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Socioeconomic Status and Band Contest Ratings

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The Mission Statement of The National Association for Music Education (2011) states "every individual should be guaranteed the opportunity to learn music and to share in musical experiences." However, it is possible that not all children in this country are given the same musical opportunities and experiences. To what extent does socioeconomic status impact the quality of music education available to students? What impact does it have on musical achievement? This study explores these issues by examining the relationship between socioeconomic status and the ratings of Texas middle school and high school bands at concert and sight-reading contests.

The University Interscholastic League (UIL) governs Texas public school academic, athletic, and music contests and is the largest inter-school organization of its kind in the world (University Interscholastic League, n.d.a). The music division of UIL is an important part of music education in Texas, with over half a million middle school and high school students participating in UIL music events annually (University Interscholastic League, n.d.b). Each spring UIL Band Concert and Sightreading Contests are held in every UIL region across Texas (University Interscholastic League, 2011). According to UIL's Constitution and Contest Rules (2011), these contests consist of a concert portion, in which bands perform three prepared contest selections, and a sight-reading portion, in which students read a new piece of music. A panel of three judges evaluates the concert portion of the contest and a separate panel of three judges evaluates the sight-reading portion. Each judge gives each band a rating from 1 to 5, with 1 being the highest rating. The scores within each panel are then averaged to give each band a composite rating for their concert performance and one for their sight-reading performance. Schools may enter more than one band in the contest, with the top band being designated as Varsity, the second as Non-varsity, and the third as Sub Non-varsity.

Bornstein and Bradley (2003) defined socioeconomic status (SES) as "the relative position of individuals, families, or groups in stratified social systems where some societal values (e.g., occupational prestige, education) are not uniformly distributed" (p. 2). In this study, SES was defined using data from the Texas Education Agency (TEA). TEA calculates the percentage of economically disadvantaged students for each school in Texas by taking the sum of all students eligible for free or reduced lunch or eligible for other public assistance and then dividing by the total number of students (Texas

Education Agency, 2010). These data for Texas schools are published annually in the Academic Excellence Indicator System (AEIS) reports (Texas Education Agency, n.d.).

Eligibility for free or reduced lunch is frequently used as a measure of poverty and socioeconomic disadvantage (Fitzpatrick, 2006; Nichols, 2003). Free or reduced lunch is issued on the basis of the Income Eligibility Guidelines, which are employed by all schools, institutions, and facilities participating in the National School Lunch Program (National School Lunch Program, 2011). For the 2009-2010 school year (the most recent year for the which the Texas AEIS reports are available), a family of four would need to make $40,793 or less to receive reduced lunch or $28,665 or less to receive free lunch (Food and Nutrition Service, USDA, 2009).

Researchers have demonstrated the impact SES can have on general education as well as music education. According to Albert (2006a), administrative support is essential to the creation of a musically rich environment for students. Research suggests that SES might influence both the initial establishment of and the ongoing perception of a school's music program, which can possibly affect administrative support for the program (Albert, 2006a; Corenblum & Marshall, 1998). The research of both Corenblum and Marshall (1998) and Renfro (2003) found lower SES to be associated with lower administrative support. Albert (2006a) stated that administrative support "may be a factor in determining an instrumental music program's quality and accessibility" (p. 42).

Lack of administrative support for school music programs can result in lack of funding for these programs (Corenblum & Marshall, 1998; Hinckley, 1995), funding that is vital to the development of high quality music education (Albert, 2006a). Albert (2006a) stated "although instrumental music teachers direct learning activities, administrators and school districts create school support for instrumental music programs by deciding what resources will be allocated for them" (p. 42). Kozol (1991) and Renfro (2003) documented the inequalities in education, pointing to the poor quality or lack of facilities and equipment in lower SES situations due to lack of funding.

SES has also been found to be a predictor of parental support of school music programs, with low SES being associated with low parental involvement (Corenblum & Marshall, 1998; Renfro, 2003). The research of Hoover-Dempsey, Bassler, and Brissie (1987) found SES of the students in a school to be significantly correlated with parental involvement, attendance at parent-teacher conferences, parent home instruction, and parent volunteerism. Hinckley (1995) indicated that low SES parents are often not involved in their children's music programs due to work schedules or not feeling comfortable in the school environment. In addition,

> low SES parents may value school activities such as instrumental music programs, but the associated costs may prohibit their children from participating…Monetary investments necessary to participate in an instrumental program include obtaining and maintaining an instrument and purchasing supplies such as reeds, oil, strings, and sheet music (Albert, 2006a, p. 39).

Furthermore, SES may be related to the attitudes and circumstances of the students themselves. Corenblum and Marshall's survey (1998) of high school band members found SES to be a predictor of students' attitudes toward the band program. Lower SES was associated with more negative attitudes. Furthermore, sometimes students of low SES are limited in their ability to be involved with extra-curricular activities, such as music, due to the need to work after school (Renfro, 2003). Also, sometimes these

students don't have room in their school schedule for arts classes because they must take remedial classes (Renfro, 2003).

The teaching in low socioeconomic conditions is not always of a high quality (Kozol, 1991). Research has indicated that teachers often have lower expectations and standards for students in poorer schools (Hinckley, 1995; Kozol, 1991; Ogbu, 1974). Pre-service teacher training has not always adequately prepared teachers to teach in these settings (Fiese & DeCarbo, 1995), which are frequently understaffed and overpopulated (Hinckley, 1995). This may be why in Corenblum and Marshall's study (1998) of band students, students' perceptions of band teacher attitudes in lower SES settings were more negative. These difficult circumstances can lead to high teacher turnover in these low SES schools (Renfro, 2003).

SES may also be linked to general academic achievement. In DeHaan and Havighurst's study (1957), schools were ranked by the average SES of the students attending. The school with the highest SES had the highest achievers in both intellectual talent and artistic talent. Similarly, Stang's research (1955) found that gifted children (defined as those of high intelligence and high creativity) were more frequently found in homes of higher SES. In addition, this research demonstrated that gifted children of lower SES had problems realizing their potential. Furthermore, Nichols (2003) found SES to be the best predictor of the failure rate on the Indiana Graduation Exam.

The relationship between SES and achievement may extend to musical aptitude and achievement. In his study of students from grades 4 to 12, Rainbow (1965) found SES to be an important predictor of musical aptitude. The research of Dawkins and Snyder (1972) supported this idea with its finding that junior high students of lower SES scored lower on each test of the Seashore Measures of Musical Talent than the national norms. Likewise, the research of McCarthy (1980) demonstrated that SES accounted for differences in 5th and 6th grade students on an audiovisual music reading test and a performance sight-reading test, with those of lower SES scoring lower. In the same way, Daniels (1986) found that high school choir students who represented a higher socioeconomic bracket scored better on a sight-reading test. This study found that information about the SES of the school and the students had more impact on the results of the test than information about the chorus curriculum. Taebel and Coker (1980) found SES to be correlated with music achievement scores. Their research indicated that low SES students learned at about the same rate as others, but they started much further back.

Finally, researchers have found that SES may significantly impact school music program retention (Albert, 2006a; Corenblum & Marshall, 1998; Klinedinst, 1991; McCarthy, 1980). In fact, SES may be the best indicator of student retention for beginning instrumental students, more so than measures of academic achievement or musical aptitude (Klinedinst, 1991). Renfro (2003) theorized that this pattern of students quitting might be due to the high teacher turnover rate in these poorer schools.

Several strategies have been recommended for music educators in low SES situations. Corenblum and Marshall (1998) and Fiese and DeCarbo (1995) suggested that these teachers need better training. For example, Corenblum and Marshall (1998) advised that teachers should be given accurate expectations about the level of support they may receive from the school and parents in these economically disadvantaged areas. In addition, according to the urban music educators surveyed by Fiese and DeCarbo (1995), teachers must be taught how to deal with "the complex emotions of students from differing social and economic backgrounds" (p. 28). Furthermore, these music teachers

indicated that teachers should be prepared for the varying family situations which they may encounter in these schools, including single parent homes, custody battles, teen pregnancy, and students kicked out of their houses (Fieses & DeCarbo, 1995).

A number of sources have also promoted the importance of making the musical ensemble experience relevant to the lives of lower SES students (Albert, 2006b; Corenblum & Marshall, 1998; Fiese & DeCarbo, 1995). Corenblum and Marshall (1998) suggested that teachers realize that other programs in the school other than music may have a higher priority, and traditional band programs may not meet the needs of the students in these schools. They advised teachers to consider adapting their programs to be more sensitive to the racial/ethnic diversity of the school (Corenblum & Marshall, 1998). Albert (2006b) recommended forming alternative, culturally relevant ensembles to encourage students' involvement in band through music that is familiar to them. The urban music teachers in Fiese and DeCarbo's study (1995) suggested "teachers must find a way to relate to the students initially and then adapt the curriculum with that in mind" (p. 28).

Other proposed strategies that may be successful in low SES situations include giving students more ownership in the ensemble processes (Albert, 2006b; Fiese & DeCarbo, 1995), providing school-owned instruments (Albert, 2006b), creating a safe family environment within the program (Albert, 2006; Buford, 2010; Fiese & DeCarbo, 1995), building positive relationships between the teacher and students (Albert, 2006; Buford, 2010), maintaining teacher stability (Buford, 2010; Fiese & DeCarbo, 1995), and establishing high standards and accountability for all students (Buford, 2010; Hinckley, 1995).

The link between SES and general education and certain aspects of music education has been well documented. However, little research has explored the relationship between SES and music ensemble achievement in competition. Therefore, the purpose of this study is to look at the relationship between SES and bands' UIL Concert and Sightreading Contest ratings.

Method

The 2011 UIL Region 18 Band Concert and Sightreading Contests were chosen for this study because the competing bands represented a wide range of SES. The concert and sight-reading ratings for all high school and middle school ensembles ($N = 173$) were obtained from Texas UILforms.com, a publicly available website. The two ratings for each band (one for concert, one for sight-reading) were then averaged to create one composite rating for each band.

The percentage of economically disadvantaged students from each represented school was obtained from the 2009-2010 AEIS reports on the Texas Education Agency website. This was the most recent year for which this data were available. Data were not available for two schools, Ann Richards High School and Cedar Creek High School, because these schools opened after 2009. Therefore, these schools were not used in this study. The East Side Memorial High School band actually consists of students from two different campuses: East Side Memorial Global Tech and East Side Memorial Green Tech. The percentages of economically disadvantaged students from each of the two schools were averaged together for use in this study.

Results

Raw data consisted of the UIL ratings for each band and the percentage of economically disadvantaged students from each school. For computational purposes, schools were organized into four groups according to SES, with Group 1 being the poorest group and Group 4 being the least poor. Group 1 ($n_1 = 27$) consisted of schools with more than 75% of their students classified as economically disadvantaged. Group 2 ($n_2 = 49$) consisted of schools with greater than 50% but less than or equal to 75% of their students classified as economically disadvantaged. Group 3 ($n_3 = 60$) consisted of schools with greater than 25% but less than or equal to 50% of their students classified as economically disadvantaged. Group 4 ($n_4 = 37$) consisted of schools with 25% or less of their students classified as economically disadvantaged.

Data were analyzed by means of the Kruskal-Wallis One-Way Analysis of Variance, comparing UIL ratings with SES. Results indicated that there was a statistically significant difference in the UIL ratings of schools of different SES. The Kruskal-Wallis test documented the following result: H = (3, $N = 173$) 44.53, $p < .0001$. Dunn's Multiple-Comparison procedure was then computed. Significant differences in UIL ratings were found between all groups except Groups 2 and 3 and Groups 3 and 4.

Figure 1 shows the average UIL scores for the four groups. Recall that UIL ratings range from 1 to 5, with 1 being the highest rating.
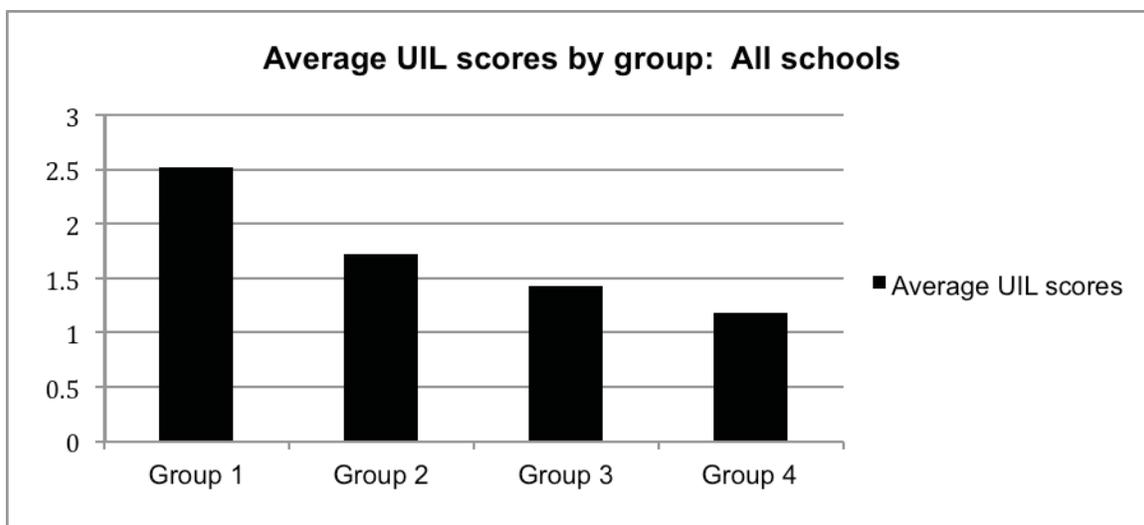

Figure 1. Average UIL scores for all schools by group. Group 1 is the poorest and Group 4 is the least poor.

A second Kruskal-Wallis test was computed for the middle school bands only. For this test, group sizes were: $n_1 = 20$, $n_2 = 29$, $n_3 = 30$, and $n_4 = 18$. Again, a statistically significant difference was found between the UIL ratings of schools of differing SES. The Kruskal-Wallis test documented the following result: H = (3, $N = 97$) 34.06, $p < .0001$. Dunn's Multiple Comparison once again demonstrated significant differences

between all groups except Groups 2 and 3 and Groups 3 and 4. Figure 2 shows the average UIL scores for the middle school bands.
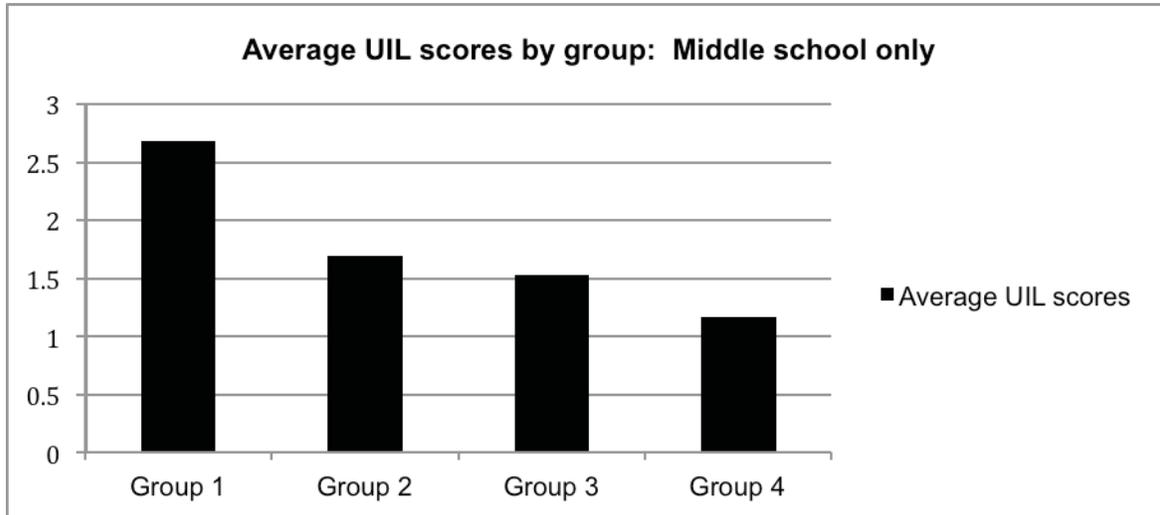

Figure 2. Average UIL scores for middle schools by group. Group 1 is the poorest and Group 4 is the least poor.

A Kruskal-Wallis test was then computed for the high school bands. For this test, group sizes were, $n_1 = 7$, $n_2 = 20$, $n_3 = 30$, and $n_4 = 19$. A statistically significant difference was found between the UIL ratings of schools of differing SES. The Kruskal-Wallis test documented the following result: H = (3, $N = 76$) 10.42, $p = .0153$. Using Dunn's Multiple-Comparison, the only significant difference was found between Group 1 and 4. Figure 3 indicates the average UIL scores for the high school bands.
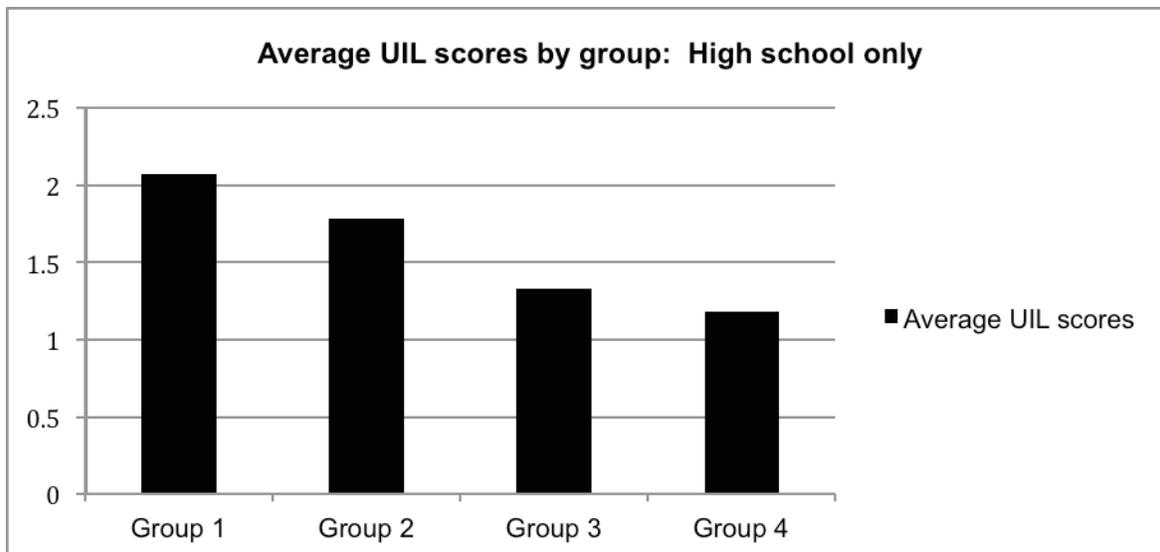

Figure 3. Average UIL scores for high schools by group. Group 1 is the poorest and Group 4 is the least poor.

Next, results for only the Varsity bands were analyzed. UIL has a procedure in place by which a band that is struggling can petition to compete at a lower level. For example, the top band from a particular school could petition to compete as a Non-varsity band rather than a Varsity band. According to the State Director of Music for UIL Richard Floyd (personal communication, January 17, 2012):

> Bands that have "fallen on hard times," [experienced] turn-over in teachers, [or faced] economic/social challenges that would have no hope of success at the varsity level have been allowed to enter as Non-varsity. This gives them the opportunity to participate and benefit from the Concert and Sight-reading at a realistic level where they might be able to have a better chance for success. They can stay at that level until they earn a Division I in Concert. At that point in time we assume that they are beginning to reestablish their program and they then go back to Varsity Competition.

For the purposes of this study, however, every top band was considered a Varsity band, every second band was considered a Non-varsity band, and so on.   For this test, group sizes were, $n_1 = 19$, $n_2 = 27$, $n_3 = 35$, and $n_4 = 15$.   As in the previous tests a statistically significant difference was found between the UIL ratings of schools of differing SES. The Kruskal-Wallis test documented the following result: H = (3, $N = 96$) 26.37, $p < .0001$. Dunn's Multiple Comparison showed significant differences between Group 1 and 2, Group 1 and 3, and Group 1 and 4. However, no other significant differences existed.   Figure 4 shows the average UIL scores for the Varsity bands.
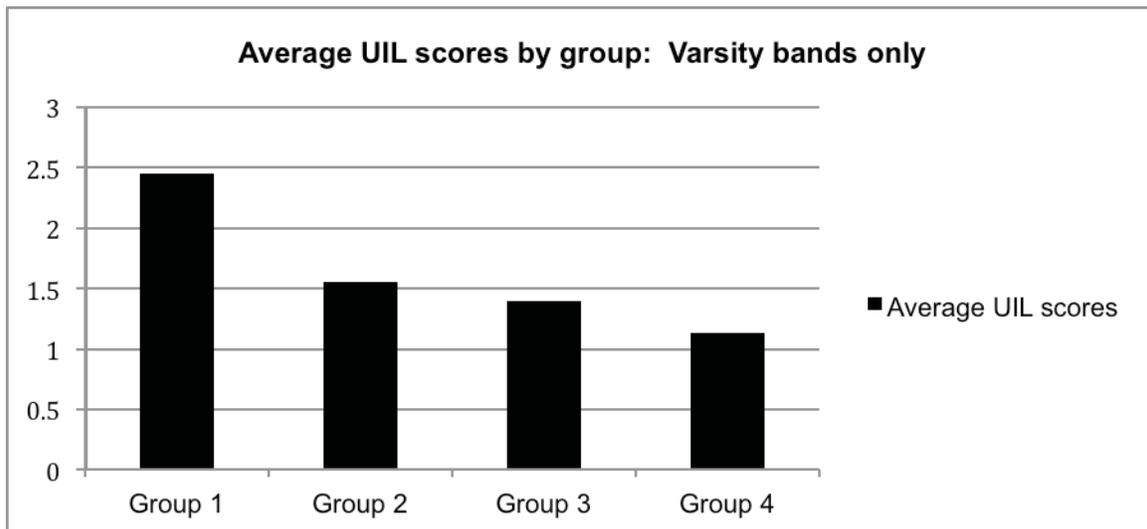

Figure 4. Average UIL scores for Varsity bands by group. Group 1 is the poorest and Group 4 is the least poor.

A final Kruskal-Wallis test was computed for all Non-varsity bands. For this test, group sizes were, $n_1 = 6$, $n_2 = 18$, $n_3 = 15$, and $n_4 = 11$. Again, a statistically significant difference was found between the UIL ratings of schools of differing SES. The Kruskal-Wallis test documented the following result: H = (3, N = 50) 19.59, p = .0002. This time Dunn's Multiple Comparison indicated significant differences between all groups except Group 1 and 2 and Group 3 and 4. Figure 5 indicates the average UIL scores for the Non-varsity bands.
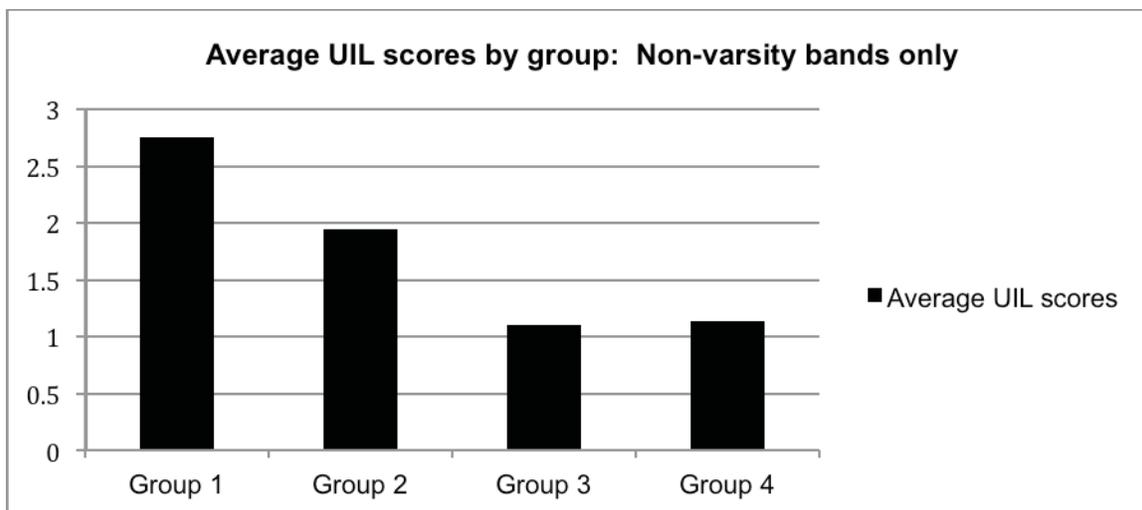
Average UIL scores by group: Non-varsity bands only

Figure 5. Average UIL scores for Non-varsity bands by group. Group 1 is the poorest and Group 4 is the least poor.

Although there were Sub Non-varsity bands, Sub Non-varsity B bands, and even one Sub Non-varsity C band that competed in the contests, these sample sizes were small. Consequently, additional Krukal-Wallis tests were not run for these bands.

Results may be summarized as follows: There was a statistically significant difference between the UIL ratings of schools of differing SES, with lower SES being associated with lower ratings. The difference was greater at the middle school level than the high school level, and it was greater for Varsity bands than for Non-varsity bands. The greatest differences occurred between the poorest schools (those with greater than 75% of their students classified as economically disadvantaged) and other schools.

Discussion

This study was designed to investigate whether school SES was related to bands' ratings at UIL. Results indicated that schools of lower SES received significantly lower ratings than those of higher SES.

When looking at all schools together, it can be seen that, although the ratings did gradually decline from the higher to poorer schools, these trends were not always statistically significant. This seems to suggest that extreme differences in SES relate to

UIL ratings, while smaller differences do not show a significant trend. It can also be seen that the largest drop-off in ratings occurs with Group 1, the poorest group.

The clearest relationships were found for middle school bands than for high schools bands. As discussed previously, research has shown SES to be a significant indicator of student retention in instrumental music programs (Albert, 2006a; Corenblum & Marshall, 1998; Klinedinst, 1991; McCarthy, 1980). It is possible that, as lower SES students choose not to continue with band at the high school level, the gap between band programs is closed to some extent. Additional research is needed to explore the differences between high school and middle school outcomes.

Analysis of the ratings of the Varsity bands only showed a large reduction in the ratings of the poorest schools. This trend was not seen in the analysis of the Non-varsity bands. This is most likely due to the fact that many of the very poorest schools, especially those with small or struggling band programs, do not have a Non-varsity band or do not have one that is viable to send to UIL Contest.

These results should be generalized with caution because these data were from one region in only one year. Further studies are necessary to see if these results can be applied to a broader population. Additional research into the link between SES and ensemble achievement in competition settings is warranted.

The findings of this study support the findings of previous research that low SES is often associated with low achievement (Daniels, 1986; Dawkins & Snyder, 1972; DeHaan & Havighurst, 1957; Nichols, 2003). It was not within the scope of this study to determine the causes of the differences in ratings for lower SES schools. It may be due to any of the factors discussed earlier which are associated with low SES, including lack of school and parent support, inadequate funding, low quality of teaching, lower teacher expectations, personal obstacles faced by the students, lower musical aptitude, and problems with retention. Furthermore, these low SES band programs may face limited access to private lessons, students frequently pulled out of rehearsals for academic remedial work, and large numbers of students academically ineligible to compete at UIL.

Further research is needed to isolate these variables to assess these differences in achievement. In addition, future research should look at very poor schools that experience consistent success at UIL. This would be useful in developing a model for a successful band program in a low SES situation.

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