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Access to Music Education with Regard to Race in Two Urban Areas

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This quantitative study examined access to school music instruction with regard to race in two urban areas: Detroit, Michigan, and Washington, DC, in 2009–2010. We found significant differences in the provision of music instruction between schools with high and low proportions of nonwhite enrollment, in categories including curricular offerings, extracurricular offerings, and resources. In the Detroit area, only 31 percent to 60 percent of schools with high percentages of nonwhite students offered any music instruction at all. We contrast our findings with those of a National Center for Educational Statistics report to demonstrate how regional and national averages can obscure information that should guide policy, such as the influence of location and racial demographics of schools on the provision of public school music instruction. The article concludes with a discussion of the implications of using flawed data in the creation of policy and suggestions for more comprehensive and accurate data collection and analysis.

Keywords: access, demographics, music education, race

INTRODUCTION

Universal, equitable access to school music instruction has been a long-standing topic of concern for the music education community. The complexity of the concept of "access" has emerged as an important issue. Descriptions of "access" include sociological, psychological, and structural components. For example, by analyzing sociological factors (i.e., interactions among race, ethnicity, and culture with regard to teachers, students, content, instruction, and context), Butler, Lind, and McKoy (2007) demonstrated that the existence of a music program in a school did not necessarily mean that all students in the school had access to music instruction. Taking a more structural approach to describing access, Elpus and Abril (2011) found that students enrolled in high school performance ensembles were not representative of the general U.S. population. Significantly underrepresented groups included males, English-language learners, Hispanics, children whose parents had earned a high school diploma or less, and children from the lowest socioeconomic status (SES) quartile (Elpus and Abril 2011, 128). In addition, the authors reported an overall decrease in the rates of high school ensemble participation and attributed this to structural barriers to access such as "a reduction in the number of music electives offered in high schools, a decrease in schools offering music, [and an increased] focus on 'tested subjects'" (138).

In this article, we will focus on these structural barriers, examining the degree to which school music programs are available to students. While investigation of how we may alter existing music programs to ensure more equitable access is important and warranted, we can be certain that where there are no programs, entire populations are disenfranchised from what school music instruction can offer. The assertion that students who live in high-poverty areas or who are nonwhite have poorer access to school music education seems virtually axiomatic (e.g., Schmidt 2011, 3). However, in order to shape effective policy to create more equitable access, we need to know the degree to which this assertion is accurate.

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Until recently, only a handful of studies have attempted to quantify access to school music instruction, investigating string programs (Gillespie and Hamann 1998; Smith 1997), music programs (Stewart 1991), and instruction across the arts (Carey et al. 2002). In April 2012, the U.S. Department of Education's National Center for Education Statistics (NCES) published *Arts Education in Public Elementary and Secondary Schools, 1999–2000 and 2009–2010* (Parsad and Spiegelman 2012). This report synthesized data collected in 2009–2010 from seven surveys of elementary and secondary classroom teachers, music specialists, and visual art specialists from a stratified sample of public schools around the United States. When possible, the authors compared these data to the results of a similar report from 1999–2000. Completed surveys were returned by 1,150 music specialists (an 87.1 percent response rate)[1] and 730 classroom teachers (an 81 percent response rate) at the elementary level, and by 1,070 music specialists (an 81 percent response rate) at the secondary level. In the published report, the rate of music education provision in schools seemed strong: 94 percent of elementary schools offered some form of music instruction, as did 91 percent of secondary schools.

The report also included 165 supplemental tables that presented specific information drawn from survey questions about arts instruction (these tables can be found at http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2012014). For example, Supplemental Table 2 describes the following information about music programs at elementary schools that reported providing music instruction: frequency of instruction, portion of the school year instruction was offered, primary space used for instruction, type of instructor employed (e.g., full-time music specialist), and existence of a district curriculum guide for instructors to follow. Most of the data in the supplemental tables are disaggregated by enrollment size, community type, region, percentage of nonwhite student enrollment, and SES (measured by the percentage of students who qualified for free or reduced-price lunch). Therefore, variations according to school characteristics are apparent.

In 2009–2010, we investigated the relationship of race, SES, and structural access to music instruction. We were not aware that the NCES, with its superior resources and ability to gather large amounts of data, had been asking similar questions at the same time. Because of the coincidence of our study and the NCES study, in this article we will both present our study and provide a critical analysis of our results in light of the NCES data (Parsad and Spiegelman 2012). This analysis will focus on contrasting our findings with those of the NCES study and discussing the policy implications of these differences. Finally, we will outline possible implications of using flawed data in policy formulation at the state and district levels and make suggestions for more comprehensive and accurate data collection and analysis.

ACCESS TO MUSIC EDUCATION WITH REGARD TO RACE IN TWO URBAN AREAS

The purpose of our study was to investigate differences between music programs offered in public schools in the Detroit, Michigan, and Washington, DC, metropolitan areas with regard to the proportion of nonwhite student enrollment in the school. Our null hypothesis was that at the elementary, middle, and high school levels, the racial composition of a school's population would not be related to access to music instruction.

Procedures

Selected Metropolitan Areas

We drew samples for this study from all public schools (including charter schools) in the Detroit metropolitan area (Oakland and Wayne counties) and the Washington, DC, metropolitan area (Washington, DC; Charles County, Montgomery County, and Prince George's County in Maryland; and Alexandria City, Arlington City, Fairfax County, Fauquier County, Loudoun County, Manassas City, and Prince William County in Virginia). We selected these geographic areas because each was home to approximately 3 million inhabitants, included socioeconomic groups ranging from wealthy to generational poverty, had diverse racial and ethnic populations, and were accessible to the researchers. The nature of a school (e.g., magnet arts school, strict discipline academy) was not a factor in whether it was included.

Sampling Procedure

In each geographic area, we sorted all schools by age (high school, middle school, or elementary school), for a total of six groups (see Table 1). Within each group, we ranked individual schools by their percentage of nonwhite students. We chose to categorize individual schools rather than districts to illuminate neighborhood-level differences in access to music education. We referred to the 25 percent of schools with the lowest nonwhite enrollment as "low nonwhite" (low NW) and the 25 percent of schools with the highest nonwhite enrollment as "high nonwhite" (high NW).[2] Using slips of paper in a container, we randomly drew fifteen schools from each group (e.g., Detroit elementary high NW, Detroit elementary low NW, DC elementary high NW, DC elementary low NW, etc.) for a total of sixty elementary schools, sixty middle schools, and sixty high schools (thirty of each from each geographic area), and an overall total of 180 schools. In addition, we drew five alternates for each group. We considered data from each metropolitan area separately. Because some schools included more than one age group (K–8 or K–12), two schools were drawn in more than one category.

TABLE 1
Quartile Descriptions

	N	Quartile Size	Nonwhite Enrollment, High NW Quartile	Nonwhite Enrollment, Low NW Quartile	Schools Reporting 0% White Enrollment	Percentage of Quartile Reporting 0% White Enrollment
Detroit area elementary schools	541	136	>99%	0–14.9%	46	33.8%
DC area elementary schools	700	174	>93%	4–42%	38	21.8%
Detroit area middle schools	272	68	>99.6%*	2.3–22.9%	29	42.6%
DC area middle schools	166	41	>85%	5–39%	8	19.5%
Detroit area high schools	185	47	>99%	4–19%	21	44.7%
DC area high schools	138	34	>94%	4–62%	11	32.4%

Note: *Included tenth rather than rounding to 100%.

Access Rubric

In order to assess access to school music instruction, we developed a rubric to measure structural access based on an age-specific examination of music offerings (see Appendix A). Use of this rubric resulted in an access rating on a scale of 0 to 18, which described degrees of structural access ranging from minimal (0–6) to adequate (7–12) to enriching (13–18). We asked elementary programs to report curricular and extracurricular music offerings, minutes of music instruction per week, and student/teacher ratios. Middle school programs reported curricular and extracurricular music offerings, music teacher full-time equivalency (FTE) per student, and student/teacher ratios in nonperformance music classes (if offered). High schools reported curricular and extracurricular music offerings, music teacher FTE per student, and the availability of additional resources such as a music computer lab or keyboards. Student/teacher ratios were not included in the evaluation of secondary performance offerings, because a poor-quality program may have a low student/teacher ratio if it is not attractive to students, while a high-quality program may appear understaffed because of exceptional student interest. For the purposes of this study, we limited data collection to ongoing music instruction financed by the school and supervised by school employees.

METHOD

In spring 2010, we began our study by investigating public databases of student demographic information. We located and downloaded racial demographics and the percentage of students receiving free or reduced-price lunches for every Michigan school on the Michigan Department of Education Center for Educational Progress and Information website (Michigan Department of Education Center for Educational Performance and Information 2010). For schools in Washington, DC, Virginia, and Maryland, we found this information on individual school report cards online.[3] Once samples were drawn, we gathered contact information for principals and/or music teachers (depending on the availability of contact information on school websites) and then sent surveys via kwiksurvey.com.

Initial response levels to the online survey were poor (about 10 percent). Therefore, we called schools to conduct phone interviews using the online survey as a script and/or located a different music teacher from the same building

TABLE 2
Music Access in Elementary Schools

	Washington, DC			Detroit		
	Low NW Mean Score	High NW Mean Score	*p*	Low NW Mean Score	High NW Mean Score	*p*
Curricular (6 points possible)	5.00	5.20	.695	3.82	1.73	.008*
Extracurricular (4 points possible)	1.07	.67	.425	1.09	1.33	.886
Student/teacher ratio (4 points possible)	1.73	1.47	.483	1.09	1.07	.726
Instructional time (4 points possible)	.93	1.47	.143	1.27	1.33	.754
Total (18 points possible)	8.73	8.80	.814	7.27	5.47	.415
Enriching *n* (13–18 points)	0	0		0	1	
Adequate *n* (7–12 points)	14	14		6	6	
Minimal *n* (0–6 points)	1	1		5	8	
N	15	15		11	15	

Note: * $p < .05$.

who was willing to answer the survey online. Despite our tenacity over the course of nearly six weeks, not all the selected schools responded, resulting in fewer than fifteen schools in some of the sample groups. We opted not to call additional schools (outside of the five previously drawn alternates), because, particularly in the Detroit area sample, such an approach raised concerns that schools without music programs would be overrepresented. It was easy to discover that a school did not offer music but harder to gather data from schools that may have had music programs but did not return calls or were not willing to participate. We chose incomplete data over the possibility of a sample that self-selected toward overrepresentation of schools without music programs. The final response rate was 88 percent (89 percent low NW and 87 percent high NW).

The Role of SES

We originally intended to investigate the impact of both race and SES on access to music education. However, in school year 2009–2010, SES data were not available on a by-building basis for all of the Washington, DC, area schools. Because of the strong correlation between high NW areas and low SES areas, the role of SES could not be ignored. Therefore, we collected SES data regarding the Detroit metropolitan area schools and analyzed them alongside the data on race to examine possible interactions.

Quartile Descriptions

Table 1 contains data regarding the racial characteristics of the high and low NW quartiles for each age level in each geographic area. We defined an elementary school as a school serving any or all grades K–5; a middle school as a school serving some combination of grades 5–9; and a high school as a school serving any or all grades 9–12.[4] If we drew a K–8, 6–12, or K–12 building, we inquired only about the relevant division (elementary, middle, or high school) as the school defined it. If the school did not divide its grades in this manner, we asked about grades K–4 for elementary, 5–8 for middle school, and 9–12 for high school.

Data analysis consisted of descriptive statistics and Mann–Whitney U tests at each grade level (elementary, middle school, and high school) to determine whether the racial composition of a school population made a significant difference with regard to structural access to music education. Nonparametric statistics were used for this portion of the analysis because the parametric assumption of a large sample size was not met (groups ranged in size from eight to fifteen respondents). We set the alpha level for significance at $p < .05$. We employed multiple regression analysis to examine the relative effects of location and SES on access ratings. Parametric statistics were appropriate for this analysis, which considered the entire Detroit area ($n = 78$) and DC area ($n = 81$) samples and thus had adequate sample sizes. For specific information regarding access ratings and definitions of rating categories, please see Appendix A.

RESULTS

Elementary Schools: Detroit Area

The fifteen elementary schools in Detroit's high NW sample reported an average of 99.66 percent NW students, and the eleven low NW schools averaged 8.48 percent NW enrollment. Schools with a high proportion of nonwhite enrollment had significantly fewer minutes of curricular instruction ($p = .008$; see Table 2). Children in low NW schools received an average of 61.36 minutes of curricular general music a week, whereas students in high NW schools averaged 45 minutes. While 100 percent of the low NW schools offered music classes, only 60 percent of the high NW sample had any form of music instruction–and in two of the nine schools that offered music, instruction was available only for select students in a pull-out program. For schools offering music programs, student/teacher ratios were similar (for high NW schools, 26/1; for low NW schools, 24.85/1). The average number of music teachers (considering only schools with music programs) was higher in low NW schools (1.08 FTE) than in high NW schools (0.88 FTE).

Elementary Schools: Washington, DC, Area

The fifteen high NW elementary schools in the DC area reported an average of 98.48 percent NW enrollment, while the fifteen low NW elementary schools reported an average of 28 percent NW enrollment. Data analysis indicated no significant differences in access ratings between low NW and high NW elementary schools (see Table 2). In fact, high NW schools had an average of 8 minutes more instruction per week than low NW schools (54.25 minutes and 62.5 minutes, respectively). Average student/teacher ratios for elementary general music classes were consistent between groups (23.5/1).

Middle Schools: Detroit Area

In the Detroit area, school configurations differed between the sampled groups. Ten of the twelve low NW middle schools served grades 6–8, one served grades 7–8, and one served grades 5–6. The thirteen high NW middle schools were typically housed in K–8 buildings. Significant differences in access to music education were found between low and high NW samples in all categories except nonperformance music offerings (see Table 3). Only 31 percent of the high NW sample offered any form

TABLE 3
Music Access in Middle Schools

	Washington, DC			Detroit		
	Low NW Mean Score	High NW Mean Score	*p*	Low NW Mean Score	High NW Mean Score	*p*
Curricular (6 points possible)	3.93	3.69	.849	4.17	0.85	.000*
Extracurricular (4 points possible)	1.60	.85	.047*	.92	0	.010*
Student/teacher ratio (4 points possible)	1.60	1.85	.598	1.42	.23	.002*
Nonperformance (4 points possible)	1.20	.77	.788	.67	0	.191
Total (18 points possible)	8.33	7.15	.56	7.17	1.08	.000*
Enriching *n* (13–18 points)	1	0		1	0	
Adequate *n* (7–12 points)	12	10		4	0	
Minimal *n* (0–6 points)	2	3		7	13	
N	15	13		12	13	

Note: * $p < .05$.

of music instruction, while 100 percent of the low NW schools offered music. This lack of programs was somewhat similar to the findings for Detroit elementary schools. However, high NW elementary schools that offered music tended to have adequate access ratings, whereas high NW middle schools that offered music were all rated as "minimal access."

Middle Schools: Washington, DC, Area

Middle schools in the DC metropolitan area typically served grades 6–8. The thirteen high NW middle schools reported an average of 96 percent NW student enrollment. The fifteen low NW middle schools reported an average of 20 percent NW student enrollment. Only extracurricular music offerings were significantly different between high NW and low NW schools ($p = .047$; see Table 3). Low NW middle schools offered twice as many extracurricular music classes as did high NW middle schools, with chorus and jazz band being the most common ensembles. One high NW middle school did not have a music program. The number of music teachers per school was lower at high NW middle schools than at low NW middle schools, although the number of students in the school per music teacher was also lower for high NW schools. Smaller school sizes in high NW areas may have contributed to fewer music offerings.

High Schools: Detroit Area

At the high school level, the fifteen high NW schools in Detroit averaged 99.7 percent NW student enrollment, compared to 12.3 percent for the twelve low NW schools. Low NW schools were significantly more likely to offer music instruction (100 percent of the sample) than were high NW schools (40 percent). Perhaps because of this, high NW school music access was significantly lower in all categories except resources (see Table 4). However, even when consideration was limited to programs that offered music, high NW schools were still weaker than low NW schools in terms of curricular offerings, extracurricular offerings, and overall quality of access.

TABLE 4
Music Access in High Schools

	Washington, DC			Detroit		
	Low NW Mean Score	High NW Mean Score	*p*	Low NW Mean Score	High NW Mean Score	*p*
Curricular (6 points possible)	5.13	3.13	.849	4.42	1.4	.000*
Extracurricular (4 points possible)	2.53	1.63	.047*	1.83	0.4	.010*
Student/teacher ratio (4 points possible)	1.60	1.50	.598	1.41	.93	.002*
Resources (4 points possible)	1.27	.50	.788	.58	.13	.191
Total (18 points possible)	10.53	6.75	.56	8.25	2.87	.000*
Enriching *n* (13–18 points)	2	1		3	1	
Adequate *n* (7–12 points)	12	4		5	3	
Minimal *n* (0–6 points)	1	3		4	11	
N	15	8		12	15	

Note: * $p < .05$.

High Schools: Washington, DC, Area

High schools in the Washington, DC, area typically served grades 9–12. The eight high NW high schools reported an average of 98 percent NW enrollment, whereas the low NW high schools reported an average of 29 percent NW student enrollment. Significant differences between high and low NW schools were found in total access ratings ($p = .019$; see Table 4) and in the subcategory of curricular music offerings ($p = .019$). A quarter of high NW high schools did not have a music program. The number of students in the school per music teacher was equivalent for both groups.

Socioeconomic Status: Detroit Only

SES is highly correlated with the percentage of nonwhite students in a school. Therefore, the possible role of SES could not be ignored in this study. In the Detroit sample ($n = 78$ schools), SES was strongly correlated with the racial demographics of school buildings at each level (see Table 5). At the middle and high school levels, SES and access ratings were strongly correlated, as were racial demographics and access ratings. However, at the elementary level, music access ratings appeared to be independent of SES and racial demographics.

In order to investigate the relative effects of quartile (race) and SES on access scores, we used linear regression analysis (Pearson's R-squared). This analysis indicated that 24 percent of the variance in access ratings could be attributed to SES ($p = .002$) and that the corresponding difference in ratings was 0.7 points on the 18-point scale. Quartile (high vs. low proportion of nonwhite students) accounted for 23.4 percent of the variance in access ratings ($p = .000$), which translated to a difference of 4.4 points on the 18-point access scale. When quartile and SES were considered simultaneously, the two combined factors accounted for 24.9 percent of the variance in access ratings among Detroit area schools. When analyzed together, SES accounted for a difference of 0.4 points and quartile for a difference of 2.0 points on the 18-point access scale, with their relative effects on access ratings not being statistically significant. Essentially, when the variables were separated for statistical analysis, both lower SES and quartile (higher concentrations of nonwhite students) were associated with significantly lower scores on the access scale. When the two variables were considered together, they still were associated with lower scores, but the close correlation of SES and race makes it difficult to isolate the influence of one of these variables over the other.

Comparison of Detroit and DC

Multiple regression analysis of all data ($N = 159$ schools) revealed that location (metropolitan area) accounted for 18.6 percent of the variance in access scores ($p = .000$). That is, location accounted for a difference of 3.5 points in music access ratings, with schools in the Washington, DC, area scoring higher than schools in the Detroit area. When both locations were considered together, quartile (proportion of nonwhite students) accounted for 16 percent of the variance in scores ($p = .000$), meaning that schools from the high NW quartile scored 3.3 points lower than schools from the low NW quartile on the access scale. When both location (metropolitan area) and quartile (race) were included in the regression analysis, the combination of these two variables accounted for 31.2 percent of the variance in scores ($p = .000$), with high NW schools scoring 2.9 points lower (regardless of location) than low NW schools and schools in the DC area scoring 3.2 points higher (regardless of quartile) than Detroit schools. These results indicate that (1) any student would have better structural access to music instruction in the Washington, DC, area than in the Detroit area; and (2) students who attend schools with a high proportion of nonwhite students have poorer structural access to music education than students who attend schools with a low proportion of nonwhite students.

TABLE 5
Correlations of Race and Socioeconomic Status, Detroit

	n	r_s	*t*	*df*	One-tailed *p*	Two-tailed *p*
Elementary, race: SES	25	.6901	4.57	23	>.0001**	.0001**
Elementary, race: access rating	25	.0525	0.25	23	.402	.805
Elementary, SES: access rating	25	.1465	0.71	23	.2424	.4848
Middle school, race: SES	25	.7884	6.15	23	>.0001**	>.0001**
Middle school, race: access rating	25	.5865	3.47	23	.0014**	.0021**
Middle school, SES: access rating	25	.6675	4.3	23	.0001**	.0003**
High school, race: SES	27	.7844	6.32	25	>.0001**	>.0001**
High school, race: access rating	27	.528	3.11	25	.0023**	.0046**
High school, SES: access rating	27	.6049	3.8	25	.0004**	.0008**

Notes: Spearman rank-order correlation coefficient. * $p < .05$; ** $p < .01$.

Limitations of This Study

This study had several limitations that must be considered. The researchers did not scale the sample size to reflect differences in the number of schools at the different grade levels. Many high schools served thousands of students, while elementary schools tended to serve a few hundred. However, this was a deliberate choice, because data were separated by age group for analysis and reporting. Researchers in the future may wish to use a formal stratified sample to allow comparisons across age groups. Furthermore, readers should note the authors' choice to sample the highest and lowest quartiles rather than randomly selecting among all possible schools.

Finally, state and school databases may not accurately reflect the student populations in schools because school-reported race categories are based on the U.S. census race categories of Asian/Pacific Islander, black, Hispanic, Native American, and white. Some students, such as those from Middle Eastern backgrounds and those with mixed racial heritage, are not described well by these categories. Therefore, some students were not accurately represented in these data, particularly for schools in parts of the Detroit and DC areas where significant populations of students from Middle Eastern ethnic groups reside.

CRITICAL ANALYSIS OF DIFFERENCES FROM NCES FINDINGS AND IMPLICATIONS FOR POLICY

The current study investigated differences in access to music education with regard to race in the Detroit, Michigan, and Washington, DC, metropolitan areas. We found significant differences between high NW and low NW schools at all grade levels in various categories, including curricular offerings, extracurricular offerings, and total access rating. These differences were particularly stark in the Detroit area, where 100 percent of the low NW sample offered music instruction but only 60 percent of high NW elementary schools, 39 percent of high NW middle schools, and 40 percent of high NW high schools offered any kind of music instruction at all. Regional differences also affected access to music instruction: schools in the Detroit area had significantly lower access ratings than did schools in the DC area.

Representing Our Increasingly Segregated Society

A major difference between our study and the NCES study was how the variable of race was measured. In the NCES study, school enrollment was characterized as (1) less than 6 percent nonwhite, (2) 6 percent to 20 percent nonwhite, (3) 21 percent to 50 percent nonwhite, or (4) more than 50 percent nonwhite. In contrast, we ranked all area schools according to their percentage of nonwhite enrollment and then sampled from the highest and lowest quartiles. This resulted in samples with much higher concentrations of nonwhite students than would be represented by the "50 percent or more" criterion: 85 percent to 94 percent in the DC area, and 99 percent to 100 percent in the Detroit area (see Table 1). Thus, our quartile sampling indicated that schools are quite segregated. These findings are similar to those of other demographic research that indicates a rising proportion of nonwhite students in schools, as well as an increase in resegregation (Orfield and Lee 2007; Bischoff 2008). Limiting the descriptor of race to "50 percent or more nonwhite" seemed to obscure the relationship between very high concentrations of nonwhite students and a lack of structural access to music instruction.

Policy that is based on an inadequate representation of how segregated our schools are cannot recognize or address inequities that are based on race. If we are to solve the problem of equitable access to music instruction or to education in general, we cannot gloss over increasing segregation in our schools and communities.

What "Counts" as School Music?

Another notable difference from the NCES study is that our study only included ongoing music instruction that was funded by the school and taught by a school employee (who, in nearly all cases, was certified and "highly qualified" to teach music). Although the NCES Supplemental Tables 5 and 6 do indicate whether instruction was provided in a dedicated classroom and/or by a music specialist, it was unclear how the programs described in the NCES report were funded–in some districts, for example, the Parent–Teacher Association hires and pays the "special" teachers (see Fertig 2012). Also, many questions in the NCES study used phrases like "schools reported that they offered" without specifying that these programs were funded by the school. For example, NCES Supplemental Table 22 pertains to the percentage of schools that reported receiving monetary and/or nonmonetary support from outside organizations, and NCES Supplemental Table 23 deals with the percentage of schools that used partnerships or collaborations to help meet arts education goals. However, the tables do not mention whether these programs were supplemental to or in lieu of ongoing, school-provided instruction. In our study, we excluded programs run by outside arts organizations or charities, grant-funded programs administered by nonschool personnel, and so on. If a study is to indicate the degree to which public schools are providing music instruction, it cannot include grant-funded programs and programs provided by outside agencies as sources of music education in its analysis–these are de facto not public school programs, and their presence may actually serve to mask inequities in public education. The NCES report's aggregate result indicating that 94 percent of elementary and 91 percent of secondary schools had music programs appears

to have included instruction funded by and/or provided by nonschool groups in its analysis.

Policy based on research that includes nonschool provision of instruction assumes an artificially inflated rate of music education. These programs may be high quality or low quality, ongoing or short term, and provided by expert educators or not–but they are not school music instruction. Allowing nonschool instruction to stand in for public provision of school music instruction in policy analysis removes the onus from the public to provide what students need. Since most grant-funded projects are short term, the results of this inclusion are potentially devastating.

The Effects of Averages

The possible policy impact of averaging on the interpretation of the data is also notable. The NCES study indicated that 94 percent of elementary schools and 91 percent of secondary schools reported some form of music instruction,[5] with some variation based on school characteristics (e.g., by region or by race). Averaging the rates of music instruction for all 159 schools in our study indicated that roughly 90 percent of schools offered music, a number similar to that in the NCES report. However, averaging disguises the stark differences among samples. In the Detroit area, about 80 percent of schools offered access to some form of music instruction. This average does not illustrate that 100 percent of the low NW sample provided music, compared to 31 percent to 60 percent of sampled high NW schools (depending on age level). In the Washington, DC, area, only one middle school and two high schools in the sample lacked ongoing music instruction, and in each case, the school without a music education program was a high NW school. Moreover, the differences in access ratings between the Detroit area and the Washington, DC, area were not apparent in the NCES study. It seems that averaging in the NCES report may have obscured some important nuances of the data.

Critics may observe that we also engaged in averaging by lumping together "the Washington DC area," a decision that obscured important differences. In our study, the DC area included counties and cities in two states (Virginia and Maryland) and the District of Columbia, all of which operate under different systems with regard to funding, school system administration, and testing. These differences must be acknowledged, as the policy changes required to make education more equitable will likely vary from state to state. The averaging of data is characteristic of statistics, which are by their very nature not intended to describe individual cases but to indicate trends of and relationships between groups. However, if we are to rely on these numbers for policy, we must see the world with a sufficient level of nuance, detail, and disaggregation in order to recognize inequity if it is present.

Local Implications

The stated goal of the NCES is to "provide consistent, reliable, complete, and accurate indicators of education status and trends, and report timely, useful, and high quality data to the US Department of Education, the Congress, the states, other education policy makers, practitioners, data users, and the general public" (Parsad and Spiegelman 2012, ii). Certainly, the validity of this study is not in question, nor do we question its design or usefulness as a broad descriptor of national trends. However, the nature of the questions asked and the methods of data collection and reporting do not reveal the relationship of very high concentrations of nonwhite students to the lack of access to any kind of music instruction at all that we found to some extent in the DC area and to a larger degree in the Detroit area. Since education is primarily administered on a state, county, and/or district basis, it seems that there is a need for localized examination of access to music instruction.

Our study is unusual in that it attempted to quantify the degree of structural access (minimal, acceptable, enriching) with regard to student/teacher ratio (elementary) and music teacher FTE per student (secondary), types of music offerings, and additional resources on a scale of 0–18 (see Appendix A). Many of the schools that offered some form of music instruction only scored in the "minimal" category, meaning that an administrator could report to the NCES that the school offered music instruction even if, for example, only one music teacher was available for a high school of 2,000 students (information only included on a supplemental table). In addition, we did not attempt to gauge the quality of the music instruction to which students had access–we only aimed to indicate a relative degree of available programming. Moreover, structural access in the form of program availability does not necessarily ensure equitable access, because race, ethnicity, gender, and cultural factors also impact access to music instruction (Butler, Lind, and McKoy 2007; Gustafson 2009; Wheelhouse 2009).

The NCES report presents a picture of increasing access to music instruction since 1999–2000. However, data from our study indicated that the national averages reported by the NCES were not representative–for the Detroit area, at least. If policymakers in Lansing (or school district leaders in Detroit) were to read the numbers in the NCES report, they might make decisions differently than if they read our study. For that reason, our study seems to indicate that local information must be gathered as a part of policy analysis before local decision-making is carried out. For this purpose, Michigan Youth Arts recently undertook a survey of all Michigan schools at the district level (Cirillo and Morrison 2012). However, only about 20 percent of districts responded. The potential effects of nonresponse bias[6] are undeniable. Nevertheless, on the basis of this survey, the Michigan Arts Education Instruction and Assessment program is moving forward with plans to construct an arts

instruction blueprint and audit tool for "voluntary adoption" by districts across the state (Michigan Assessment Consortium 2012).

If anything, structural access to music instruction may have declined since the time data were collected for our study. It seems as though arts instruction as a part of public school curricula is increasingly under fire. A large urban school district in Michigan recently voted to dismiss all elementary art, music, and physical education teachers (Lavey 2013). The new five-year contract will eliminate all planning time from elementary teachers' schedules and will require that classroom teachers teach art, music, and physical education in addition to reading, writing, math, science, and social studies (Lavey 2013). This district has a student body that is 71 percent nonwhite, and 66 percent of its students qualify for supplemental nutrition funding (Michigan Department of Education Center for Educational Performance and Information 2013). If we agree that access to comprehensive, high-quality, sequential music instruction must be equitable and universal, then annual mandatory reporting at the school building level with regard to structural access to (rates of provision of) arts instruction may be necessary if we wish to have a reliable and valid picture on which to base our policy.

Suggestions for Future Study

According to a conservative estimate, 2.1 million children in the United States had no access to music education whatsoever in 2009–2010 (Pellegrinelli 2012). The findings from our study supported previous claims that in some places, school music programs are not even present for students to choose to join or reject. Further investigation of the policy decisions that have led to differences in structural access to music instruction based on location and on the proportion of students in a school who are nonwhite seems warranted. Specifically, an investigation of the ways policies differ between Virginia, Maryland, Washington, DC, and Michigan may point to policies that are leading to more equitable provision of instruction, which may then be adapted to other locations.

Our study revealed that music instruction in elementary schools seems to be sheltered from the effects of race and poverty. That is, access ratings at the elementary level were not strongly correlated with a high proportion of nonwhite students or with high proportions of students who receive free or reduced-cost lunches. Perhaps music instruction is viewed as more important for younger students, and this allows access to music education to transcend SES and racial boundaries. Additional research regarding differences between elementary and secondary access to music education is needed.

Both our study and the NCES study included traditional public and public charter schools. In our study, groups were too small to divide further in order to investigate possible differences between traditional public schools and charter schools. Similarly, the NCES study report and supplemental tables did not disaggregate data with regard to status as a traditional public school or charter school. Anecdotally, our study found that charter schools seemed equally likely to offer (or not offer) music instruction. However, any teachers who were not "highly qualified" to teach music taught in charter schools. Because charter schools are serving an increasing number of urban students, researchers may wish to investigate possible differences between charter schools and traditional public schools in regard to rates of provision of music instruction, music curricula, or other factors. It might also be interesting to compare and contrast states like Virginia, which have relatively few charter schools, and Michigan, which has many, in order to illuminate how this policy difference affects the provision of arts instruction.

CONCLUSION

Both our study and the NCES study indicate that schools that serve a high proportion of nonwhite students and/or students in poverty are also the schools most likely to lack any form of music instruction. Research also indicates that students from disadvantaged backgrounds may stand to gain the most from sustained, high-quality instruction in the arts in general (e.g., Catterall, Dumais, and Hampden-Thompson 2012) and in music specifically (e.g., Southgate and Roscigno 2009). To achieve the lofty goal of a more equitable and musical society, policymakers must acknowledge current inequities in access to music education and carefully examine the structures, policies, and narratives that contribute to them.

NOTES

1. Although visual arts specialists at the elementary and secondary levels were also surveyed, our article pertains specifically to music education, and we exclude mention of the visual arts sample here and throughout the article for ease of reading.
2. This nomenclature parallels the previously used terms "low minority" and "high minority" while taking into account that in many of these schools, white students are the "minority."
3. These websites are not included as references because that information would compromise confidentiality.
4. Schools that housed only grade 9 were considered high schools.
5. As stated previously, it is unclear how much of this high average is funded by or provided by nonschool sources. While these programs may be considered

"access" to music instruction, they are not music education provided by a public school.

6. For example, schools with poorer programs are less likely to respond, schools that have fewer resources are less likely to respond, and so on.

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APPENDIX A

Access Rubric

Elementary	Middle School	High School
Curricular **6:** General music + curricular ensemble or lessons **3:** General music only **0:** No music offerings	*Curricular* **0–6:** No. of curricular music offerings (+1)	*Curricular* **0–6:** No. of curricular music offerings
Extracurricular **4:** Two or more extracurricular music offerings **2:** One extracurricular music offering **0:** No extracurricular music offering	*Extracurricular* **0–4:** No. of extracurricular music offerings	*Extracurricular* **0–4:** No. of extracurricular music offerings
Student-Teacher Ratio **4:** 0–18:1 **2:** 19–25:1 **0:** 26+:1	*Total Students per Music FTE* **4:** 0–199:1 **3:** 200–299:1 **2:** 300–399:1 **1:** 400–499:1 **0:** 500+:1	*Total Students per Music FTE* **4:** 0–449:1 **3:** 450–549:1 **2:** 550–649:1 **1:** 650–749:1 **0:** 750+:1
Amount of Instruction **4:** 120+ min/week **2:** 60–119 min/week **0:** 0–59 min/week	*Nonperformance Music Curricular Offerings* **4:** Two or more **2:** One **0:** None	*Music Resources* +**1:** AP/IB music +**1:** Music computer lab +**1:** Piano/keyboard lab +**1:** Instrument class (e.g., guitar) with instruments provided by school
TOTAL POINTS (18)	TOTAL POINTS (18)	TOTAL POINTS (18)

Total points: 13–18 = enriching access; 7–12 = adequate access; 0–6 = minimal access.

Definitions:

Curricular: Music instruction offered during school day (not lunch, recess, or a zero hour).

Extracurricular: School-provided instruction outside school day (including lunch, recess, etc.).

Student/teacher ratio: Participant teacher's estimate of average general music class size.

Students per music teacher FTE: Total school population divided by reported full-time equivalent (FTE) music teachers in the building. For example, a high school with 1,000 students reported three music teachers, but two were itinerant, resulting in an FTE of 2.6 for the building. This was 384.6 students per music FTE, for a total of 4 points.

Performance ensemble: Groups such as bands, choirs, and orchestras. Only one of each ensemble type was counted for points. For example, a school that offered ninth-grade band, marching band, wind ensemble, and choir was counted as having two offerings (band and choir). However, fundamentally different offerings were counted separately. Therefore, several bands, jazz band, women's choir, mixed choir, and show choir were counted as four offerings (because jazz band and show choir were considered to be fundamentally different from the more traditional bands and choirs).

Nonperformance: Instruction not leading to performance (e.g., theory, appreciation, class piano).