationships between arts equity and financial indicators suggest that budgetary deficits may have only weak links to whether Ohio high school students have access to quality music classes.

The factorial ANOVA with Bonferroni adjustment showed which indicators differed significantly between specific locales. Similar to the previous literature, some indicators differed significantly between only two locales while others differed between most. For example, the student-to-teacher ratio was significantly different between each locale with the exceptions of town/suburban ($p = 1$) and

Table 1
Descriptive Statistics and One-Way ANOVA Results for Indicators of Music Access

		n	*M*	*SD*	*SE*	*KS*	*F*	*p*
Stud:Teach Ratio	Total	164	141.13	66.29	5.17	.001	18.32	< .001
	City	24	216.75	80.81	16.49	.06		
	Suburban	52	147.12	58.26	8.08	.02		
	Town	36	134.56	53.22	8.87	.001		
	Rural	52	104.81	40.71	5.64	< .001		
Arts Offerings	Total	164	7.8	3.01	.23	.01	7.26	< .001
	City	24	6.67	3.46	.70	.08		
	Suburban	52	8.88	3.25	.45	.2		
	Town	36	8.25	1.94	.32	.09		
	Rural	52	6.94	2.78	.36	.01		
Instruction/Pup	Total	164	7159.90	1336.81	104.38	< .001	6.67	<.001
	City	24	7811.71	1264.40	258.09	.002		
	Suburban	52	7432.23	1382.12	191.66	< .001		
	Town	36	6904.11	1306.21	217.70	.2		
	Rural	52	6763.83	1194.89	165.70	.01		
Pup Support/Pup	Total	164	568.29	263.03	20.54	.2	4.52	.004
	City	24	649.42	340.51	69.50	< .001		
	Suburban	52	629.73	253.03	35.09	.2		
	Town	36	549.06	211.86	35.31	.2		
	Rural	52	484.48	244.20	33.86	.2		
Total/Pupil	Total	164	8049.29	1470.89	114.85	< .001	10.94	< .001
	City	24	9041.13	1106.54	225.87	.2		
	Suburban	52	8328.69	1530.97	212.30	.001		
	Town	36	7749.97	1474.45	245.74	.13		
	Rural	52	7519.35	1278.54	177.30	.2		
Admin/Pupil	Total	164	663.30	184.30	14.39	.001	8.35	< .001
	City	24	808.50	257.25	52.51	.13		
	Suburban	52	654.14	152.48	21.14	.2		
	Town	36	646.47	145.39	24.23	.12		
	Rural	52	617.08	169.03	23.44	.2		
Music Enroll %	Total	164	32.74	13.84	1.08	.2	5.12	.002
	City	24	28.27	17.07	3.48	.2		
	Suburban	52	28.69	10.64	1.47	.2		
	Town	36	34.56	11.71	1.95	.2		
	Rural	52	37.38	15.01	2.08	.2		

Note. Instruction Cost and Pupil Support show cost per pupil. Kolmogorov-Smirnov significance ($p < .05$) shows lack of fit between sample and population. One-way ANOVA results indicate significant differences based on locale.

town/rural ($p = .10$). Conversely, pupil support per pupil only significantly differed between suburban and rural schools ($p = .02$). These financial results, in contrast to the other indicators of arts equity and enrollment percentages, differed little between locales, which further suggests that individual school-level factors may not be determined by locale.

Table 2
Significant Comparisons Using Bonferroni Correction

		City	Suburban	Town
Stud:Teach Ratio	Suburban	< .001		
	Town	< .001	1	
	Rural	< .001	< .001	.10
Arts Offerings	Suburban	.001		
	Town	1	1	
	Rural	.001	.10	.23
Instruction/Pup	Suburban	.55		
	Town	.01	.36	
	Rural	< .001	.05	1
Pup Support/Pup	Suburban	1		
	Town	.7	.88	
	Rural	.4	.02	1
Total/Pup	Suburban	.01		
	Town	< .001	.58	
	Rural	< .001	.02	1
Admin/Pup	Suburban	< .001		
	Town	< .001	1	
	Rural	< .001	1	1
Music Enroll %	Suburban	1		
	Town	.35	.3	
	Rural	.009	.01	1

Note. Factorial ANOVA significance values ($p < .05$) indicate significant differences between locales.

Ultimately, we sought to determine if indicators of arts equity predicted music enrollment in SMCs at Ohio high schools. What links we found were generally weak. The stepwise MLR analysis yielded three significant betas, but a relatively small combined effect on arts enrollment ($R^2 = .14$, $p < .001$). Student/teacher ratio, pupil support/total instructional cost ratio, and admin cost per pupil all affected variance in music enrollment percentage. But these three indicators only explained about 14% of the variance in the overall model and the other variables accounted for none of it. This finding, along with the lack of effect of the other equity indicators, suggests that individual school-level factors contribute to the problem of low music enrollment across the state of Ohio more than ones generalizable at the state level. Further, the low effect indicates enrollment in music classes may not be tied to budgetary concerns or other quality indicators associated with school funding.

Table 3
Stepwise MLR Results

	F	*p*	R^2	Sig Change	*B*	*β*	VIF
S:T Ratio	13.76	< .001	.07	.002	-.04	-.23	1.04
Pup Sup:Total	10.56	< .001	.11	.005	94.12	.20	1.00
Admin/Pup	8.94	< .001	.14	.024	-.01	-.16	1.05

Note. Collinearity tests indicated that each significant predictor operates independent of each other. Variance inflation factors (VIF) were all < 10. To further confirm IV independence, Durbin-Watson test on the model yielded a result of $d = 1.88$, indicating that the residuals of the betas were independent of each other.

Discussion

Equity of access and enrollment remains a central concern of arts education advocates. Morrison (2018) provided a valuable but general view of the state of arts education for Ohio public schools. Our investigation focused on equity of access and enrollment specifically in SMCs, which afforded us the ability to study more nuanced details of the data. We considered how quality of access differed between high schools across locales due to greater variance in arts access and enrollments at the secondary level (Elpus, 2014, 2017; Elpus & Abril, 2019). Broadly, data and analysis showed an inverse trend in terms of quality music access and enrollment. Indicators of quality, like budget allocations and the number of arts classes offered, tended to decrease as locales got more remote. Conversely, the percentage of the high school student body who took a credit-bearing SMC increased along the same spectrum, with rural schools having the highest enrollment percentage of the locales.

We speculate that these enrollment differences may reflect rural communities valuing school music programs as cultural assets more than city and suburban communities. The general lack of music resources in rural areas would also mean the local high school would bear more responsibility as an important source of music and/or arts for the greater community. As chronicled in VanDeusen (2016) and Bannerman (2019), ensembles in rural schools often serve their communities in more intimate ways than suburban or city groups. Still, with about 65% of all public high school students in Ohio opting to not enroll in any SMC during the 2017/18 school year, advocates may want to focus on studying enrollment alongside access.

Lower enrollments in city and suburban areas may indicate particular challenges to those locales. For example, both Robinson (2018) and Shaw (2018) articulated that city schools, despite having more options for music education outside of the school as well as higher teacher pay, saw high teacher turnover. City students may see less consistency in who teaches their music classes and, therefore,

little consistency in expectations, methods, and/or subject matter from year to year, leading to greater attrition within a secondary ensemble program (Kloss, 2012).

For suburban high schools, music enrollment remains fairly low despite having the most options for students among the four locales. Schools with the lowest poverty indicators, like FRPL rate, tend to have the lower enrollment percentages in the arts. Morrison (2018) and Parsad and Spiegelman (2012) observed that schools with the most resources for music tend to be located in richer areas. These often suburban schools also tend to be less diverse than city schools, which has been shown to be a significant factor in predicting the variety of course offerings in a high school (Elpus, 2014, 2017).

When we examined the ANOVAs of each factor individually, we found the significant differences between locale to be erratic. City schools were the most distinct locale with their student-to-teacher ratios, total cost per pupil, and administrative cost per student, all of which were significantly different from each of the other three locales. Similarly, rural schools also showed themselves to have distinct features when compared to the other locales. Suburban and town schools provided more of a mix of significant differences. These inconsistencies support the continued research on both city and rural schools as distinct entities as well as whether suburban and/or town schools pose their own distinct category. Taking a closer look at Table 1, one can see how the *SE* for town schools can be higher than both suburban and rural schools at times. The additional error could be the reason for the lack of significance, but we argue that the error is the result of the broad definition of "town" for these data sets, resulting in wide range of school size, proximity to larger cities, and community resources within this categorization.

In the regression model, we found unsubstantial effects. However, according to Miksza and Elpus (2018), "It is possible to learn a lot from a regression model that does not have a particularly high R^2" (p. 139). Of the six possible equity indicators, only three betas in our model affected variation in music enrollment. The low effect suggests that music enrollment in Ohio pubic secondary schools is more of an individual school issue than one that can be addressed with broad, locale-based strokes. Teachers and advocates would serve their schools effectively by defining and solving problems on a local level instead of primarily looking for state-level solutions (Elpus, 2020; Helton, 2020). Further, budgetary differences between schools explain little about enrollment in SMCs. Teachers often cite budgetary troubles as a significant limitation to improving a program's status in a school (Fitzpatrick, 2011), but in light of these findings, those two issues may be independent. Perhaps these findings give impetus to shift the focus of advocacy for secondary music programs in Ohio toward empowering individual teachers with resources to enact the change they want in their own programs.

Advocacy Angles and Arguments

One of the challenges of any large-scale music education advocacy movement is creating arguments that can be applied to a wide variety of school settings. The findings from this study suggest that state-wide data may still be too broad for effective advocacy suggestions. In other words, values from within individual communities and schools determine the quality of the access to and enrollment in SMCs, not national or state data trends.

The next big advocacy question could then be: what possible concrete policy suggestions can be made at the local level to improve both quality of access *and* enrollment? State-wide initiatives may only provide vague suggestions for improving secondary music access, so grassroots policy initiatives made by individual communities may prove the most effective for any actualized (Helton, 2020) and enduring (Tyack & Tobin, 1994) curricular changes.

One small tangible change at the local level could be as simple as finding ways to extend instructional time and insist on dedicated space for music classes. Elective subjects like music must compete for instructional resources and attention with the other subjects as part of the ongoing legitimacy battle between school subjects (Tyack & Tobin, 1994). Miksza (2013) found that student interest and community support significantly predict the amount of instructional time dedicated to the arts. This effect implies that teachers who know their schools and communities intimately could best strategize their advocacy efforts to argue for more instructional time. Public performances, community outreach, and attention to the local interests of the school district could best serve the interests and needs of music programs. Viewing this conclusion along with the findings of the current study, we would suggest that any concrete changes made to improve the quality of a music access and enrollment be addressed locally in the form of expanded instructional time, particularly in more urban settings, which have the lowest amount of instructional time among the locales (Miksza, 2013).

Equity of access, however, does not always translate to robust enrollments in music programs. Ohio's rural schools boasted the highest enrollment percentages among the locales. Enrollment in rural schools was also significantly different from city and suburban schools, suggesting that something related to the ruralness of the school could explain the difference. As expressed by VanDeusen (2016), rural music programs tend to be rather involved with their local communities, likely garnering more support from the municipality in which the school resides. However, Miksza (2013) showed no significant effects between factors like funding and instructional time within rural schools. These two facts taken together, along with the lack of effect found in the current study, indicate that rural schools may

have an easier time eliciting community support compared to other locales, but each rural community still retains its own distinct identity and features. Therefore, teachers and advocates in rural areas would best serve their music advocacy efforts by focusing on the needs of their own communities and not on broad, state-wide initiatives.

Suburban Anomalies

Low music participation in suburban schools in relation to the rest of the locales presents an issue needing more study. Suburban schools, while often able to provide more resources for music and the arts due to better budgets and proximity to community resources, on average, have a low participation rate in Ohio. As discussed earlier, city schools present their own challenges to music access, so it makes sense that participation would be low (Kloss, 2012; Robinson, 2018). But, Morrison (2018) found that schools with the lowest percentage of students who qualify for FRPL also tended to have the lowest participation rates in arts classes. Adding to the obfuscation of this issue, the results from this study suggest that suburban Ohio schools, by having the lowest standard deviation among the locales, tend to be uniform in their low enrollment percentages.

A number of factors could explain this anomaly. One possible reason is simply that there are generally more elective options for students in suburban schools. In Ohio, classes labeled as "electives" are needed to graduate, with music being among a litany of other subjects (Ohio Department of Education, n.d.). With more options for students to fulfill this requirement, students can complete these classes outside of the music department, especially if they did not participate in ensembles in elementary or middle school. Both Elpus (2017) and Abril and Gault (2008) illustrated the rarity of non-ensemble SMCs. This lack of curricular diversity could act as a barrier to SMC access and enrollment for many students, especially those in areas more stricken with poverty (Elpus, 2014, 2017).

Another explanation involves curricular demands expected by the community. These beliefs can be driven by whatever national mood surrounds education at any given time (Tyack & Tobin, 1994). Curricular values are politically motivated and adjust to whatever seems to be valued at state and national levels. According to Abril and Gault (2008) and Gerrity (2009), principals can be very cognizant of these trends and often adjust curricular expectations accordingly. However, for the interests of music and arts advocates, decisions regarding graduation requirements and curricular decisions have become more localized in states and individual districts, meaning that opportunities for lasting change can happen and become lasting realities at the grassroots level (Helton, 2020). Finally, individual

student outcomes like high school grade point average have recently gained more legitimacy in the eyes of college admissions offices compared to college-preparedness tests like the SAT and ACT (Allensworth & Clark, 2020). These two facets provide the framework for an advocacy argument for administrators to worry less about student performance on external factors like college-preparedness exams and more on a student's individual interests. The less pressure administrators feel to satisfy the expectations of external bodies (Gerrity, 2009), the more they may feel empowered to expand access to SMCs as well as promote ensemble programs to improve enrollment.

Conclusion

As we continue to define problems to be solved by music advocacy, it is growing increasingly important to do just that: define the problem in a solvable way. The current study helps to define a problem by eliminating possible explanations for inequality in music access and suggesting that supposed problems are localized and best understood by homegrown advocates. This realization could help shift the efforts of advocacy organizations from offering broad solutions to broad problems to providing frameworks and supports meant to empower local activists. Advocacy organizations could serve their causes effectively by presenting themselves as consultants, ready to listen to the needs of individual districts and apply their expertise to help create novel solutions to distinct problems. After all, teachers and local stake-holders know the needs of their student and communities intimately and, therefore, are the ones best equipped to define and solve their music access and enrollment problems.

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