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A COMPARISON OF THE RATINGS AND RELIABILITY ON TWO BAND/ORCHESTRA FESTIVAL ADJUDICATION FORMS

Phillip M. Hash

School bands and orchestras across the United States take part in adjudicated contests/festivals each year. Music education associations in all 50 states hold these events annually to provide third-party feedback in relation to concert and sometimes sight-reading performance (Paul, 2010). Many directors, students, and administrators value these experiences because they (a) provide a sense of achievement, (b) help maintain performance quality and high standards, (c) provide evaluation of the instrumental program, and (d) aid in identifying clear goals for instruction (Howard, 1994; LaRue, 1986; Stamer, 2004).

Teachers sometimes raise concerns about festivals including the pressure to succeed from peers, administrators, parents, and students (Collins, 2012). Music educators have also questioned the fairness of assigning ratings to individual ensemble performances considering the numerous musical and non-musical factors that can affect the outcome (Forbes, 1994). Variables such as judges' training (Winter, 1993) or desire to provide encouragement (Boeckman, 2002), ensemble size (e.g., King & Burnsed, 2009; Rickles, 2009), and the participation of exceptional learners (Cassidy & Sims, 1991) might cause adjudicators to determine final ratings based on wholistic and general impressions, and then mark individual captions (e.g., tone, rhythm) to fit accordingly (Garman, Boyle, & DeCarbo, 1991; Latimer, Bergee, & Cohen, 2010; Wesolowski, et al, 2018).

Several studies have examined the ratings of band and orchestra contests. Boeckman (2002) found that ratings in state band festivals sponsored by the Ohio Music Education Association increased 7.9% between 1951-2000 with the largest gains occurring during the 1970s and 80s. Furthermore, adjudicators gradually became more reluctant to award scores lower than a division II even though the system allowed for five possible ratings. Almost all bands earned a division I (45.8%) or II (49.0%) between 1971 and 2000. The author hypothesized that this phenomenon might have resulted from a shift towards self-esteem and relativity in student assessment during this period. However, it is unclear if higher ratings were the result of adjudicators' personal inclinations or encouragement from the Association to avoid the bottom of the scale.

Likewise, mean final ratings for high school bands ($N = 353$) in South Carolina averaged 1.73 ($SD = .70$) over a three-year period from 2008-2010. Most groups (86.7%) earned either a division I (40.8%) or II (45.9%). Only 13.3% earned a division III (12.7%) or IV (0.60%), and none earned a division V (Hash, 2012). A similar study among middle school and high school bands and orchestras in Virginia found that ensembles ($N = 985$) attained a mean rating of 1.58 ($SD = .66$) with most groups earning a division I (50.6%) or II (40.9%). Just 8.5% of ensembles received a division III (8.0%) or IV (0.5%), and no bands or orchestras earned a division V (Hash, 2013).

The type of form used by judges can also affect scores (Norris & Borst, 2007). Traditionally, large-group assessment has involved evaluation forms in which adjudicators assess *captions* or *categories* such as tone, intonation, balance, interpretation, rhythm, and stage presence using a grading system or a numerical scale. Final ratings are determined either through the preponderance of grades or the sum of individual category scores (e.g., National Music Adjudication Coalition, n.d.). Recently, some organizations have adopted rubric-based forms that include descriptors for levels of achievement in each caption. According to Wesolowski (2012), these instruments articulate expectations for performance, provide students and directors with clear feedback focused on improvement, and encourage consistent adjudication based on objective criteria rather than individual judgement.

In comparing traditional and rubric-based tools, Norris and Borst (2007) found that interrater reliability increased for both individual categories (e.g., tone, intonation, interpretation) and final ratings when judges assessed choirs using a rubric with detailed descriptors for each possible score (1-5) in all categories versus an evaluation form with no category descriptors. Furthermore, final ratings and scores for each caption except interpretation were significantly ($p < .05$ - $.001$) lower when adjudicators used the rubric versus the evaluation form. The authors asserted that the rubric-based instrument offered more guidance on how to score the various performance dimensions and recommended its use over traditional evaluation forms.

Latimir, Bergee, and Cohen (2010) examined the reliability and perceived pedagogical utility of a multidimensional weighted large-group performance rubric used by the Kansas State High School Activities Association (KSHSAA). Reliability coefficients were similar to other music performance assessments (Barnicle, 1993; Ciorba & Smith, 2009; Saunders & Holahan, 1997) and included moderately high internal consistency ($\alpha = .88$), moderately low to moderate dimension reliability ($W = .47$ - 77), moderately high total score reliability ($W = .80$), and moderate rating reliability ($W = .72$). Responses on a questionnaire suggested that both adjudicators and directors believed the rubric to be pedagogically more effective than the previously used forms because it provided better justification for ratings and more detail as to what constituted an acceptable performance.

The efficacy of more sophisticated music performance evaluation instruments has become an important line of research with increased attention on systematic and standardized assessment in education (Wesolowski, 2012) and the recent move towards rubric-based adjudication forms by organizations that sponsor contests (e.g., Latimer, Bergee, & Cohen, 2010; Norris & Borst, 2007). In 2016-17, the Michigan School Band and Orchestra Association (MSBOA) replaced their traditional large-group evaluation form with a rubric-based measurement tool for use during the concert portion of their band and orchestra festivals (MSBOA, 2017). Officials hoped that this instrument would define performance standards and provide a more valid justification for ratings.

The purpose of this study was to compare the ratings and interrater reliability of the

MSBOA traditional evaluation form with the rubric-based instrument recently adopted in its place. Research questions included the following:

- Is there a significant difference in the concert ratings awarded to bands and orchestras evaluated with the rubric-based versus the traditional adjudication form?
- Is there a significant difference in the distribution of concert ratings between the rubric and the traditional forms?
- How does the interrater reliability of the rubric-based instrument compare with that attained on the traditional form?

The scope of this study was limited to ratings from the concert portion of MSBOA band and orchestra festivals. I did not consider individual caption grades, sight reading scores, or overall final ratings. The adjudication form for sight reading remains unchanged from previous years (MSBOA, 2017). Findings will be of interest to music education associations and other organizations that sponsor contests/festivals, directors who enter these events, and all stakeholders in large-group assessment.

Method

MSBOA Large-Group Festivals

MSBOA band and orchestra festivals include a senior division for high school ensembles and a junior division for middle school/junior high groups. Districts that regularly combine all middle school and high school students into one ensemble may enter in a special junior/ senior category. Ensembles divide into classifications based on school size from largest (AA) to smallest (D). Schools entering multiple ability-based groups may enroll lower level ensembles below their designated class.

Each group performs three selections including one piece from a repertoire list assigned to their classification. String and full orchestras perform two additional compositions of their choosing while bands select a march and one other work. Full orchestras must perform one piece for strings only. All groups play their concert selections for three adjudicators and then proceed to a different room where they sight-read one composition based on their classification for another evaluator. Overall ratings are determined by aggregating the scores of the three concert adjudicators into a single rating, and then combining it with the sight-reading score as per a formula devised by the association (MSBOA, 2014, 2017). Ratings designations include Superior (division I), Excellent (division II), Good (division III), Fair (division IV) and Poor (division V) (MSBOA, 2014, 2017).

Sampling and Participants

MSBOA has divided the state into 16 districts where local governing bodies organize

festivals and other events for the membership. This study utilized purposive sampling to select six districts that represent the diversity of the association. I included all ensembles (2015: N = 527; 2018: N = 511) that performed for a rating at each festival site within the districts in 2015 (N = 28) and 2018 (N = 26), two years before and after the organization switched from the traditional adjudication form to the rubric-based instrument. The sample consisted of urban, near urban, suburban, and rural schools from across the state and at various socioeconomic levels. Classifications varied for both bands (2015: n = 446; 2018: n = 423) and orchestras (2015: n = 81; 2018: n = 88) at the junior (2015: n = 229; 2018: n = 220) and senior (2015: n = 292; 2018: n = 288) levels. A total of nine bands participated in the junior/senior class during the two years examined in this study and all but one group classified as AA were from the senior division. The number of ensembles in each succeeding classification increased (2015 & 2018: AA, n = 60; A, n = 130; B, n = 190; C, n = 261; D, n = 388) because they included bands and orchestras from smaller institutions as well as lower level groups from larger schools.

Adjudicators involved in this study included inservice and retired music educators from throughout the state. To become a judge for MSBOA festivals, candidates must (a) have at least five years of experience teaching instrumental music and (b) have demonstrate a high level of achievement in their program. Candidates complete an application, which must obtain approval by MSBOA officials in their home district and at the state level. Once approved, perspective evaluators complete a one-day workshop and become probationary adjudicators (MSBOA, 2018a).

Adjudicator workshops include training in festival rules, procedures, and scoring, as well as strategies for offering effective written and verbal feedback. At least half of the day involves practice adjudication with live middle and high school ensembles, followed by discussion. Candidates must successfully judge at least four festivals in two different MSBOA districts to become permanent adjudicators of the Association (MSBOA, 2012, 2018b).

Concert Performance Adjudication Instruments

Evaluation form.

MSBOA adjudicated the concert portion of large group festivals using a traditional evaluation form until 2016. Judges assigned a letter grade (i.e., A, B, C, D, E) to categories that included tone, intonation, rhythm, technique, and interpretation in addition to writing and/or recording comments and recommendations for improvement. Evaluators also provided marks for general spirit, music selection, and stage deportment, but did not include these in the final rating calculation. Each adjudicator was required to award a predominance of grades in the five categories, which determined a final rating. According to instructions for judges,

> The adjudicator is especially requested to be consistent between the marks of A, B, C, etc. . . . and in the final rating which is placed at the top of the sheet. A predominance of

> grades determines the rating. A first division (I) rating must have at least three (3) A's. A second division (II) rating must have at least three (3) B's[,] . . . etc. (MSBOA, 2014, p. 58).

To monitor consistency, adjudicators conferred to compare their individual grades after three organizations in a classification had performed. These conferences were built into the festival schedule and held before judges released scores to on-site officials (MSBOA, 2012). A final concert performance rating was determined by combining the ratings of the three-member panel (see Figure 1).

Figure 1

Chart for Determining Final Concert Rating (MSBOA, 2014, 2017)

Final Concert Rating	I	II	III	IV	V
Individual Judges' Ratings	1 1 1 1 1 2 1 1 3 1 1 4 1 1 5	1 2 2 1 2 3 1 2 4 1 2 5 2 2 2 2 2 3 2 2 4 2 2 5	1 3 3 1 3 4 1 3 5 2 3 3 2 3 4 2 3 5 3 3 3 3 3 4 3 3 5	1 4 4 1 4 5 2 4 4 2 4 5 3 4 4 3 4 5 4 4 4 4 4 5	1 5 5 2 5 5 3 5 5 4 5 5 5 5 5

Rubric-based form.

The rubric-based adjudication form (see Figure 2) evaluates the same dimensions as the traditional instrument (tone, intonation, rhythm, technique, and interpretation). Descriptors for each level of achievement (A, B, C, D, E) contain similar wording related to performance quality (e.g., refined, developed), consistency (e.g., sometimes, often, constant), and degree of errors (e.g., minor, noticeable, obvious). Judges assign letters to each category based on the descriptors, as well as provide written and/or recorded feedback. To deter evaluators from determining a final rating before assigning category grades (e.g., Wesolowski, et al, 2018), judges do not calculate their final ratings. Instead, the forms go directly to the on-site festival office where officials transpose each letter grade to a number (i.e., A = 4, B = 3, C = 2, D = 1, E = 0) and then average category scores to determine a rating based on a numerical scale (see Figure 3). The new system eliminated rules requiring judges to award a preponderance of caption grades and to confer periodically during the festival day. As with the traditional form, a combination of ratings from the concert adjudicators results in a final rating for that event (see Figure 1) (MSBOA, 2016, 2017).

Figure 2

MSBOA Band & Orchestra Festival Rubric (MSBOA, 2017)

	Superior **Letter Grade: A**	**Excellent** **Letter Grade: B**	**Good** **Letter Grade: C**	**Fair** **Letter Grade: D**	**Poor** **Letter Grade: E**
TONE **Characteristic** **Resonant** **Responsive** **Controlled** **Supported**	Students consistently perform with refined and developed sound quality, considering the classification, throughout the ensemble. A few minor isolated flaws might exist, but they do not detract from the performance.	Students often perform with refined and developed sound quality considering the classification, within the ensemble. Noticeable flaws sometimes detract from the performance.	Students perform with developing, but not yet refined sound quality, considering the classification, within the ensemble. Noticeable flaws often detract from the performance.	Students perform with sound quality that is not yet developing or refined, considering the classification, within the ensemble. Obvious flaws consistently detract from the performance.	Students perform with little understanding of sound quality within the ensemble. Constant flaws occur and detract from the performance.
INTONATION **Note Accuracy** **Pitch Matching** **Chord Tuning**	Students consistently perform with refined and developed intonation, considering the classification, throughout the ensemble. A few minor isolated flaws might exist, but they do not detract from the performance.	Students often perform with refined and developed intonation, considering the classification, within the ensemble. Noticeable flaws sometimes detract from the performance.	Students perform with developing, but not yet refined intonation, considering the classification, within the ensemble. Noticeable flaws often detract from the performance.	Students perform with intonation that is not yet developing or refined, considering the classification, within the ensemble. Obvious flaws consistently detract from the performance.	Students perform with little understanding of intonation within the ensemble. Constant flaws occur and detract from the performance.

RHYTHM **Durations** **Precision** **Steady** **Even** **Accuracy**	Students consistently perform with refined and developed rhythm throughout the ensemble. A few minor isolated flaws might exist, but they do not detract from the performance.	Students often perform with refined and developed rhythm within the ensemble. Noticeable flaws sometimes detract from the performance.	Students perform with developing, but not yet refined rhythm within the ensemble. Noticeable flaws often detract from the performance.	Students perform with rhythm that is not yet developing or refined within the ensemble. Obvious flaws consistently detract from the performance.	Students perform with little understanding of rhythm within the ensemble. Constant flaws occur and detract from the performance.
TECHNIQUE **Hand/Stick** **Bow Position** **Articulation** **Sticking/** **Bowing** **Clarity**	Students consistently perform with refined and developed technique throughout the ensemble. A few minor isolated flaws might exist, but they do not detract from the performance.	Students often perform with refined and developed technique within the ensemble. Noticeable flaws sometimes detract from the performance.	Students perform with developing, but not yet refined technique within the ensemble. Noticeable flaws often detract from the performance.	Students perform with technique that is not yet developing or refined within the ensemble. Obvious flaws consistently detract from the performance.	Students perform with little understanding of technique within the ensemble. Constant flaws occur and detract from the performance.
INTERPRETA-TION **Dymanics** **Phrasings** **Style** **Nuance** **Shape** **Direction** **Expression** **Tempo** **Performance** **Practice**	Students consistently perform with refined and developed interpretation throughout the ensemble. A few minor isolated flaws might exist, but they do not detract from the performance.	Students often perform with refined and developed interpretation within the ensemble. Noticeable flaws sometimes detract from the performance.	Students perform with developing, but not yet refined interpretation within the ensemble. Noticeable flaws often detract from the performance.	Students perform with interpretation that is not yet developing or refined within the ensemble. Obvious flaws consistently detract from the performance.	Students perform with little understanding of interpretation within the ensemble. Constant flaws occur and detract from the performance.

Figure 3

Scale for Calculating Concert Rating from Rubric-Based Form (MSBOA, 2017)

4.00 - 3.41 = First Division (I)	"Superior Rating"
3.40 - 2.41 = Second Division (II)	"Excellent Rating"
2.40 - 1.41 = Third Division (III)	"Good Rating"
1.40 - 0.41 = Fourth Division (IV)	"Fair Rating"
0.40 - 0.00 = Fifth Division (V)	"Poor Rating"

A committee of MSBOA officials developed the rubric-based adjudication form over a five-year period. They worked towards content validity by reviewing similar instruments from other organizations and soliciting feedback from the membership and outside experts, including the author of this study. The association piloted the instrument at three selected district festivals in 2013 and 2014. The pilot tests involved hiring special adjudication panels who tested the instrument in the field and gave feedback through an MSBOA official (Catherman, 2013-14). Bands performing at these sites received their actual festival scores from a separate judging panel using the traditional form and did not see results from the pilot tests (Catherman, 2012).

Except for the dimension of rhythm in 2014 ($p = .335$), data from both pilots indicated significantly lower category (2013: all $p < .001$; 2014: $p = .001$ - $.04$) and final (2013: $p = .000$; 2014: $p = .005$) ratings for the rubric versus the traditional form in the concert portion of the festivals. In addition, the rubric resulted in a wider distribution of individual judges' ratings, which was significant in 2013, $\chi 2 = 28.05$, $df = 3$, $p < .001$. Although reliabilities for categories and final ratings were generally lower on the rubric in both 2013 (traditional: $\alpha = .75$ - $.86$; rubric: $\alpha = .49$ - $.76$) and 2014 (traditional: $\alpha = .58$ - $.80$; rubric: $\alpha = 65$ - $.78$), coefficients the second year were closer to those attained on the traditional form (Catherman, 2013-14). MSBOA revised the instrument and the adjudication processes after each pilot, and then adopted the form for use at all district and state level band and orchestra festivals starting in 2017. They also required judges, including those with prior experience, to undergo training on the new instrument (Hilton, 2017).

Data Analysis

Data for each ensemble included three individual judges' ratings and an aggregate rating for the concert portion of the festival. Adjudicators' caption scores and comments were not available. With the permission of MSBOA, I downloaded ratings from spreadsheets posted on a restricted page of the organization's website. I then entered the data into a Microsoft Office 2016 Excel© database, transposed ratings from Roman to Arabic numerals, and transferred them to SPSS© 24.0 for statistical analysis. The MSBOA and the institutional review board at Illinois State University approved this study.

I examined ratings for each age group (junior, junior/senior, senior) and ensemble type (band, orchestra) on both adjudication forms (2015: traditional; 2018: rubric) using descriptive statistics. Chi-square tests for independence determined if there were significant differences in the distributions of the final concert ratings for the traditional versus the rubric-based form. Further analysis using a series of Mann-Whitney *U* tests explored mean differences in ratings between the two instruments for each age group and for all groups combined. These comparisons involved non-parametric statistics due to the ordinal nature of festival ratings, which represent no absolute value or distance between ranks (Phillips, 2008).

Interrater reliability for the three-member adjudication panels involved two statistical procedures. Cronbach's alpha (α) determined internal consistency by indicating the degree to which individual judges' ratings were related as a group (Trobia, 2008). However, alpha is not a measure of agreement. Therefore, I also calculated combined interrater agreement (IRA_{CO}), which determined the total percentage of duplicate ratings issued for each observation. This coefficient involves dividing the total number of agreements within each performance (0, 2, or 3) by the total number of ratings issued ($N_{ensembles}$ x 3). Unlike average pairwise interrater agreement (Fleiss, 1971), combined interrater agreement considers ratings within each performance without comparing specific judges' decisions. This procedure measures the reliability of adjudication panels as single units and accounts for the system of checks-and-balances created by utilizing three evaluators (Hash, 2012). Based on common practice within the field of social science (e.g., Carmines & Zeller, 1979), .80 served as the minimum for good reliability in this study.

Results

Ratings

Data indicated higher mean ratings for the rubric over the traditional form for junior (traditional: $M = 1.66$, $SD = .65$; rubric: $M = 1.53$, $SD = .64$) and senior (traditional: $M = 1.50$, $SD = .62$; rubric: $M = 1.43$, $SD = .69$) level ensembles. Bands in the junior/senior classification attained ratings on the rubric equal to those awarded with the traditional form (traditional: $M = 2.33$, $SD = .52$; rubric: $M = 2.33$, $SD = 1.15$). Mann-Whitney *U* tests revealed significantly higher mean ratings on the rubric for junior level groups ($p = .016$, $\eta^2 = .01$), bands ($p = .002$, $\eta^2 = .07$), orchestras ($p = .005$, $\eta^2 = .11$), and all ensembles combined ($p = .002$, $\eta^2 = .05$). Standard deviations indicated similar dispersions for both forms (see Table 1). Nonetheless, chi-square analysis revealed significantly different distributions ($p < .05$ or lower) between the two measurements on all but one comparison. The rubric resulted in more division I and fewer division II ratings for all groups and slightly more division IIIs for junior/senior and senior level ensembles (see Table 2).

Table 1

Final Concert Ratings Comparisons: Traditional (2015) & Rubric-Based (2018) Forms

Classification	Trad./2015 (*M*, *SD*)		*U*	*p*	η2
Junior[a]	1.66, .65	1.53, .64	22203.0	.016*	.01
Junior/Senior[b]	2.33, .52	2.33, 1.15	8.0	.780	.01
Senior[c]	1.50, .62	1.43, .69	38759.0	.057	.01
Bands[d]	1.60, .66	1.52, .69	65648.0	.002**	.07
Orchestras[e]	1.46, .55	1.27, .52	2190.0	.005**	.11
All Ratings Combined[f]	1.58, .64	1.48, .67	121366.0	.002***	.05

*p < .05, **p < .01, ***p < .001
[a](2015: *n* = 229; 2018: *n* = 220) [b](2015: *n* = 6; 2018: *n* = 3)
[c](2015: *n* = 292; 2018: *n* = 288) [d](2015: *n* = 446; 2018: *n* = 423)
[e](2015: *n* = 81; 2018: *n* = 88) [f](2015: *N* = 527; 2018: *N* = 511)

Table 2

Concert Ratings Distributions, Traditional (2015) & Rubric-Based (2018) Forms

Level	I (*N*, %)	II (*N*, %)	III (*N*, %)	IV (*N*, %)	V (*N*, %)	χ^2, *df*	*p*
Junior							
Trad./2015	99, 43.2	108, 47.2	22, 9.6	0, 0	0, 0	6.79, 2	.034*
Rubric/2018	122, 55.5	80, 36.4	18, 8.2	0, 0	0, 0		
Senior							
Trad./2015	167, 67.2	105, 36.0	20, 6.8	0, 0	0, 0	11.92, 3	.008**
Rubric/2018	192, 66.7	70, 24.3	23, 8.0	3, 1.0	0, 0		
Junior/Senior							
Trad./2015	0, 0	4, 66.7	2, 33.3	0, 0	0, 0	4.50, 2	.105
Rubric/2018	1, 33.3	0, 0	2, 66.7	0, 0	0, 0		
Bands							
Trad./2015	220, 49.3	184, 41.3	42, 9.4	0, 0	0, 0	12.68, 3	.005**
Rubric/2018	248, 58.6	132, 31.2	40, 9.5	3, 0.7	0, 0		
Orchestras							
Trad./2015	46, 56.8	33, 40.7	2, 2.5	0, 0	0, 0	8.24, 2	.016*
Rubric/2018	67, 76.1	18, 20.5	3, 3.4	0, 0	0, 0		
All							
2015	266, 50.5	217, 41.2	44, 8.3	0, 0	0, 0	19.13, 3	.000***
2018	315, 61.6	150, 29.4	43, 8.4	3, 0.6	0, 0		

*$p < .05$, ** $p < .01$, ***$p < .001$

Reliability

Overall interrater reliability was similar for both the traditional and rubric-based instruments. Cronbach's alpha on the traditional form ranged from .54 - .96 for each festival site ($N = 28$) for an average of $\alpha = .88$ ($SD = .08$) for all sites combined. Two judging panels using the traditional tool fell below the .80 benchmark on Cronbach's alpha at .72 and .54 respectively. IRA_{CO} ranged by site from .72 - .97 and averaged .88 ($SD = .05$) overall. Thus, 88% of all concert ratings issued by individual judges ($N = 1{,}581$) agreed within the three-member panels. Only one panel failed to reach the .80 benchmark at $IRA_{CO} = .72$.

Internal consistency on the rubric-based instrument ranged from $\alpha = .52$ - .94 for each site ($N = 26$) and averaged $\alpha = .83$ ($SD = .11$) overall. A one-way ANOVA indicated no significant difference in alpha between adjudication panels using the traditional ($N = 28$) versus rubric-based ($N = 26$) form, $F(1, 52) = 2.99$, $p = .090$. Nonetheless, 7 out of 26 sites failed to achieve $\alpha = .80$. Alpha among these panels ranged from .52 - .76 for a mean of $\alpha = .68$.

IRA_{CO} on the rubric ranged from .73 - .93 by site and averaged .86 ($SD = .05$). Further analysis indicated no significant difference in IRA_{CO} between the two adjudication forms, $F(1, 52) = 1.79$, $p = .187$. Three panels ($IRA_{CO} = .73$ - .79) did not reach the .80 benchmark for this measure.

Neither of the reliability statistics considered magnitude of the differences in ratings. Only one ensemble earned three different ratings (I, II, and III) from judges using the traditional form, and none received a rating from an individual judge that was non-adjacent from the other two (e.g., II, II, IV). However, six ensembles evaluated with the rubric received three different concert ratings (I, II, III) from judges within the same panel, and four earned a concert rating from one judge non-adjacent to those awarded by the other evaluators (I, I, III).

Discussion

This study compared the ratings and interrater reliability of a traditional evaluation form and a rubric-based assessment tool used for the concert portion of band and orchestra festivals held in six districts of MSBOA in 2015 and 2018. Data indicated significantly higher ratings on the rubric versus the traditional form for bands, orchestras, junior division ensembles, and all groups combined. Average reliabilities as expressed by Cronbach's alpha and IRA_{CO} were acceptable and statistically equal for both measures. However, additional analysis revealed that the traditional evaluation form achieved the minimum threshold for reliability (.80) more frequently and produced fewer anomalies related to magnitude of the difference between individual judges' ratings compared to the rubric.

Findings for this study contradicted those of Norris and Borst (2007), who found that

rubric-based adjudication forms resulted in lower ratings and increased reliability compared to a traditional evaluation instrument. The pilots for the present study (Catherman, 2013-14) also resulted in lower ratings from adjudicators using the rubric compared to their colleagues administering the traditional form. The reason for these differences is likely because the study by Norris and Borst and the pilot studies for this research occurred in laboratory settings in which judges' final scores were not reported to directors and did not affect actual festival ratings. As a result, participants might have evaluated ensembles with more attention to the rubric descriptors rather than marking categories to result in a predetermined final rating (e.g., Wesolowski, 2018), provide encouragement (e.g., Boeckman, 2002), or account for known extra-musical factors (e.g., Cassidy & Sims, 1991). In Norris and Borst,

> . . . [participants] shared the perception that their ratings would have been inflated (better) in a live festival situation in which directors would be able to review the judging forms. The candor of the subjects, coupled with the typical distribution of ratings at choral festivals, implies that festival scores often do not reflect the descriptors assigned to the actual ratings. (p. 248)

Adjudicators in the pilots for the present study made similar statements, saying that they were more stringent and honest knowing that teachers and students would not see their scores (Catherman, 2013-14). These findings suggest that performance assessment instruments might not function as expected in the field. Following pilot studies, researchers should test new evaluation tools under the actual conditions for which they were designed to account for adjudicator bias that might not exist otherwise.

Higher ratings on the rubric versus the traditional form in this study might also be due to the effectiveness of the new assessment. Perhaps bands and orchestras participating in MSBOA large-group festivals improved because of the rubric-based instrument implemented the year prior. Regardless, low to medium effect sizes suggest that the number of ensembles in the sample could have contributed to significant differences in ratings between the two forms.

The distribution of ratings was similar to other studies (e.g., Hash, 2012, 2013) and indicated that fewer than 10% of ensembles earned less than a division II, regardless of the adjudication form. This finding suggests that adjudicators might be reluctant to award the lowest ratings (e.g., Boeckman, 2002) despite instructions to "assign a letter grade that best describes the ensemble's overall performance based on the descriptors for each domain" (MSBOA, 2017, p. 62). It is also possible that directors who believed their groups were unable to earn a division I or II chose not to enter the festivals to avoid the negative effects of low ratings on student moral and public perception of the program (Collins, 2012). MSBOA might consider encouraging these teachers to enter under the "comments only" classification, in which judges provide feedback without assigning scores (MSBOA, 2014, 2017). Of course, these ratings might be correct, regardless of skewed distributions. Determining their accuracy in relation to performance quality is impossible without analyzing recordings.

Several factors may have reduced reliability within the panels that did not attain .80 on the rubric. Rater error might have resulted from judges applying the descriptors inconsistently. Some adjudicators could have attempted to match descriptors with the performance while others consciously or unconsciously inflated scores to avoid giving evaluations they perceived as too stringent for the group (e.g., Boeckman, 2002). One site that included mostly bands and orchestras from underserved urban schools, for example, attained reliabilities below the .80 threshold in both 2015 ($\alpha = .54$) and 2018 ($\alpha = .70$). These findings suggest that adjudicators did not agree on performance standards at these events.

Judges might also not agree on the definitions of some words and phrases used in the rubrics (Wesolowski, et al, 2018). For example, the descriptor for tone at the superior level reads, "Students consistently perform with refined and developed sound quality, considering the classification, throughout the ensemble. A few minor isolated flaws might exist, but they do not detract from the performance" (MSBOA, 2017, p. 67). Terms and phrases such as "consistently," "refined and developed," "considering the classification," and "minor," are all subjective and opened to interpretation.

Other factors that might have led to lower reliabilities for the rubric among some panels included eliminating the practice of adjudicators conferring to compare ratings (MSBOA, 2016) and the requirement that judges' ratings depended on a predominance of caption grades (MSBOA, 2017). Although both procedures could have contributed to greater consistency on the traditional form, reliability likely resulted in part from the adjudication system rather than a common understanding of performance standards. Several participants in the pilot studies stated that they felt more freedom to award accurate ratings when they no longer had to give the majority of captions the same grade (Catherman, 2013-14). However, this change in procedure as well as calculating judges' ratings on a point system might have led to more variability.

MSBOA should continue to work towards consistency among adjudicators using the rubric-based form to provide reliable evaluations for all bands and orchestras throughout the state. Preparation for judges should include content that would help establish common definitions for terminology used on the rubric and performance standards for ensemble classifications. Ongoing training during judges' meetings held at the start of each festival and periodic review sessions, either live or through online modules, may help maintain adjudicator calibration from one year to the next. (A recent vote by MSBOA membership to reinstate judges' conferences beginning in 2019 [MSBOA, 2018c] might additionally influence the consistency of final scores.) The Association could also use feedback from judges and directors to help clarify language and improve usability of subsequent revisions as well as apply the statistical methods from this study to continue monitoring reliability.

This study compared the ratings and reliability attained on a traditional evaluation form and a rubric-based instrument using data collected under actual large-group festival

conditions. Future research should continue to examine the effect of various evaluation forms on adjudication (e.g., Latimer, Bergee, & Cohen, 2010) and include both category scores and final ratings in the analysis. This work should include the examination of data from both pilot studies and real-world settings. Qualitative research involving adjudicator interviews and analyses of written and verbal feedback to ensembles (e.g., Ellis, 2007) might provide further insight to how the adjudication process operates in actual performance situations.

Educational reform and a move towards greater accountability have created the need for new assessment strategies that demonstrate both validity and reliability (Wesolowski, 2012). Ongoing research will play an important role in this process by developing large-group and other music performance evaluations that enhance student learning. These efforts will be most effective when researchers, organizations that sponsor adjudicated events, and P-12 educators work together to design the best assessment tools possible.

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AN INVESTIGATION INTO HOW CONTEST OUTCOMES AFFECT STUDENT ATTITUDES TOWARD COMPETITIVE MARCHING BAND

Justin Antos

Participation in competitive music festivals and other adjudicated performances has steadily increased since the American contest movement of the 1920s. Today, very few competitive experiences occur as frequently and with as much fervor and publicity as marching band contests. Over the past several decades, competitive marching band has been both harshly scrutinized and adamantly defended for its educational and artistic merit. However, its existence remains a substantial portion of most high school band programs.

Currently, competitive marching band directors have yet to reach a consensus regarding the amount of emphasis that should be placed on participation in marching band contests. Collins (2012) discovered that some competitive marching bands attend as few as one contest per year while some participate in as many as 10. This discord could be attributed to conflicting perceptions of how competition affects students' musical experiences.

While the present study focused explicitly on marching band competition, much of the literature spanning the past several decades overwhelmingly explored music competition in general. Proponents of music competition have repeatedly expressed that the threat of meticulous adjudication found within the contest format helps students perform at a higher caliber (Dykema & Cundiff, 1939; Gomes, 1983; Romano, 1995; Swor, 1972; Walker, 1989). Prevalently cited benefits of music competition have also included its ability to (a) motivate students to succeed (Berman, 2015; DeuPree, 1968; Gouzouasis & Henderson, 2012; Hanshumaker, 1956; Prescott & Chidester, 1938; Romano, 1995; Schoene, Adam, & Richmond, 1995; Stamer, 2004; 2006; Swor, 1972), (b) provide students with meaningful feedback on their performances (Bauer, 1983; Prescott & Chidester, 1938; Schoene et al., 1995; Stamer, 2004; Walker, 1989; Whitney, 1966), and (c) enable students to observe high quality performances by their peers (Bauer, 1983; Dykema & Cundiff, 1939; Hutchinson, 1983; Prescott & Chidester, 1938; Schoene et al., 1995; Stamer, 2004; Walker, 1989; Warrick, 1988; Weerts, 1976).

Nonetheless, critics of music competition have often cited that using competition to teach students an art form inadvertently emphasizes winning a trophy over learning a craft (Austin, 1990; Battisti, 1989; Caldwell, 1983; Gifford, 1983; Goheen, 1983; Howard, 1995; Jolly, 2008; Schoene et al., 1995; Spradling, 1990; Walker, 1989; Warrick, 1988). Moreover, previous studies have stated that competition (a) encourages directors to spend more class time teaching fewer pieces (Groulx, 2010; Hanshumaker, 1956; Hash, 2016; Howard, 1995; Jolly, 2008; Prescott & Chidester, 1938; Schoene et al., 1995; Spradling, 1990; Stamer, 2004; Swanwick, 1999; Swor,

1972; Walker, 1989), (b) fails to recognize longitudinal improvement (Miller, 1994; Stamer, 2004), (c) places too much emphasis on a single performance (Fennell, 1954; Goheen, 1983; Schoene et al., 1995), and (d) can be psychologically damaging for students (Hebert, 2005; Howard, 1994; 1995; Shindler, 2009) and teachers alike (Bauer, 1983; Goolsby, 1983; Hunt, 1973; Kirchhoff, 1988; Yahl, 2009).

Critics have also questioned the reliability and validity of the evaluation process. Prior literature has suggested that variables such as (a) school funding (Bergee, 2006), (b) performance time (Austin, 1989; Bergee & McWhirter, 2005; Jipson, 1972; Miller, 1994; Wiggins, 1995), and (c) the number of judges on a panel (Bergee, 2007; Chaney, 1983) may affect contest outcomes. Previous research has also revealed that judging panels tend to achieve lower reliability when adjudicating poor performances as compared to more successful performances (Brakel, 2006; Hash, 2012; 2013). Furthermore, several studies have highlighted grade inflation as being one of the major threats to the validity of musical adjudication. Research by Boeckman (2002) and Hash (2012; 2013) confirmed that an overwhelming number of festival participants tend to receive either Division I (i.e., Superior) or Division II (i.e., Excellent) ratings for their performances.

Despite the growing concern regarding competition's integrity, reliability, and validity, student perspectives toward music competition have generally been favorable (Austin, 1988; Battersby, 1994; Howard, 1995; Stamer, 2004; 2006; Takekawa, 2011; Yahl, 2009). In one of the most comprehensive studies on student perspectives of the festival experience, Gouzouasis and Henderson (2012) surveyed 526 high school band students at a prominent high school band festival in Surrey, British Columbia. Results from their study revealed that 69.0% of participants believed that band festival participation was an important aspect of their music education. Yet, perhaps no study in the literature points to students' preference for music competition than Rogers's (1984) landmark study on student attitudes toward competitive marching band. After surveying 971 band students from 12 contest-active bands in Ohio, Indiana, Illinois, and Kentucky, Rogers (1984) revealed that 80.0% of participants indicated that they would rather perform solely in competitive marching band than non-competitive concert band if they had to choose. Rogers' (1984) results should be viewed in a historical context however, since they are reflective of how external influences shaped student attitudes from more than 30 years ago.

Prior research on music competition has been plentiful, and studies focusing on competitive marching band are becoming more popular. However, no known previous studies thus far have examined student attitudes toward competitive marching band as meticulously as Gouzouasis and Henderson (2012) had analyzed student attitudes toward noncompetitive concert band festivals. Additionally, I felt it was imperative to conduct a more inclusive measurement of the extent to which high school students find educational and musical value in competitive marching band given how drastically different the marching band medium has become and has been emphasized in high schools since Rogers's (1984) study. Interestingly, no prior studies on music competition were found that accounted for the variable of competitive success when investigating how favorably students respond to competition. Are we to assume that students

would respond positively to music competition – in this case, competitive marching band – even if they never experience victory? In an attempt to fill this gap in the literature, the purpose of this quantitative study was twofold: (1) to determine the extent to which secondary school students find educational and musical value in competitive marching band programs, and (2) to discover how contest rankings influence how students perceive these values.

Method

Participants. A total of 439 high school band students from 11 different competitive marching bands from Cook and Will counties in Illinois participated in this study. All participants competed in at least one marching band competition in the state of Illinois between September and October of 2015. I sought to garner participation from marching band students who not only competed with varying amounts of frequency, but who also experienced differing levels of competitive success. This was done in an attempt to gain a characteristic sample of the general population of high school competitive marching band members.

Because no previous studies were found that analyzed how students perceive competitive musical activities based on how well they fare in competition, I utilized a process to determine each marching band's win percentage. This statistic was used to group participants into appropriate categories based on their ensemble's success rate at contests. I calculated each marching band's win percentage by dividing the total number of bands an ensemble defeated throughout the entire Fall 2015 competitive season by the total number of bands they competed against during the same season. An example of a win percentage breakdown can be seen in Table 1.

Table 1
Win Percentage Breakdown: Pilot Study Group #1

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	3 of 5	2	4
Contest #2	4 of 8	4	7
Contest #3	2 of 3	1	2
Contest #4	4 of 7	3	6
Contest #5	4 of 7	3	6
	Total:	**13**	**25**

OVERALL WIN PERCENTAGE: .520 (13/25)

The 11 participating ensembles' mean win percentage was .440, and ranged from .000 to .800. Three logical clusters emerged when I compared all 11 win percentages, so I stratified participants into one of three tiers based on those data: (a) minimal success, groups with win percentages between .000 and .250 (n = 146, 33.3%;); (b) moderate success, groups with win percentages between .251 and .599 (n = 169, 38.5%); and (c) high success, groups with win percentages of .600 and higher (n = 124, 28.2%). Win percentage breakdowns for each participating ensemble can be seen in Appendix A.

The aforementioned data were obtained from a total of 45 competitive performances from 26 different marching band contests that occurred during this study's timeframe. The caliber of marching band competition examined in this study included local high school- and university-sponsored contests, as well as nationally-sanctioned competitions. Moreover, each contest site assigned ordinal rankings to its participating marching bands at the conclusion of the performance. If a particular contest employed a *prelims-finals* format, only the preliminary scores were analyzed and factored into each group's win percentage.

I decided to use a win percentage to measure competitive success for several reasons:

1. A trophy is not an accurate representation of competitive success. If a band is one of only two groups in a particular class and places last, this ensemble would still win a trophy for Second Place. Utilizing a win percentage avoids this scenario and categorizes this band as "losing to one group" rather than "winning Second Place."
2. Contest sites, as the ones explored in this study, inherently differ from one another because of several variables, which include, but are not limited to: the (a) number of judges, (b) captions being adjudicated, (c) rubrics being utilized, and (d) classification criteria for each band. Employing a win percentage disregards these disparities because it solely focuses on each group's final ordinal ranking.
3. Because criteria such as effort or self-esteem are measured more intrinsically and are not reflected in the outcome of a competitive musical event, it neither seemed beneficial nor conducive to this study to include these factors as a measure of competitive success.
4. Because marching contest rankings are made public at an on-field awards ceremony following each competition, the pride of winning and the devastation of losing are arguably the two most influential variables that could substantially impact a student's attitude toward competitive marching band.

Instrumentation. I developed a 50-question Likert-type survey that included statements adapted from Gouzouasis and Henderson's (2012) questionnaire. Each of the 50 survey statements was categorized into one of eight groupings named after themes found in previous literature pertaining to music competition. For the purpose of this study, I chose to define educational and musical value the same way Gouzouasis and Henderson (2012) had in their

work. Educational value was defined as the social, psychological, or otherwise nonmusical effects of band festival participation (e.g., students building friendships), whereas musical value was defined as the musical benefits or detriments that evolve from participation in a band festival or the events leading up to a festival (e.g., students changing practice habits, students learning about music theory and history). Using this framework, my survey sought to support the following constructs:

- Educational Environment (Hamann, Mills, Bell, Daugherty, & Koozer, 1990)
- Motivation (Austin, 1988; Gouzouasis & Henderson, 2012; Maehr, Pintrich, & Linnenbrink, 2002; Stamer, 2004; 2006)
- Musicianship (Austin, 1988)
- Adjudication and Festival Format (Bergee, 2006; 2007; Bergee & McWhirter, 2005; Gouzouasis & Henderson, 2012)
- Competition (Gouzouasis & Henderson, 2012; Kohn, 1986)
- Performance Anxiety and Stress (Green & Gallwey, 1987)
- Self-Esteem (Gouzouasis & Henderson, 2012; Hebert, 2005)
- Social Experience (Adderley, Kennedy, & Berz, 2003; Gouzouasis & Henderson, 2012; Stamer, 2004; 2006)

To establish content validity, my questionnaire was examined by three music education professors, two experienced competitive marching band directors, and three competitive marching band staff members. Upon making additional edits to the survey based on these educators' recommendations, I pilot-tested the questionnaire in February of 2016 at two parochial high schools located in the south and west suburbs of Chicago. The participating students (N = 88) almost exactly matched the targeted sample population for the actual study. From the pilot study results, I reworded a total of 40 survey statements for clarity, expanded the demographic questions to accommodate a larger number of responses, and developed a consistent procedure for test administration. Survey statements can be referenced in Appendices B and C.

After I received all necessary permissions to conduct this survey from school administration, band directors, parents, and students, I personally administered the questionnaire to participants during their regularly scheduled band class. I engaged each class, thanked them for their willingness to participate in the research project, distributed the survey, and read a script outlining the study. The survey administration took approximately 15 minutes to complete at each site. After students finished the survey, I collected all of the questionnaires, thanked each participant and band director once again, and left the school building.

Because students had concluded their competitive marching band season approximately six to seven months prior to completing my survey, any particular emotions associated with their most recent experiences in competitive marching band had likely diminished. However, using time as a buffer between participants' most recent competitive marching band experience and the time they completed the survey may have actually produced more holistic perspectives of

competitive marching band that were not influenced by a single season's accolades.

Data Analysis. Survey data were coded and analyzed using SPSS v.22 and Microsoft Excel 2011. Descriptive analyses of each survey statement provided frequencies and percentages that determined the extent to which high school students found educational and musical value in competitive marching band programs. Survey items and responses were then analyzed using a chi-square test of independence to investigate the relationship between marching band students' level of competitive success (i.e., minimally successful, moderately successful, highly successful) and their attitudes toward competitive marching band. To evaluate the constructs used to categorize statements on the survey, I ran a principal component factor analysis using varimax rotation. To test the reliability of the survey instrument, I conducted a test-retest reliability measure using Pearson correlations and an internal consistency measure using Cronbach's alpha coefficients on each survey scale.

Results

Factor analysis. I hypothesized that the 50 survey items would cluster into eight logical constructs based on the questionnaire's assigned categories. However, results from this analysis identified a 14-factor solution that produced eigenvalues greater than 1, which accounted for 62.7% of the total variance. In this analysis, each factor was defined by the number of survey items that correlated highly on one factor at levels either above .5 or below -.5. Of the 14 factors, factor 1 accounted for 20.1% of the variance in the factor solution, factor 2 accounted for 6.8%, factor 3 accounted for 5.3%, and factors 4 through 14 individually accounted for less than 4.0% of the total variance in the factor solution. These findings seemed to indicate that music competition in a marching band setting is a construct best examined on a macroscopic level than one that groups items into multiple categories.

Cronbach's alpha. Cronbach's alpha results produced a wide range of alpha coefficients found within each of the following eight subscales: educational environment ($n = 8$; $\alpha = .695$), motivation ($n = 6$; $\alpha = .589$), musicianship ($n = 7$; $\alpha = .827$), adjudication and the festival format ($n = 6$; $\alpha = .125$), competition ($n = 5$; $\alpha = .817$), performance anxiety and stress ($n = 7$; $\alpha = .530$), self-esteem ($n = 8$; $\alpha = .343$), and social experience ($n = 3$; $\alpha = .852$). Even when survey statements were removed from subscales with low alpha coefficients (e.g., adjudication and the festival format), very little improvement was made. However, when all 50 survey statements were analyzed together, the resulting Cronbach's alpha was .856. Based on these results, it is fair to determine that the present survey did not capture distinct reliable constructs from each subgroup. While statements from the questionnaire appeared to contribute to the overarching construct of music competition at a high degree of consistency, the sheer number of survey items included in the reliability analysis could be partially responsible for the high alpha coefficient.

Pearson correlation. Seven days after completing the questionnaire, I once again administered the same survey to a random subsample of participants during their regularly scheduled band class ($n = 29$; 6.6%). A total of 39 participants were randomly assigned to a

subgroup during the first administration of the survey where each individual was given a unique character to mark at the top of their survey. After one week, participants were invited to retake the survey under the condition that they could recall their unique character. Of the 39 randomly assigned subgroup members, 29 participants were able to recall their character. I conducted a bivariate correlation on each survey question to compare participant responses from the first administration of the questionnaire to the second. Correlation values from each survey statement ranged from -.009 (i.e., question 39) to .843 (i.e., questions 23 and 25). The mean correlation value for the survey instrument based on the test-retest reliability measure was $r = .87$.

Key Findings

Descriptive analyses of survey results indicated that participants, irrespective of their competitive success rate as measured by win percentage, generally perceived competitive marching band as being both educationally and musically valuable. This finding corroborated prior literature (Austin, 1990; Battersby, 1994; Berman, 2015; Hanshumaker, 1956; Hines, 1995; Howard, 1995; Hunt, 1973; LaRue, 1986) and is illustrated in Appendix B. Specifically, more than half of all participants responded favorably (i.e., selecting *Agree* or *Strongly Agree*) to survey items from the educational environment, motivation, and musicianship categories. This finding indicates that regardless of win percentage, students believe that competitive marching band:

- Enhances the learning process (61.1%)
- Keeps band students on task in rehearsal (61.2%)
- Helps students concentrate more in class (51.5%)
- Generates excitement about attending class (63.1%)
- Makes sense of adjudicator commentary (92.0%)
- Enables students to improve by watching other bands perform (73.2%)
- Helps students become respectful audience members (79.5%)
- Motivates students to practice (76.8%)
- Teaches students a variety of musical styles (78.9%)
- Instructs students to perform with greater technique (77.2%)
- Develops students' musicality (84.5%)
- Enables students to become better performers in other ensembles (76.5%)

These attitudes are also corroborated in prior literature (Austin, 1988; Battersby, 1994; Bauer, 1983; Bendell, 1983; Buyer, 2005; Frederickson, 1995; Garrison, 1986; Gouzouasis & Henderson, 2012; Hamann et al. 1990; Hebert, 2005; Hickman, 2015; Howard, 1995; LaRue, 1986; Pennington, 1982; Schoene et al., 1995; Shellahamer, Swearingen, & Woods, 1986; Stetar, 2015; Warrick, 1988; West, 1985; Whitney, 1966; Wickes, 1978; Yahl, 2009).

The present study also confirmed previous research findings pertaining to adjudication and the festival format. Regardless of win percentage, more than half of respondents revealed

that they (a) prefer that marching bands compete for rankings over divisional ratings (56.5%), (b) take adjudicator commentary seriously (72.6%), and (c) enjoy watching other school marching bands perform in competition (88.2%) (Battersby, 1994; Gouzouasis & Henderson, 2012; Hines, 1995; Whitney, 1966; Yahl, 2009). Additionally, over half of all student responses supported previous studies that suggest (a) competitive marching band is important to music education (76.8%), (b) competitive performances are preferred over non-competitive events (63.6%), (c) competition brings out the best in music students (65.6%), (d) strong performances are highly regarded even if they do not produce any awards for the band (85.2%), and (e) students are proud of how they behave at competitions (84.8%) (Austin, 1988; Gouzouasis & Henderson, 2012; Hosler, 2002; Jolly, 2008; LaRue, 1986; Yahl, 2009).

Finally, most respondents indicated that they believe participating in a competitive marching band provides a unique and positive social experience. Participants, notwithstanding their competitive success rates as measured by win percentage, revealed that competitive marching band (a) contributes to a music program's social experience (91.1%), (b) gives students the opportunity to bond with other band members (92.5%), and (c) helps create a sense of family (87.4%). These findings are confirmed in previous studies (Adderley et al., 2003; Bauer, 1983; Gouzouasis & Henderson, 2012; LaRue, 1986; Mercer, 1990; Pennington, 1982; Prescott & Chidester, 1938; Rockefeller, 1982; Yahl, 2009).

How success levels influence the perceptions of competitive marching band. Of the 50 survey items, 35 produced statistically significant ($p \leq .05$) chi-square values. This phenomenon indicates that students perceive the educational and musical values of competitive marching band differently depending on their win percentage. Students from bands with higher win percentages typically viewed the competitive music experience more favorably than those from ensembles with lower success rates.

Participants from highly successful marching bands (i.e., marching bands with win percentages .600 and greater) expressed the following attitudes more prevalently than any other group:

- The learning process is enhanced when a teacher stresses competition in the classroom, χ^2 (8, N = 437) = 28.009, $p < .001$
- Students stay on task in band class the most during the marching band season, χ^2 (8, N = 436) = 32.058, $p < .001$
- Students learn what or what not to do by watching marching bands from other schools compete, χ^2 (8, N = 438) = 28.670, $p < .001$
- Students learn by watching and listening to students from other competitive marching bands who play the same instrument, χ^2 (8, N = 437) = 20.200, $p = .010$
- Marching band competitions are good places to learn how to be a respectful audience member, χ^2 (8, N = 436) = 28.490, $p < .001$
- Music competition motivates students to practice, χ^2 (8, N = 438) = 31.847, $p < .001$

- Students practice the most during the marching band season, χ^2 (8, N = 436) = 27.872, $p < .001$
- Competitive marching band enables students to perform with greater technique, χ^2 (8, N = 437) = 33.263, $p < .001$
- Competitive marching band enables students to develop their musicality, χ^2 (8, N = 439) = 40.058, $p < .001$
- Competitive marching band leads to students becoming better performers in other ensembles, χ^2 (8, N = 438) = 31.559, $p < .001$
- Students become better musicians by learning how to march, χ^2 (8, N = 434) = 23.176, $p = .003$
- Marching bands should be ranked in order (i.e., 1st, 2nd, 3rd…) and the rankings should be published for all to see, χ^2 (8, N = 439) = 30.488, $p < .001$
- The judges at marching band competitions play favorites (e.g., score other bands higher than others for reasons unrelated to performance), ^{2} (8, N = 437) = 35.288, $p < .001$
- Competitive marching band is an important part of music education, χ^2 (8, N = 438) = 47.057, $p < .001$
- Competitive marching band performances are more enjoyable than non-competitive events (e.g., community parades, halftime shows), χ^2 (8, N = 438) = 76.038, $p < .001$
- Music competition brings out the best in students, χ^2 (8, N = 438) = 46.848, $p < .001$
- Marching band would not be as much fun if students did not compete, χ^2 (8, N = 437) = 63.134, $p < .001$
- Competitive marching band causes unnecessary drama between band members, χ^2 (8, N = 438) = 15.638, $p = .048$
- Performing at marching competitions causes feelings of nervousness, χ^2 (8, N = 438) = 18.973, $p = .015$
- Students perform better when they are nervous, χ^2 (8, N = 437) = 22.849, $p = .004$
- The more that students perform at marching band competitions, the less nervous they feel, χ^2 (8, N = 438) = 24.316, $p = .002$
- Students who experience success at marching band competitions believe that their bands are among some of the best in their area, χ^2 (8, N = 435) = 155.07, $p < .001$
- Competitive marching band contributes to the social experience of a school music program, χ^2 (8, N = 438) = 26.816, $p = .001$
- Competitive marching band gives students the opportunity to bond with other band members, χ^2 (8, N = 437) = 25.230, $p = .001$
- The competitive marching band experience helps create a sense of family, χ^2 (8, N = 437) = 27.499, $p = .001$

Participants from moderately successful marching bands (i.e., marching bands with win percentages between .251 and .599) revealed the following perspectives more frequently than any other group:

- Students concentrate in band class the most during the marching band season, χ^2 (8, N = 437) = 20.437, p = .009
- Students are the most excited to attend band class during the marching band season, χ^2 (8, N = 438) = 20.115, p = .010
- Directors share adjudicator feedback with the entire class following a marching band competition, χ^2 (8, N = 437) = 19.011, p = .015
- Students learn about music history by participating in a competitive marching band, χ^2 (8, N = 438) = 16.399, p = .037
- Students take comments from marching band judges seriously, χ^2 (8, N = 439) = 18.691, p = .017
- Students join band in high school because of competitive marching band, χ^2 (8, N = 438) = 42.717, $p < .001$
- Students wish they could be part of another school's competitive marching band instead of their own, χ^2 (8, N = 438) = 20.515, p = .009
- Students feel embarrassed about how their marching band performs in competition, χ^2 (8, N = 438) = 33.389, $p < .001$

Lastly, participants from minimally successful marching bands (i.e., marching bands with win percentages between .000 and .250) articulated the following perceptions more often than any other group:

- Marching bands should be given divisional ratings at contests (i.e., Division I – Superior; Division II – Excellent…) so more than one ensemble could earn a top rating, χ^2 (8, N = 439) = 39.776, $p < .001$
- The judges at marching band competitions are fair in their assessment of bands, χ^2 (8, N = 438) = 23.936, p = .002

A full description of participants' responses to the survey items is found in Appendix C.

Commonalities between competitive marching band students from varying success levels. Perhaps the most striking similarity between all three groups was revealed in the extent to which members indicated that their band directors share adjudicator feedback with them following a band competition. Each group of participants indicated to a high degree that their directors share the judges' commentary with the class following a marching band competition. Commonalities also existed in how highly students perceive competitive marching band as a social experience. Regardless of a marching band's success, it is noteworthy that respondents indicated that competitive marching band (a) contributes to the social experience of a music program, (b) helps band members create bonds with one another, and (c) creates a sense of family. These findings suggest that while not every band member may experience the exuberance of winning, the desire to win a trophy is not the common thread that is shared by competitive marchers. Perhaps more students are drawn to this activity for its familial atmosphere than for its competitive outcomes.

Two survey items asked participants (a) if they felt competitive marching band is a stressful activity (i.e., question 33) and (b) if they had ever considered quitting competitive marching band (i.e., question 34). Interestingly, neither of these statements produced statistically significant differences between any of the three groups when responses were stratified by competitive success. It appears as though band students from each success tier experience similar levels of stress as a member of a competitive marching band, but those who excel in competition view this activity far more positively than those who do not. Descriptive statistics revealed that students from highly successful marching bands are 6.6% more likely to rate competitive marching band as being educationally and musically valuable than students from moderately successful bands, and 14.1% more likely to do the same as compared to students from minimally successful bands. This finding corroborates previous research suggesting that the more frequently students compete, the more positive their attitudes are toward competition and the higher their festival scores tend to be (Burnsed & Sochinksi, 1983; Burnsed, Sochinski, & Hinkle, 1983; Rickels, 2008; Rogers, 1984; Stamer, 2004).

Discussion

Defining competitive success as it relates to marching band was not a simple undertaking. As evidenced in the literature, musical success has been evaluated through (a) effort (Asmus, 1985; Austin, 1988; 1991; Boeckman, 2002; Cassidy & Sims, 1991; Chandler, Chiarella, & Auria, 1988; Daniel, 2006; LaRue, 1986; Oakley, 1972; Schmidt, 2005; Sheldon, 1994; Shindler, 2009), (b) longitudinal improvement (Shellahamer et al., 1986), (c) divisional rating (Bergee, 2015; Burnsed et al., 1985; Hash, 2013; Meyers, 2012a; Moore, 1972; Oakley, 1987), (d) degree of musicianship (Barton, 1964; Hash, 2016; Head, Jr., 1983; Jolly, 2008; Madsen, Plack, & Dunnigan, 2007, Millard, 2014), and (e) the number of trophies or accolades won (Herbert & Myers, 2010; Rittenhouse, 1989; Walker, 1989). By using the win percentage statistic as a basis for this study however, most of the survey data yielded results that were expected. In essence, it was empirically determined that winning bands enjoy winning more than losing bands enjoy losing. In spite of this, the extent to which this phenomenon was observed was not nearly as drastic as expected. Perhaps there is some unidentified characteristic associated with competitive marching band that attracts and retains students. Based on the survey results, this trait is likely found somewhere within the social aspect of competitive marching band. The three survey statements found within the social experience category produced the highest number of favorable responses (i.e., selecting *Agree* or *Strongly Agree*) out of any other construct. Potentially, the social facets of competitive marching band might have influenced how students responded to the musical aspects of this activity. This might, in part, explain the survey instrument's low degree of construct validity and the low alpha coefficients found within certain subscales. Conceivably, the survey's validity and reliability might also have been enhanced if more emphasis was placed on the demographic characteristics of each school (e.g., amount of funding; location stratified by urban, suburban, or rural regions) rather than just the composition of the participating bands. Future research could explore this phenomenon further.

Alternatively, students could have simply been driven to improve their marching field show throughout the course of a competitive season. This latter point however, was not specifically assessed on the survey instrument. Yet, it is conceivable that students care less about trophies and more about achieving their individual and team goals. Students presumably do not rationalize competitive marching band participation by their desire to win trophies, but appear to be comfortable with having the opportunity to earn them.

Respondents indicated, to a high degree, that music competition is valuable to their educational and musical pursuits. Many students revealed that competitive marching band (a) improved their musicianship, (b) increased their motivation, and (c) provided a rich social experience. On the contrary, most participants from this study also revealed that competitive marching band is a stressful activity. Some students even indicated that they (a) had felt embarrassed about how they performed at a competition, (b) had wished that they were part of another school's marching band, and (c) had even considered quitting competitive marching band altogether. It is important to note that despite these contrasting viewpoints, these responses only indicate student perceptions. Whether or not competitive marching band improves actual musicianship is unknown. Music educators should thus proceed with caution if using data from this study to evaluate competitive marching band's place in their own curricula.

It is necessary for high school music directors to determine whether or not competition deserves a place in their classrooms, and to what extent. Some might see competition as a viable teaching tool in certain situations, but others might view it as a vehicle to unfulfilling musical experiences and burnout. This topic is deserving of continued discussion and debate. Are pre-service music teachers having conversations about music competition? Are university professors and mentor teachers challenging future music educators to develop a stance on competition before entering the profession? Are current practitioners considering whether or not their decision to compete is rooted in common practice or best practice? More discourse on music competition will only strengthen our philosophies as music teachers on the rationality of incorporating activities such as competitive marching band in the music curriculum.

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Appendix A: Win Percentage Breakdowns

Win Percentage Breakdown: Marching Band #1

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	1 of 6	5	5
Contest #2	1 of 5	4	4
Contest #3	1 of 9	8	8
Contest #4	3 of 8	5	7
Contest #5	11 of 17	6	16
Contest #6	3 of 8	5	7
	Total:	**33**	**47**

OVERALL WIN PERCENTAGE: .702 (33/47)

Win Percentage Breakdown: Marching Band #2

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	3 of 6	3	5
Contest #2	4 of 5	1	4
Contest #3	9 of 9	0	8
Contest #4	7 of 9	2	8
	Total:	**6**	**25**

OVERALL WIN PERCENTAGE: .240 (6/25)

Win Percentage Breakdown: Marching Band #3

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	4 of 5	1	4
	Total:	**1**	**4**

OVERALL WIN PERCENTAGE: .250 (1/4)

Antos

Win Percentage Breakdown: Marching Band #4

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	1 of 3	2	2
Contest #2	1 of 4	3	3
Contest #3	3 of 4	1	3
Contest #4	1 of 2	1	1
Contest #5	4 of 8	4	7
Contest #6	1 of 2	1	1
Contest #7	1 of 9	8	8
	Total:	**20**	**25**

OVERALL WIN PERCENTAGE: .800
(20/25)

Win Percentage Breakdown: Marching Band #5

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	3 of 5	2	4
Contest #2	2 of 2	0	1
Contest #3	2 of 5	3	4
Contest #4	4 of 9	5	8
	Total:	**10**	**17**

OVERALL WIN PERCENTAGE: .588
(10/17)

Win Percentage Breakdown: Marching Band #6

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	5 of 6	1	5
Contest #2	6 of 11	5	10
Contest #3	2 of 4	2	3
Contest #4	4 of 9	5	8
Contest #5	5 of 6	1	5
Contest #6	12 of 15	3	14
	Total:	**17**	**45**

OVERALL WIN PERCENTAGE: .378
(17/45)

Win Percentage Breakdown: Marching Band #7

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	1 of 6	5	5
Contest #2	1 of 4	3	3
Contest #3	6 of 11	5	10
Contest #4	3 of 6	3	5
Contest #5	2 of 7	5	6
	Total:	**21**	**29**

OVERALL WIN PERCENTAGE: .724
(21/29)

Win Percentage Breakdown: Marching Band #8

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	2 of 7	5	6
Contest #2	1 of 11	10	10
Contest #3	2 of 6	4	5
Contest #4	1 of 7	6	6
Contest #5	11 of 16	5	15
	Total:	**30**	**42**

OVERALL WIN PERCENTAGE: .714
(30/42)

Win Percentage Breakdown: Marching Band #9

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	3 of 3		2
	Total:	**0**	**2**

OVERALL WIN PERCENTAGE: .000 (0/2)

Antos

Win Percentage Breakdown: Marching Band #10

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	5 of 6	1	5
Contest #2	4 of 4	0	3
	Total:	**1**	**8**

OVERALL WIN PERCENTAGE: .125 (1/8)

Win Percentage Breakdown: Marching Band #11

Contests Attended	Contest Rankings	Number of Bands Defeated	Total Number of Bands Competed Against
Contest #1	5 of 8	3	7
Contest #2	6 of 7	1	6
Contest #3	6 of 9	3	8
Contest #4	4 of 7	3	6
Contest #5	7 of 8	1	7
	Total:	**11**	**34**

OVERALL WIN PERCENTAGE: .391 (11/34)

Appendix C: Crosstabs of Participants' Responses to Competitive Marching Band Survey

		Minimal Success	Moderate Success	High Success	TOTAL
Question 1: I believe the learning process is enhanced when a teacher stresses competition. χ^2 (8, N = 437) = 28.009, p < .001	Strongly Disagree	5 (3.4%)	3 (1.8%)	1 (0.8%)	9 (2.1%)
	Disagree	33 (22.8%)	21 (12.5%)	12 (9.7%)	66 (15.1%)
	Neutral	42 (29.0%)	31 (18.5%)	21 (16.9%)	94 (21.5%)
	Agree	56 (38.6%)	91 (54.2%)	71 (57.3%)	218 (49.9%)
	Strongly Agree	9 (6.2%)	22 (13.1%)	19 (15.3%)	50 (11.4%)
Question 2: My band class stays more on task in rehearsal during marching band season than any other time throughout the year. χ^2 (8, N = 436) = 32.058, p < .001	Strongly Disagree	11 (7.6%)	3 (1.8%)	1 (0.8%)	15 (3.4%)
	Disagree	34 (23.4%)	22 (13.2%)	13 (10.5%)	69 (15.8%)
	Neutral	27 (18.6%)	34 (20.4%)	22 (17.7%)	83 (19.0%)
	Agree	59 (40.7%)	67 (40.1%)	55 (44.4%)	181 (41.5%)
	Strongly Agree	14 (9.7%)	41 (24.6%)	33 (26.6%)	88 (20.2%)
Question 3: I concentrate more in band class during marching band season than any other time throughout the year. χ^2 (8, N = 437) = 20.437, p = .009	Strongly Disagree	10 (6.8%)	7 (4.2%)	4 (3.3%)	21 (4.8%)
	Disagree	35 (24.0%)	30 (17.9%)	17 (13.8%)	82 (18.8%)
	Neutral	37 (25.3%)	30 (17.9%)	41 (33.3%)	108 (24.7%)
	Agree	40 (27.4%)	48 (28.6%)	30 (24.4%)	118 (27.0%)
	Strongly Agree	24 (16.4%)	53 (31.5%)	31 (25.2%)	108 (24.7%)
Question 4: I am most excited about going to band class during marching band season. χ^2 (8, N = 438) = 20.115, p = .010	Strongly Disagree	9 (6.2%)	10 (5.9%)	2 (1.6%)	21 (4.8%)
	Disagree	26 (17.9%)	13 (7.7%)	9 (7.3%)	48 (11.0%)
	Neutral	28 (19.3%)	30 (17.8%)	34 (27.4%)	92 (21.0%)
	Agree	40 (27.6%)	47 (27.8%)	37 (29.8%)	124 (28.3%)
	Strongly Agree	42 (29.0%)	69 (40.8%)	42 (33.9%)	153 (34.9%)
Question 5: My director shares the judges' comments with my group after a marching band competition takes place. χ^2 (8, N = 437) = 19.011, p = .015	Strongly Disagree	1 (0.7%)	0 (0.0%)	2 (1.6%)	3 (0.7%)
	Disagree	7 (4.8%)	2 (1.2%)	0 (0.0%)	9 (2.1%)
	Neutral	8 (5.5%)	7 (4.2%)	6 (4.9%)	21 (4.8%)
	Agree	53 (36.3%)	41 (24.4%)	37 (30.1%)	131 (30.0%)
	Strongly Agree	77 (52.7%)	118 (70.2%)	78 (63.4%)	273 (62.5%)
Question 6: I learn what to do, or what not to do, when I watch marching bands from other schools. χ^2 (8, N = 438) = 28.670, p < .001	Strongly Disagree	5 (3.4%)	2 (1.2%)	1 (0.8%)	8 (1.8%)
	Disagree	26 (17.8%)	8 (4.8%)	8 (6.5%)	42 (9.6%)
	Neutral	26 (17.8%)	29 (17.3%)	12 (9.7%)	67 (15.3%)
	Agree	61 (41.8%)	81 (48.2%)	62 (50.0%)	204 (46.6%)
	Strongly Agree	28 (19.2%)	48 (28.6%)	41 (33.1%)	117 (26.7%)

Question 7: I learn by watching and listening to students from other marching bands who play the same instrument as me. χ^2 (8, N = 437) = 20.200, p = .010	Strongly Disagree	9 (6.3%)	5 (3.0%)	5 (4.0%)	19 (4.3%)
	Disagree	30 (20.8%)	27 (16.0%)	15 (12.1%)	72 (16.5%)
	Neutral	28 (19.4%)	34 (20.1%)	19 (15.3%)	81 (18.5%)
	Agree	49 (34.0%)	76 (45.0%)	43 (34.7%)	168 (38.4%)
	Strongly Agree	28 (19.4%)	27 (16.0%)	42 (33.9%)	97 (22.2%)
Question 8: Marching band competitions are good places to learn how to be a respectful audience member. χ^2 (8, N = 436) = 28.490, p < .001	Strongly Disagree	5 (3.4%)	1 (0.6%)	1 (0.8%)	7 (1.6%)
	Disagree	10 (6.9%)	12 (7.2%)	5 (4.0%)	27 (6.2%)
	Neutral	24 (16.6%)	22 (13.2%)	7 (5.6%)	53 (12.2%)
	Agree	65 (44.8%)	58 (34.7%)	41 (33.1%)	164 (37.6%)
	Strongly Agree	41 (28.3%)	74 (44.3%)	70 (56.5%)	185 (42.4%)
Question 9: Music competition motivates me to practice. χ^2 (8, N = 438) = 31.847, p < .001	Strongly Disagree	6 (4.1%)	4 (2.4%)	1 (0.8%)	11 (2.5%)
	Disagree	17 (11.6%)	12 (7.1%)	4 (3.3%)	33 (7.5%)
	Neutral	20 (13.7%)	27 (16.0%)	10 (8.1%)	57 (13.0%)
	Agree	57 (39.0%)	67 (39.6%)	34 (27.6%)	158 (36.1%)
	Strongly Agree	46 (31.5%)	59 (34.9%)	74 (60.2%)	179 (40.9%)
Question 10: I spend more time practicing during marching band season than any other time throughout the year. χ^2 (8, N = 436) = 27.872, p < .001	Strongly Disagree	15 (10.3%)	10 (5.9%)	1 (0.8%)	26 (6.0%)
	Disagree	31 (21.4%)	32 (18.9%)	12 (9.8%)	75 (17.2%)
	Neutral	26 (17.9%)	26 (15.4%)	19 (15.6%)	71 (16.3%)
	Agree	39 (26.9%)	59 (34.9%)	38 (31.1%)	136 (31.2%)
	Strongly Agree	34 (23.4%)	42 (24.9%)	52 (42.6%)	128 (29.4%)
Question 11: I participate in my school's competitive marching band to win trophies at contests. χ^2 (8, N = 437) = 12.885, p = .116	Strongly Disagree	23 (15.9%)	23 (13.7%)	24 (19.4%)	70 (16.0%)
	Disagree	48 (33.1%)	45 (26.8%)	27 (21.8%)	120 (27.5%)
	Neutral	28 (19.3%)	45 (26.8%)	26 (21.0%)	99 (22.7%)
	Agree	23 (15.9%)	40 (23.8%)	30 (24.2%)	93 (21.3%)
	Strongly Agree	23 (15.9%)	15 (8.9%)	17 (13.7%)	55 (12.6%)
Question 12: As long as my section wins a caption award (e.g., Best Auxiliary, Best Percussion), I do not really care about how well the whole band ranks overall. χ^2 (8, N = 438) = 8.453, p = .391	Strongly Disagree	55 (37.9%)	62 (36.7%)	53 (42.7%)	170 (38.8%)
	Disagree	49 (33.8%)	72 (42.6%)	49 (39.5%)	170 (38.8%)
	Neutral	25 (17.2%)	19 (11.2%)	15 (12.1%)	59 (13.5%)
	Agree	9 (6.2%)	12 (7.1%)	5 (4.0%)	26 (5.9%)
	Strongly Agree	7 (4.8%)	4 (2.4%)	2 (1.6%)	13 (3.0%)
Question 13: The best aspect of marching band is beating other marching bands at competitions. χ^2 (8, N = 439) = 6.848, p = .553	Strongly Disagree	46 (31.5%)	44 (26.0%)	35 (28.2%)	125 (28.5%)
	Disagree	48 (32.9%)	60 (35.5%)	47 (37.9%)	155 (35.3%)
	Neutral	27 (18.5%)	38 (22.5%)	19 (15.3%)	84 (19.1%)
	Agree	17 (11.6%)	19 (11.2%)	11 (8.9%)	47 (10.7%)
	Strongly Agree	8 (5.5%)	8 (4.7%)	12 (9.7%)	28 (6.4%)

Question 14: Impressing the judges is what motivates me more than anything to perform my best. χ^2 (8, N = 438) = 9.153, p = .330	Strongly Disagree	22 (15.1%)	18 (10.7%)	4 (11.3%)	54 (12.3%)
	Disagree	27 (18.5%)	38 (22.6%)	24 (19.4%)	89 (20.3%)
	Neutral	48 (32.9%)	44 (26.2%)	32 (25.8%)	124 (28.3%)
	Agree	31 (21.2%)	54 (32.1%)	38 (30.6%)	123 (28.1%)
	Strongly Agree	18 (12.3%)	14 (8.3%)	16 (12.9%)	48 (11.0%)
Question 15: Competitive marching band helps me learn to appreciate a variety of musical styles. χ^2 (8, N = 439) = 14.612, p = .067	Strongly Disagree	2 (1.4%)	2 (1.2%)	0 (0.0%)	4 (0.9%)
	Disagree	11 (7.5%)	14 (8.3%)	2 (1.6%)	27 (6.2%)
	Neutral	23 (15.8%)	23 (13.6%)	16 (12.9%)	62 (14.1%)
	Agree	73 (50.0%)	83 (49.1%)	55 (44.4%)	211 (48.1%)
	Strongly Agree	37 (25.3%)	47 (27.8%)	51 (41.1%)	135 (30.8%)
Question 16: I learn about music history as a result of performing in a competitive marching band. χ^2 (8, N = 438) = 16.399, p = .037	Strongly Disagree	14 (9.7%)	16 (9.5%)	6 (4.8%)	36 (8.2%)
	Disagree	66 (45.5%)	51 (30.2%)	37 (29.8%)	154 (35.2%)
	Neutral	37 (25.5%)	53 (31.4%)	46 (37.1%)	136 (31.1%)
	Agree	24 (16.6%)	39 (23.1%)	26 (21.0%)	89 (20.3%)
	Strongly Agree	4 (2.8%)	10 (5.9%)	9 (7.3%)	23 (5.3%)
Question 17: I learn about music theory as a result of performing in a competitive marching band. χ^2 (8, N = 436) = 14.893, p = .061	Strongly Disagree	13 (9.0%)	15 (8.9%)	6 (4.8%)	34 (7.8%)
	Disagree	46 (31.9%)	36 (21.4%)	31 (25.0%)	113 (25.9%)
	Neutral	40 (27.8%)	42 (25.0%)	31 (25.0%)	113 (25.9%)
	Agree	41 (28.5%)	55 (32.7%)	43 (34.7%)	139 (31.9%)
	Strongly Agree	4 (2.8%)	20 (11.9%)	13 (10.5%)	37 (8.5%)
Question 18: I perform with greater technique as a result of performing in a competitive marching band. χ^2 (8, N = 437) = 33.263, p < .001	Strongly Disagree	4 (2.7%)	4 (2.4%)	1 (0.8%)	9 (2.1%)
	Disagree	9 (6.2%)	10 (6.0%)	2 (1.6%)	21 (4.8%)
	Neutral	36 (24.7%)	24 (14.4%)	8 (6.5%)	68 (15.6%)
	Agree	63 (43.2%)	86 (51.5%)	57 (46.0%)	206 (47.1%)
	Strongly Agree	34 (23.3%)	43 (25.7%)	56 (45.2%)	133 (30.4%)
Question 19: Competitive marching band helps me develop my musicality (i.e., dynamics, phrasing, balance, blend). χ^2 (8, N = 439) = 40.058, p < .001	Strongly Disagree	4 (2.7%)	7 (4.1%)	1 (0.8%)	12 (2.7%)
	Disagree	10 (6.8%)	3 (1.8%)	0 (0.0%)	13 (3.0%)
	Neutral	18 (12.3%)	23 (13.6%)	2 (1.6%)	43 (9.8%)
	Agree	63 (43.2%)	71 (42.0%)	45 (36.3%)	179 (40.8%)
	Strongly Agree	51 (34.9%)	65 (38.5%)	76 (61.3%)	192 (43.7%)
Question 20: Competitive marching band helps me become a better performer in other musical ensembles (e.g., concert band, jazz ensemble). χ^2 (8, N = 438) = 31.559, p < .001	Strongly Disagree	5 (3.4%)	7 (4.2%)	0 (0.0%)	12 (2.7%)
	Disagree	13 (8.9%)	10 (6.0%)	3 (2.4%)	26 (5.9%)
	Neutral	16 (11.0%)	37 (22.0%)	11 (8.9%)	64 (14.6%)
	Agree	65 (44.5%)	60 (35.7%)	45 (36.3%)	170 (38.8%)
	Strongly Agree	47 (32.2%)	54 (32.1%)	65 (52.4%)	166 (37.9%)

Question 21: I believe learning how to march has made me a better musician. χ^2 (8, N = 434) = 23.176, p = .003	Strongly Disagree	7 (4.9%)	7 (4.1%)	1 (0.8%)	15 (3.5%)
	Disagree	20 (13.9%)	19 (11.2%)	3 (2.5%)	42 (9.7%)
	Neutral	27 (18.8%)	39 (23.1%)	27 (22.3%)	93 (21.4%)
	Agree	49 (34.0%)	62 (36.7%)	37 (30.6%)	148 (34.1%)
	Strongly Agree	41 (28.5%)	42 (24.9%)	53 (43.8%)	136 (31.3%)
Question 22: Marching bands should be ranked in order (i.e., 1st, 2nd, 3rd...) and the rankings should be published for all to see. χ^2 (8, N = 439) = 30.488, p < .001	Strongly Disagree	16 (11.0%)	2 (1.2%)	3 (2.4%)	21 (4.8%)
	Disagree	22 (15.1%)	18 (10.7%)	9 (7.3%)	49 (11.2%)
	Neutral	36 (24.7%)	55 (32.5%)	30 (24.2%)	121 (27.6%)
	Agree	44 (30.1%)	56 (33.1%)	40 (32.3%)	140 (31.9%)
	Strongly Agree	28 (19.2%)	38 (22.5%)	42 (33.9%)	108 (24.6%)
Question 23: Marching bands should be given division ratings (i.e., Division I, Division II...) so more than one ensemble could win a top rating. χ^2 (8, N = 439) = 39.776, p < .001	Strongly Disagree	7 (4.8%)	9 (5.3%)	12 (9.7%)	28 (6.4%)
	Disagree	14 (9.6%)	35 (20.7%)	34 (27.4%)	83 (18.9%)
	Neutral	30 (20.5%)	50 (29.6%)	31 (25.0%)	111 (25.3%)
	Agree	44 (30.1%)	48 (28.4%)	34 (27.4%)	126 (28.7%)
	Strongly Agree	51 (34.9%)	27 (16.0%)	13 (10.5%)	91 (20.7%)
Question 24: I believe the judges at marching band competitions are fair. χ^2 (8, N = 438) = 23.936, p = .002	Strongly Disagree	7 (4.8%)	2 (1.2%)	9 (7.3%)	18 (4.1%)
	Disagree	16 (11.0%)	34 (20.2%)	23 (18.5%)	73 (16.7%)
	Neutral	42 (28.8%)	59 (35.1%)	50 (40.3%)	151 (34.5%)
	Agree	64 (43.8%)	60 (35.7%)	28 (22.6%)	152 (34.7%)
	Strongly Agree	17 (11.6%)	13 (7.7%)	14 (11.3%)	44 (10.0%)
Question 25: I believe the judges at marching band competitions play favorites (e.g., score certain bands higher than others for reasons not related to performance). χ^2 (8, N = 437) = 35.288, p < .001	Strongly Disagree	15 (10.3%)	8 (4.8%)	6 (4.9%)	29 (6.6%)
	Disagree	49 (33.6%)	33 (19.6%)	14 (11.4%)	96 (22.0%)
	Neutral	45 (30.8%)	59 (35.1%)	42 (34.1%)	146 (33.4%)
	Agree	20 (13.7%)	51 (30.4%)	40 (32.5%)	111 (25.4%)
	Strongly Agree	17 (11.6%)	17 (10.1%)	21 (17.1%)	55 (12.6%)
Question 26: I take comments from marching band judges seriously. χ^2 (8, N = 439) = 18.691, p = .017	Strongly Disagree	5 (3.4%)	3 (1.8%)	1 (0.8%)	9 (2.1%)
	Disagree	18 (12.3%)	12 (7.1%)	2 (1.6%)	32 (7.3%)
	Neutral	29 (19.9%)	23 (13.6%)	27 (21.8%)	79 (18.0%)
	Agree	65 (44.5%)	88 (52.1%)	60 (48.4%)	213 (48.5%)
	Strongly Agree	29 (19.9%)	43 (25.4%)	34 (27.4%)	106 (24.1%)
Question 27: I enjoy watching the performances of marching bands from other schools. χ^2 (8, N = 439) = 9.215, p = .324	Strongly Disagree	2 (1.4%)	3 (1.8%)	1 (0.8%)	6 (1.4%)
	Disagree	9 (6.2%)	6 (3.6%)	1 (0.8%)	16 (3.6%)
	Neutral	9 (6.2%)	14 (8.3%)	7 (5.6%)	30 (6.8%)
	Agree	44 (30.1%)	39 (23.1%)	34 (27.4%)	117 (26.7%)
	Strongly Agree	82 (56.2%)	107 (63.3%)	81 (65.3%)	270 (61.5%)

Question 28: Competitive marching band is an important part of my music education. χ^2 (8, N = 438) = 47.057, p < .001	Strongly Disagree	8 (5.5%)	5 (3.0%)	1 (0.8%)	14 (3.2%)
	Disagree	14 (9.6%)	6 (3.6%)	1 (0.8%)	21 (4.8%)
	Neutral	34 (23.3%)	17 (10.1%)	15 (12.1%)	66 (15.1%)
	Agree	51 (34.9%)	70 (41.7%)	34 (27.4%)	155 (35.4%)
	Strongly Agree	39 (26.7%)	70 (41.7%)	73 (58.9%)	182 (41.6%)
Question 29: I enjoy competitive marching band performances more than non-competitive marching band performances (e.g., community parades, halftime shows). χ^2 (8, N = 438) = 76.038, p < .001	Strongly Disagree	13 (8.9%)	3 (1.8%)	2 (1.6%)	18 (4.1%)
	Disagree	33 (22.6%)	19 (11.3%)	1 (0.8%)	53 (12.1%)
	Neutral	40 (27.4%)	33 (19.6%)	15 (12.1%)	88 (20.1%)
	Agree	32 (21.9%)	40 (23.8%)	31 (25.0%)	103 (23.5%)
	Strongly Agree	28 (19.2%)	73 (43.5%)	75 (60.5%)	176 (40.2%)
Question 30: Music competition brings out the best in me. χ^2 (8, N = 438) = 46.848, p < .001	Strongly Disagree	9 (6.2%)	4 (2.4%)	1 (0.8%)	14 (3.2%)
	Disagree	23 (15.8%)	13 (7.7%)	0 (0.0%)	36 (8.2%)
	Neutral	36 (24.7%)	48 (28.6%)	16 (12.9%)	100 (22.8%)
	Agree	44 (30.1%)	59 (35.1%)	59 (47.6%)	162 (37.0%)
	Strongly Agree	34 (23.3%)	44 (26.2%)	48 (38.7%)	126 (28.8%)
Question 31: I believe marching band would not be as much fun if my school did not compete. χ^2 (8, N = 437) = 63.134, p < .001	Strongly Disagree	15 (10.3%)	5 (3.0%)	1 (0.8%)	21 (4.8%)
	Disagree	30 (20.5%)	10 (6.0%)	4 (3.3%)	44 (10.1%)
	Neutral	21 (14.4%)	17 (10.1%)	7 (5.7%)	45 (10.3%)
	Agree	39 (26.7%)	45 (26.8%)	33 (26.8%)	117 (26.8%)
	Strongly Agree	41 (28.1%)	91 (54.2%)	78 (63.4%)	210 (48.1%)
Question 32: I joined band in high school because I wanted to participate in competitive marching band. χ^2 (8, N = 438) = 42.717, p < .001	Strongly Disagree	32 (21.9%)	17 (10.1%)	8 (6.5%)	57 (13.0%)
	Disagree	45 (30.8%)	38 (22.6%)	24 (19.4%)	107 (24.4%)
	Neutral	35 (24.0%)	30 (17.9%)	40 (32.3%)	105 (24.0%)
	Agree	23 (15.8%)	37 (22.0%)	27 (21.8%)	87 (19.9%)
	Strongly Agree	11 (7.5%)	46 (27.4%)	25 (20.2%)	82 (18.7%)
Question 33: Competitive marching band is a stressful activity. χ^2 (8, N = 439) = 8.038, p = .430	Strongly Disagree	3 (2.1%)	4 (2.4%)	0 (0.0%)	7 (1.6%)
	Disagree	20 (13.7%)	16 (9.5%)	13 (10.5%)	49 (11.2%)
	Neutral	35 (24.0%)	43 (25.4%)	27 (21.8%)	105 (23.9%)
	Agree	55 (37.7%)	78 (46.2%)	55 (44.4%)	188 (42.8%)
	Strongly Agree	33 (22.6%)	28 (16.6%)	29 (23.4%)	90 (20.5%)
Question 34: I have considered quitting competitive marching band on at least one occasion. χ^2 (8, N = 438) = 8.034, p = .430	Strongly Disagree	36 (24.7%)	42 (25.0%)	31 (25.0%)	109 (24.9%)
	Disagree	32 (21.9%)	40 (23.8%)	29 (23.4%)	101 (23.1%)
	Neutral	13 (8.9%)	12 (7.1%)	12 (9.7%)	37 (8.4%)
	Agree	31 (21.2%)	49 (29.2%)	36 (29.0%)	116 (26.5%)
	Strongly Agree	34 (21.2%)	25 (14.9%)	16 (12.9%)	75 (17.1%)

Question 35: Being part of a competitive marching band causes unnecessary drama between band members. χ^2 (8, N = 438) = 15.638, p = .048	Strongly Disagree	16 (11.0%)	11 (6.5%)	8 (6.5%)	35 (8.0%)
	Disagree	24 (16.4%)	35 (20.8%)	10 (8.1%)	69 (15.8%)
	Neutral	26 (17.8%)	39 (23.2%)	33 (26.6%)	98 (22.4%)
	Agree	50 (34.2%)	56 (33.3%)	41 (33.1%)	147 (33.6%)
	Strongly Agree	30 (20.5%)	27 (16.1%)	32 (25.8%)	89 (20.3%)
Question 36: Performing at marching band competitions makes me feel nervous. χ^2 (8, N = 438) = 18.973, p = .015	Strongly Disagree	14 (9.6%)	15 (8.9%)	7 (5.6%)	36 (8.2%)
	Disagree	20 (13.7%)	31 (18.5%)	20 (16.1%)	71 (16.2%)
	Neutral	27 (18.5%)	54 (32.1%)	32 (25.8%)	113 (25.8%)
	Agree	55 (37.7%)	56 (33.3%)	46 (37.1%)	157 (35.8%)
	Strongly Agree	30 (20.5%)	12 (7.1%)	19 (15.3%)	61 (13.9%)
Question 37: I perform better when I am nervous. χ^2 (8, N = 437) = 22.849, p = .004	Strongly Disagree	33 (22.8%)	17 (10.1%)	11 (8.9%)	61 (14.0%)
	Disagree	35 (24.1%)	39 (23.2%)	25 (20.2%)	99 (22.7%)
	Neutral	46 (31.7%)	57 (33.9%)	38 (30.6%)	141 (32.3%)
	Agree	23 (15.9%)	38 (22.6%)	30 (24.2%)	91 (20.8%)
	Strongly Agree	8 (5.5%)	17 (10.1%)	20 (16.1%)	45 (10.3%)
Question 38: I fear that I might make a mistake at a marching band competition that could cause my band to lose points. χ^2 (8, N = 438) = 12.215, p = .142	Strongly Disagree	10 (6.8%)	9 (5.4%)	5 (4.0%)	24 (5.5%)
	Disagree	20 (13.7%)	25 (14.9%)	17 (13.7%)	62 (14.2%)
	Neutral	20 (13.7%)	28 (16.7%)	17 (13.7%)	65 (14.8%)
	Agree	56 (38.4%)	77 (45.8%)	43 (34.7%)	176 (40.2%)
	Strongly Agree	40 (27.4%)	29 (17.3%)	42 (33.9%)	111 (25.3%)
Question 39: The more I perform at marching band competitions, the less nervous I feel performing in front of others. χ^2 (8, N = 438) = 24.316, p = .002	Strongly Disagree	6 (4.1%)	5 (3.0%)	5 (4.0%)	16 (3.7%)
	Disagree	10 (6.8%)	13 (7.7%)	2 (1.6%)	25 (5.7%)
	Neutral	24 (16.4%)	28 (16.7%)	8 (6.5%)	60 (13.7%)
	Agree	62 (42.5%)	63 (37.5%)	42 (33.9%)	167 (38.1%)
	Strongly Agree	44 (30.1%)	59 (35.1%)	67 (54.0%)	170 (38.8%)
Question 40: After watching marching bands from other schools perform at contests, I have wished I was part of another school's band instead of my own on at least one occasion. χ^2 (8, N = 438) = 20.515, p = .009	Strongly Disagree	29 (19.9%)	19 (11.3%)	33 (26.6%)	81 (18.5%)
	Disagree	26 (17.8%)	40 (23.8%)	24 (19.4%)	90 (20.5%)
	Neutral	24 (16.4%)	25 (14.9%)	16 (12.9%)	65 (14.8%)
	Agree	42 (28.8%)	56 (33.3%)	44 (35.5%)	142 (32.4%)
	Strongly Agree	25 (17.1%)	28 (16.7%)	7 (5.6%)	60 (13.7%)

Question 41: I have felt embarrassed as a result of how my band performed at a marching band competition on at least one occasion. χ^2 (8, N = 438) = 33.389, p < .001	Strongly Disagree	22 (15.1%)	19 (11.3%)	36 (29.0%)	77 (17.6%)
	Disagree	34 (23.3%)	43 (25.6%)	28 (22.6%)	105 (24.0%)
	Neutral	25 (17.1%)	29 (17.3%)	20 (16.1%)	74 (16.9%)
	Agree	35 (24.0%)	62 (36.9%)	33 (26.6%)	130 (29.7%)
	Strongly Agree	30 (20.5%)	15 (8.9%)	7 (5.6%)	52 (11.9%)
Question 42: I feel good about myself after a strong performance even if my band does not win any awards at a competition. χ^2 (8, N = 438) = 11.534, p = .173	Strongly Disagree	3 (2.1%)	0 (0.0%)	2 (1.6%)	5 (1.1%)
	Disagree	7 (4.8%)	7 (4.2%)	1 (0.8%)	15 (3.4%)
	Neutral	13 (8.9%)	16 (9.5%)	15 (12.1%)	44 (10.0%)
	Agree	48 (32.9%)	63 (37.5%)	33 (26.6%)	144 (32.9%)
	Strongly Agree	75 (51.4%)	82 (48.8%)	73 (58.9%)	230 (52.5%)
Question 43: My self-esteem is damaged when my marching band does not win 1st Place. χ^2 (8, N = 438) = 8.280, p = .407	Strongly Disagree	67 (46.2%)	68 (40.2%)	40 (32.3%)	175 (40.0%)
	Disagree	47 (32.4%)	69 (40.8%)	58 (46.8%)	174 (39.7%)
	Neutral	19 (13.1%)	22 (13.0%)	18 (14.5%)	59 (13.5%)
	Agree	11 (7.6%)	8 (4.7%)	7 (5.6%)	26 (5.9%)
	Strongly Agree	1 (0.7%)	2 (1.2%)	1 (0.8%)	4 (0.9%)
Question 44: I believe my marching band is one of the better competitive marching bands in the area. χ^2 (8, N = 435) = 155.07, p < .001	Strongly Disagree	23 (15.9%)	6 (3.6%)	0 (0.0%)	29 (6.7%)
	Disagree	32 (22.1%)	21 (12.6%)	1 (0.8%)	54 (12.4%)
	Neutral	60 (41.4%)	66 (39.5%)	13 (10.6%)	139 (32.0%)
	Agree	22 (15.2%)	59 (35.3%)	63 (51.2%)	144 (33.1%)
	Strongly Agree	8 (5.5%)	15 (9.0%)	46 (37.4%)	69 (15.9%)
Question 45: I feel bad when I think my marching band is not as good as the other marching bands at a competition. χ^2 (8, N = 436) = 10.213, p = .250	Strongly Disagree	23 (15.9%)	15 (9.0%)	14 (11.3%)	52 (11.9%)
	Disagree	37 (25.5%)	39 (23.4%)	39 (31.5%)	115 (26.4%)
	Neutral	33 (22.8%)	50 (29.9%)	37 (29.8%)	120 (27.5%)
	Agree	46 (31.7%)	53 (31.7%)	31 (25.0%)	130 (29.8%)
	Strongly Agree	6 (4.1%)	10 (6.0%)	3 (2.4%)	19 (4.4%)
Question 46: I am proud of how I behave as an audience member at marching band competitions. χ^2 (8, N = 437) = 9.483, p = .303	Strongly Disagree	3 (2.1%)	2 (1.2%)	1 (0.8%)	6 (1.4%)
	Disagree	6 (4.1%)	3 (1.8%)	4 (3.2%)	13 (3.0%)
	Neutral	22 (15.2%)	17 (10.1%)	7 (5.6%)	46 (10.5%)
	Agree	61 (42.1%)	75 (44.6%)	57 (46.0%)	193 (44.2%)
	Strongly Agree	53 (36.6%)	71 (42.3%)	55 (44.4%)	179 (41.0%)

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Question 47: I am proud of my band's behavior at marching band competitions. χ^2 (8, N = 436) = 12.210, p = .142	Strongly Disagree	7 (4.8%)	5 (3.0%)	4 (3.3%)	16 (3.7%)
	Disagree	17 (11.7%)	13 (7.7%)	8 (6.5%)	38 (8.7%)
	Neutral	47 (32.4%)	36 (21.4%)	36 (29.3%)	119 (27.3%)
	Agree	43 (29.7%)	77 (45.8%)	49 (39.8%)	169 (38.8%)
	Strongly Agree	31 (21.4%)	37 (22.0%)	26 (21.1%)	94 (21.6%)
Question 48: Marching band competitions contribute to the social experience of a music program. χ^2 (8, N = 438) = 26.816, p = .001	Strongly Disagree	5 (3.4%)	5 (3.0%)	1 (0.8%)	11 (2.5%)
	Disagree	2 (1.4%)	0 (0.0%)	0 (0.0%)	2 (0.5%)
	Neutral	17 (11.6%)	5 (3.0%)	3 (2.4%)	25 (5.7%)
	Agree	54 (37.0%)	51 (30.4%)	37 (29.8%)	142 (32.4%)
	Strongly Agree	68 (46.6%)	107 (63.7%)	83 (66.9%)	258 (58.9%)
Question 49: Being part of a competitive marching band gives me an opportunity to bond with other band members. χ^2 (8, N = 437) = 25.230, p = .001	Strongly Disagree	2 (1.4%)	2 (1.2%)	1 (0.8%)	5 (1.1%)
	Disagree	5 (3.4%)	3 (1.8%)	0 (0.0%)	8 (1.8%)
	Neutral	10 (6.9%)	6 (3.6%)	2 (1.6%)	18 (4.1%)
	Agree	46 (31.7%)	27 (16.1%)	23 (18.5%)	96 (22.0%)
	Strongly Agree	82 (56.6%)	130 (77.4%)	98 (79.0%)	310 (70.9%)
Question 50: The competitive marching band experience helps create a sense of family. χ^2 (8, N = 437) = 27.499, p = .001	Strongly Disagree	5 (3.4%)	2 (1.2%)	1 (0.8%)	8 (1.8%)
	Disagree	10 (6.9%)	2 (1.2%)	0 (0.0%)	12 (2.7%)
	Neutral	15 (10.3%)	14 (8.3%)	4 (3.2%)	33 (7.6%)
	Agree	33 (22.8%)	33 (19.6%)	22 (17.7%)	88 (20.1%)
	Strongly Agree	82 (56.6%)	117 (69.6%)	97 (78.2%)	296 (67.7%)

EFFECTS OF SINGLE VERSUS MULTIPLE STAFF MUSIC NOTATION ON WIND CHAMBER GROUP PERFORMANCE OUTCOMES AND REHEARSAL PROCEDURES

Deborah A. Confredo and Ruth V. Brittin

The development of students' musical literacy is a key goal for music educators. It includes the ability to decipher notation, a symbolic system of musical communication and intent. Musicians must be able to read and translate music notation into meaningful information that results in accurate performance, an important objective for any ensemble director. Ensemble members must be able to execute their part and accurately integrate it with the other unique parts of the composition. Musicians and conductors are charged with addressing individual and group performance responsibilities. In choral ensembles, conductors guide performers whose written music almost always provides all score information; singers can read their own part while being able to access others'. In instrumental ensembles, however, performers are blind to parts other than their own, save the occasional cue. The full musical score is generally not provided to individual musicians but to the conductor alone. In contrast with the choral ensemble, the instrumental ensemble conductor is the only individual who has full knowledge of all information that comprises the musical work.

Limited notation access might disadvantage instrumentalists compared to full notation access enjoyed by vocal musicians. Instrumental ensemble directors must impart score information so ensemble members become aware of others' performance responsibilities throughout the work. Wind ensemble conductors can meet this responsibility with the luxury of rehearsal time but the challenge is pronounced during sight-reading when time is extremely limited and players hastily try to garner as much information as possible from their ration of information which is their individual part. Music reading processes and abilities are critical, particularly when music notation is scant.

The process of music reading is relatively complex, involving a number of regions of the brain in both serial and parallel processing (Levitin, 2006; Mannes, 2011; Roux, et al., 2007). Certain forms of musical understanding may be, in part, a function of a musician's ability to extract and integrate information derived from reading notation, in addition to processes involved in working and long-term memory that function in concert with auditory and motor stimuli (Ahken, et al., 2012; Gunter, et al., 2003). Musicians' processing of music notation

and subsequent performance is dependent on the available notation, the musician's executive skillfulness, and the type of music being performed (Wurtz, Mueiri, & Wiesendanger, 2009). The task of accurate and expressive performance is made more challenging when musicians must work together in an ensemble.

Sight-reading is a musical skill that can be cultivated (Kopiez & Lee, 2008; Kopiez, Weihs, Ligges, & Lee, 2006). Comprised of both preparation and performance (Wristen, 2005), more accomplished musicians demonstrate greater skills in sight-reading tasks compared to less accomplished musicians. Sight-reading efficacy can be determined through a "…linear combination of psycho-motor speed, early acquired expertise, mental speed, and the ability for auditory imagery" (Kopiez & Lee, 2008, p. 57). Music pattern training and chunking are often used as tools for sight-reading skills development (Kopiez & Lee, 2008; Lehmann & Ericsson, 1996).

The moniker "sight-reading" implies the initial and most basic tool upon which this task relies: *sight*. Eye movement research focuses on music reading, both at sight and after study. Successful readers tend to read ahead in the music score and take in marks that provide expressive information to the performer. Points of fixation (moments in time when the eye pauses on a certain point in the music) tend to be shorter among more expert musicians (Furneaux & Land, 1999; Goolsby, 1994a, 1994b; Penttinen, Huovinen, & Ylitalo, 2013, 2015). Where the eye focuses (and for how long) demonstrates how the performer acquires information from notation; as performers gain expertise, the gaze moves more frequently through the written score. Frequent movements with shorter fixations, as exhibited by more expert musicians, are related to greater success in music reading and performance.

Not all musical scores carry the same amount or types of information. A pianist, for example, will most often read from a score with two staves, treble and bass. Pianists must read notation that indicates left and right hands performance tasks. Pianists tend to gaze and store information, move to another staff to read, and quickly reassemble the information for performance (Drai-Zerbib, Baccino, & Bigand, 2012; Furneaux & Land, 1999). Burman and Booth (2009) examined the effects of rehearsal on the effective visual field (or perceptual span) of musicians with varying ability levels. Given piano performance tasks that included single and multiple staff scores, the data suggested that rehearsal may increase this visual field to a certain extent. The positive relationship found between perceptual span and performance speed indicated that musicians may have been able to group musical patterns together as they learned, thus requiring less time and fewer instances of fixation as they scanned. That a musician's visual field may grow given time and practice (Penttinen, Huovinen, & Ylitalo, 2015) suggests the possibility that instrumentalists, given more notation information than just a single part, might be able to learn more from the score as the perceptual span increases, thus resulting in better performance. Indeed, this is what is expected of conductors. With the availability of more notation, would musicians' study during rehearsal be more informed so as to lead to improved performance and understanding? There is a clear dearth of research in this area. While much

research literature concerning sight-reading among wind and percussion instrumentalists has isolated notation as dependent variable, none has focused on multiple staff scores (Galyen, 2005).

Learning music from notation involves brain, ears, and body (Lehmann & Ericsson, 1996; Mishra, 2014). Rehearsal helps to increase the amount of notational information musicians are able to read and understand (Burman & Booth, 2009). Growth in the ability to read music enables instrumentalists to play more fluidly. Extant research focusing on the chamber or small group rehearsal process overlooks instrumental musicians' limited access to score information. Most chamber music research emphasizes the social aspects of small group learning and interaction, including examination of cooperative teaching and learning styles, team organization, group dynamics, and leadership (Gilboa & Tal-Shmotkin, 2012; Good, 2002; Good & Davidson, 2002; King 2006; Seddon & Biasutti, 2009). Information specific to rehearsing the music generally includes methods by which musicians should listen and address fundamental issues such as intonation, rhythm and tempo, etc. (Berg, 2008; Ford & Davidson, 2003; King, 2006).

That the conductor is the only person in an instrumental ensemble who has access to the score emphasizes the very need for a conductor. In adjudicated sight-reading circumstances, choral and instrumental conductors generally spend a significant portion of time giving instructions, both verbal and nonverbal, directing students' attention to musical events that will occur during performance and to which they may or may not have notation access (Casey, 1991; Yarbrough, Orman, & Neill, 2007). However, the instrumental conductor's task is exacerbated; she or he must teach about music that is visually absent from many of the ensemble musicians. Typical band scores are often written for between 15 and 30 instrumental parts that may represent four or more independent musical lines that are often performed simultaneously. The singular part from which a band musician plays represents a mere 6-7% of all musical information; the conductor has the responsibility of filling in blanks during sight reading.

As a supplement to rehearsing in the large group, band students sometimes practice their ensemble music with friends in less formal small group settings without the conductor and, therefore, the complete musical score. Because students are limited to their own parts, they must draw on their aural memories and interactions with each other to piece the score together and work towards musical unity. Chamber ensemble musicians deal with similar rehearsal challenges. Notation has rarely been considered a variable in research concerning small group rehearsal processes.

Perhaps providing more notation information from which to learn could contribute to musicians' greater understanding of musical works, supplement aural learning, and improve rehearsal processes when working in small groups. Chamber music lends itself well to testing this premise since scores are generally limited to three or four staves. The purpose of this study is to determine the effects of single versus multiple staff music notation access on wind chamber

group performance outcomes and rehearsal procedures.

Method

Participants

Undergraduate and graduate music education majors at two large universities in the US, one on the east coast, the other on the west coast, volunteered for this study which received approval from the IRBs at both institutions. Students volunteers were identified to participated as either a musician or a rater. There were two rounds of recruitment. The first was conducted to gather musicians to populate the quartets. The second was conducted to identify raters. Recruitment occurred via verbal and email invitations from undergraduate and graduate music education courses. Informed consent forms were collected from participants in both groups.

Musician participants were included if they were music education majors who had at least one semester of instruction on a secondary wind instrument. Thirty-six (36) student musicians were included to form nine quartets with various instrumentation. Rater participants were recruited in the second phase of the project to listen to and rate the chamber group performances. Rater participants (n = 70) were eligible to volunteer if they had not already contributed to the project as a musician. Raters were at least first semester sophomores in their music degree program to ensure a foundation of collegiate music degree instruction.

Performance Music Stimuli

Two musical examples were used. Each was considered to be medium level difficulty, accessible enough so those with developing instrumental skills would have a certain level of success. Both examples were investigator-arranged quartets. Example A was a quartet arrangement of the lively full band work, *Blue Ridge Reel* (Balmages, 2013), pitched in Eb major using cut time. Articulations were generally detached, phrase shapes were obvious, lines were polyphonic at times, and dynamics ranged from *mp* to *ff*. Example B was a lyrical arrangement of the folk song ballad *Shenandoah*, pitched in Bb major using common time. Articulations were generally legato, phrase shapes were obvious, lines were mostly homophonic, and dynamics ranged from *pp* to *mp*. Instrumental ranges for both selections were well within the guidelines for works of medium difficulty and were accessible to all musicians. Rhythmic units were also accessible, particularly for these collegiate level volunteers. Both examples were considered equivalent in terms of technical and expressive demands.

All staves of each quartet were transposed for any instrument possibility. Single staff sheet music was generated for each part. Additionally, multiple line (four staff) scores

were generated for each instrument combination based on musician participant availability in scheduling. Each example was presented to quartets in one of two conditions: single staff or multiple staff notation. In the single staff condition, they saw only their part, which, of course, is the most common way of reading for instrumental musicians. In the multiple staff condition, all had access to the entire score.

Performance Recording Sessions

Student musicians were emailed instructions prior to meeting and were read at the outset of each recording session. Quartets entered the recording space and sat in a designated chair. One performer was appointed group leader and had the responsibility of starting the group in performance. Musicians were told that we were interested in how notation access affects performance outcomes. One of the music selections was placed face down on the stand in front of each musician. Examples A and B were presented to the quartets in alternating order. Notation condition was also alternated. For example, one group would begin with Example A – single staff condition and follow with Example B – multiple staff condition. The next group would begin with Example B – single staff condition and follow with Example A – multiple staff condition.

The entirety of each session was audio and video recorded. Musicians silently reviewed the music for one minute. They were not permitted to talk to each other or play their instrument. Then, the leader began the performance. Following sight-reading, quartets had a three-minute rehearsal period during which they were permitted to use any technique except looking at each other's music. Following rehearsal, the leader once again began the group who performed the work a final time. After the first work was complete, the second was distributed and the process was repeated. Each work was a maximum of 1'30". Silent music review for each work was 1 minute. Rehearsal for each lasted 3 minutes. Instructions and time for questions lasted approximately 5 minutes. Recording session length, therefore, was generally 15-20 minutes, providing time for instrument assembly, warm up, and disassembly.

Sessions were video-recorded using a digital Sony Handycam HDR-PJ430. Audio capture was collected on the digital video in addition to a TASCAM DR-40 and two external microphones. Audio capture separate from video allow for enhanced quality and kept us from having to separate audio from video subsequent to recording.

Stimulus Recording Preparation

Audio recordings derived from quartet performances were extracted from the master file and saved as separate files (n = 36). A 30-second segment following the statement of the first complete phrase was extracted from each recording. This allowed quartets a short time to get a feel for the work and provided the best indication of their performance. These segments became the examples that rater participants subsequently heard. Nine quartets provided two performances of each piece, one sight reading and the other rehearsed. Four 30-second excerpts for each

quartet were compiled for each of the nine quartets. This resulted in a total of 36 excerpts total, 18 sight reading and 18 rehearsed. Examples were randomly organized onto a master file (created in GarageBand and saved as an mp3 file), which included instructions, a practice example and numbered identifiers. A second master recording was generated and used another random order to control for order effect.

Performance Rating Sessions

Rater participants were assigned to Random Order 1 or 2. Rating sessions were held in large group settings using a room sound system. Ratings sheets were provided and used a 1-10 Likert-type rating scale for each example. Instructions were included on the recording as well as rating sheets. Raters were told that they would hear 36 brief (30 sec) performances of two musical examples played by wind quartets. We instructed them that they were hearing developing musicians and to disregard issues of tone quality but focus primarily on ensemble performance as they determined their ratings. Raters were given treble clef, non-transposed scores to guide their listening and were told that each quartet was comprised of a variety of instrumentations. Listeners rated each example on issues of ensemble performance by placing a horizontal line through the 1-10 scale (1 – poor; 10 – excellent). Following instructions, raters had the opportunity to try a practice example. Questions were answered and the rating session then began. Rating sessions lasted about 30 minutes.

Results

Performance Rating Analysis

This design used two independent variables: (1) multiple staff (full score) notation and single staff (individual part) notation, and (2) sight-reading (pre-rehearsal performance) and rehearsed (post-rehearsal performance). Listener ratings of examples in like conditions were summed and analyzed in separate two-way ANOVAs to determine perception of performance effectiveness. While both musical examples were considered equivalent in terms of technical and expressive demands for the performers, each was different enough in musical content so as to justify separate analysis. Example A was lively and Example B was slower and more lyrical. Neither could be considered a faster rendition of the same type of example as the other; they were of two distinctive musical styles. Group rehearsal methods were compared through post hoc analysis of categorized verbalizations and modeling.

The 36 audio test files included performances derived from two musical examples: Example A (lively, cut time) and Example B (lyrical, common time). Each was presented in these conditions: *Single Staff Sight-Read, Single Staff Rehearsed, Multiple Staff Sight-Read, Multiple Staff Rehearsed*. The notation condition was alternated with each quartet. This resulted in test recordings that consisted of multiple renditions of each condition in the array: Example A, Sight-Read Single Staff *(n* = 4); Example A, Rehearsed Single Staff (*n* = 4), Example A, Sight-Read

Multiple Staff (n = 5), Example A, Rehearsed Multiple Staff (n = 5), Example B, Sight-Read Single Staff (n = 5), Example B, Rehearsed Single Staff (n = 5), Example B, Sight-Read Multiple Staff (n = 4), Example B, Rehearsed Multiple Staff (n = 4).

Two-way analysis of variance (ANOVA) of listeners' summed ratings of Example A performances (lively, cut time) yielded significant differences, $F(3, 316) = 30.73$, $p < 01$. A post hoc Tukey test showed that listeners' ratings were differentiated based on sight-reading compared to rehearsed, as one would expect ($M_{SR} = 20.16$, $SD_{SR} = 4.52$; $M_{RE} = 25.08$, $SD_{RE} = 4.92$). Differences based on reading condition (single or multiple staff scores), however, were not significant ($M_{SI} = 22.33$, $SD_{SI} = 5.38$; $M_{MU} = 22.90$, $SD_{MU} = 5.26$). A significant interaction was not found.

Two-way analysis of variance (ANOVA) of listeners' summed ratings of Example B performances (lyrical, common time) yielded significant differences, $F(3, 316) = 85.75$, $p < 01$. As expected, a post hoc Tukey test showed that listeners' ratings were again differentiated based on sight-reading compared to rehearsed ($M_{SR} = 20.12$, $SD_{SR} = 5.99$; $M_{RE} = 24.31$, $SD_{RE} = 5.41$). Differences based on reading condition (single or multiple staff scores) were significant in this example ($M_{SI} = 18.73$, $SD_{SI} = 4.61$; $M_{MU} = 25.69$, $SD_{MU} = 5.33$); no significant interaction was found.

For both examples, rehearsed performances were rated as being significantly better compared to sight-reading, an outcome that one would expect. Performance ratings for Example A (lively) showed no differences as a function of notation condition while performance ratings for Example B (lyrical) resulted in significant differences as a function of this factor. Performances were perceived as better when musicians were using multiple staff scores compared to single staff. Alpha level was set *a priori* at .01; at $\alpha = .05$, an interaction is indicated. It appears that both multiple and single staff performance ratings increased significantly; there was a greater increase in quality through the rehearsal process for the single staff conditions than for multiple staff.

Rehearsal Procedure Analysis

All 3-minute rehearsal sessions were transcribed. Verbalizations used by musicians during rehearsal were recorded and codified. Investigators independently reviewed transcripts. Reliability (r = .93) was determined by agreement/ agreement + disagreement. Table 1 shows verbalization frequency for musicians during rehearsals of both single and multiple staff scores. Transcript evaluation revealed five main verbalization categories: *Declaration; Evaluation; Instruction; Question; Response*. More interactions were noted when musicians rehearsed from single staff scores (372) compared to multiple lines (242). This finding was observed in each verbalization category. When using single staff scores (i.e., individual parts), musicians tended to talk to each other more during rehearsal, compared to when using multiple staff scores. In general, rehearsal discussions in both music reading conditions were distributed similarly

across main and subordinate categories with one conspicuous exception. When rehearsing from single staff scores, musicians engaged in a great deal of discussion in order to determine score information that was not visible or apparent. These subcategories are emphasized in Table 1. Here are some examples of this sort of discussion:

So, you guys don't come in until A?

Who else plays there?

That's you, too, then, right?

Wait, you have the hemiola, too?

So, who has the melody at A?

What do you have at B? ' Cause I feel like – are we supposed to be at the same time there?

Do you have eights notes in 25?

Yeah, so who has the pickup?

Table 1

Musicians' Rehearsal Verbalization Frequency

Discussion Element	Condition	
	Single Staff	Multiple Staff
Declaration		
General	1	0
Music Elements	3	2
Performance ConṬrmation	3	1
Rehearsal Procedure	2	3
Score Information (provide, confirm)	***19***	***1***
Score Use	0	1
Evaluation		
Ensemble Issues	5	10
General	29	9
Music Elements	9	10
Instruction		
Ensemble Issues	7	13
Music Elements	20	20
Performance	19	16
Rehearsal Procedures	28	12
Score Information	***4***	***1***
Question		
General	5	1
Music Elements	5	6
Score Information	***31***	***0***
Performance	4	3
Rehearsal Procedures	36	29
Response		
Declaration	0	3
Evaluation	17	12
General	6	0
Instruction	32	35
Performance, General	11	4
Performance, Music Elements	3	6
Score Information (provide, confirm)	***61***	***0***
Question	11	44

Discussion

Tools for music learning, like learners, are ubiquitous and varied. Providing access to the best tools to help learners achieve musical success seems obvious. When performing in an instrumental group, particularly a large ensemble such as a wind band, the musician has a few key tools at his or her disposal. The use of the ear in developing performance skills is essential; reading notation is, of course, indispensable. Yet the singular part from which instrumental musicians in large ensembles must operate is but a small slice of the full picture. It becomes the conductor's responsibility to help musicians, who are blind to the entirety of the written musical work, make sense of the music through intelligent rehearsal processes.

While it would be unwieldy for musicians in large instrumental ensembles to perform from full scores, the provision of more notation information could be considered an additional tool by which musical success might be earned. This study demonstrated that musicians in small groups were quickly able to rehearse musically and focus on expression when there was access to musical material beyond their own individual part. Although only small performance differences were demonstrated (performance outcomes of the lyrical work were slightly better when musicians read from full scores compared to single staff parts), the availability of notation as a factor in rehearsing corroborates data shared by Wurtz, Mueiri, and Wiesendanger (2009).

Data from this study did not provide evidence of the scope of the musicians' visual field or how they scanned the music during sight-reading and rehearsed performance; the scant differences in performance outcomes due to notation condition suggest that these factors may have been relatively similar among the participants. Speculation that instrumentalists with full score access might be able to derive more from notation as perceptual span increases would be more successfully investigated by isolating eye movement and fixation. Research in this area would enrich the extant literature which currently focuses on single-staff reading or multiple staff reading as related to piano scores. Eye movement and fixation during sight-reading and rehearsed performance would likely reveal information concerning choices that instrumentalists make while reading under single and multiple staff conditions, thereby providing greater details as to how musicians attend during the reading process. With its inherent complexities (Ahken, et al., 2012; Gunter, et al., 2003), greater understanding of music reading by wind instrumentalists, at sight and in rehearsed performance, may help music educators in developing better methods for teaching music reading. Interested in determining if notation condition would have an immediate behavioral effect that would be manifested in performance outcomes during sight-reading and after time in rehearsal, it became clear that reading conditions had a much greater effect on processes of independent (i.e., without teacher intervention) rehearsal. The question of effects on sight-reading and rehearsed performance are yet unanswered; eye movement investigation may give further information.

Musicians were largely influenced by notation availability during rehearsal. When reading from full scores, the rehearsal focus was markedly different compared to rehearsals from

single staff parts. Musicians could view all musical information such that the preponderance of rehearsal time was spent focused on developing a musical performance. This stood in stark contrast to the use of rehearsal time in the single staff conditions and supports the relationship between notation information, perceptual span, and rehearsing (Burman & Booth, 2009). This study can be considered a microcosm of the larger ensemble experience. It calls into question whether or not more visual music information would be useful in large ensemble circumstances. These findings suggest that it might.

Some results were expected. Rehearsed performances were generally better than sight-reading performances regardless of notation condition. Reading condition did not appear to be a mitigating factor in sight-reading performance outcomes, suggesting that, although multiple staff scores provided more information to musicians, they may not have accessed that information during sight-reading. As we did not collect information regarding musicians' processes in preparation for sight-reading, it is not clear as to whether musicians took advantage of this additional information during the study period prior to initial performance.

Notation condition did not appear to factor into listeners' perceptions of performance effectiveness in the rehearsed performances of Example A (the livelier work) but was a factor in perceptions of the rehearsed performances of Example B (the more lyrical work). This result may reflect: (a) tacit determinations made by performers concerning the wisest and most beneficial way to use time in the rehearsal process, and (b) the amount of new musical information posed by each musical example. In reviewing rehearsal interactions, we found that when working from single staff scores, musicians tried to focus on musical issues as often as when working from multiple staff scores, but they also spent a significant amount of time trying to uncover score information from the others, presumably to make sense of the work and aid the rehearsal process. In many ways, this parallels conductors' time usage during adjudicated sight-reading episodes (Casey, 1991; Yarbrough, Orman, & Neill, 2007). Chamber ensemble musicians, when rehearsing in the single staff condition, verbally helped each other to determine score information for each other as a conductor might with a full ensemble. When working from multiple staff scores, musicians seemed to use information from the full score, spending the preponderance of rehearsal time discussing and practicing issues that were directly related to performance outcomes.

Even though discussions in the rehearsals were characterized in this way, differences between sight-reading and rehearsed performances were only evident in Example B. Example A, though clearly attainable to college music majors, was a fast, busy work of a polyphonic nature, replete with challenging rhythms, crisp articulations, and interplay between the parts. Example B, on the other hand, was more linear, homophonic, and articulations were generally legato. The tempo was slower; time could be afforded to the musician for interpretation and, if so inspired, glancing at parts in the score other than their assigned part. Rehearsal time was quite brief with only three minutes allotted. The nature of musical content in Example A may have compelled musicians to focus on the most salient features that they felt needed rehearsing. That was often

confirmation of tempo, rhythm, meter, and ensemble alignment. By contrast, in rehearsals for the B example discussions were of blend, balance, dynamics, and expression.

Presenting musicians with multiple staff scores may have some benefits, depending on the nature of the musical tasks. With slower, more lyrical and linear works, full score access enabled chamber group musicians to readily view and understand their role in the performance, allowing them to use rehearsal time to fortify ensemble performance matters. If rehearsal time is increased, we may have seen better performance outcomes for Example A. There may have been too much musical information for the full score to be helpful in such a short rehearsal period.

The use of full scores would be quite unmanageable for large ensembles. However, findings from this study indicate that there may be some benefit to providing instrumental musicians notation information that goes beyond the single staff. In much the same way cues function, so, too, may the inclusion of greater score information such as was used here. The use of cues signal musicians as to what is happening in the music prior to making an entrance, for example. They help players keep their place when faced with many rests or repetition. With technology (and the support of composers and publishers), students' visual references may be bolstered and structured for more efficient and effective rehearsals.

Finally, these musicians worked in chamber groups. The benefits of the small ensemble experience often enable greater musical independence and higher order thinking, skills that can be transferred into the large ensemble setting. The ability to work in a small collective in which every musician has access to all music information may improve how musicians think about and play within group music-making settings. If that is the case, then perhaps conductors can spend more of their finite rehearsal time focused on expressive and beautiful music making compared to "score teaching". The musicians in these quartets, when faced with limited notation and no conductor, had to rely on interactions with other musicians to "score mine" since "score teaching" was not possible. Time is on our side? Perhaps to Mick Jagger but rarely to a music educator. Using rehearsal time efficiently may lead to better musical outcomes. Data from this study are compelling and, of course, require greater inquiry.

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STUDENTS' PERCEPTIONS OF DIFFERENCES BETWEEN HIGH SCHOOL MARCHING BAND AND CONCERT BAND

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Students' perceptions of quality and outcomes in their school band experiences are often varied, and are influenced by many variables. For instance, the perceptions of a quality band experience can be influenced by teacher and conductor quality (Montemayor, 2014; Price, 2006; Silvey, 2011; Silvey & Fisher, 2015; Silvey & Koerner, 2016; VanWeelden & McGee, 2017), conductor and ensemble reputation (Moder, 2019), competition ratings (Austin, 1988, 1990, 1991; Price, 2006), and perceived difficulty and quality of music performed (Sheldon, 2000). Furthermore, influences on the perceived quality of a band extend to social experiences such as a creating a sense of cohesion, developing self-esteem, and a belief in working together to solve problems (Adderley, Kennedy, & Berz, 2003; Hewitt, 2015; Kelly & Juchniewicz, 2009; Matthews, 2017, Moder, 2019; Morrison, S. J. 2001).

Two common but different experiences among many school band programs are marching band and concert band. Though both ensemble-types are performance-based, and experiences in these ensembles are designed to develop and demonstrate musical skills and concepts, researchers have suggested that students perceive the value and benefit of these ensembles differently (Gouzouasis & Henderson, 2012). The results from previous studies support the differences in perceptions, but are somewhat conflicting. For instance, among the perceived benefits in concert band include the development of musical expression (Price & Chang, 2005), sense of pitch (Elliott, 1974), and general musical concepts and technique, (Austin, 1988; Kelly, 1997; Tan, 2015). Other researchers have found that students believe marching band provides more educational and musical value than concert band (Austin, 1990, 1991; Hanshumaker, 1956; Hines, 1995; Howard, 1994; LaRue, 1986; Matthews, 2017). Interestingly, in a study by Schmidt (2005), students perceived both ensembles as valuable, but only when perceived individual success was achieved in mastery of musical skills.

In a related study, after surveying 971 band students from twelve contest-active bands in Ohio, Indiana, Illinois, and Kentucky, Rogers (1984) revealed that eighty percent of the participants indicated they would rather perform solely in competitive marching band than non-competitive concert band if they had to choose. Rogers suggested both musical and social aspects contributed to this preference. Additionally, researchers (Gouzouasis & Henderson, 2012; LaRue, 1986; Rogers, 1984) have suggested students perceive that marching band enhances the learning process, motivates students to concentrate more, provides a unique and positive social experience, generates enthusiasm to attend class, helps students to become more respectful, motivates students to practice, teaches a variety of musical styles, improves instrument technique, and improves overall musicianship more so than concert band.

Students' perceptions of benefits in concert band and marching band experiences, when taken separately, seem to have some common ground as well as points of disparity. Previous researchers (Austin 1988; Burnsed & Sochinski, 1983; Rogers, 1982, Price, 2006; Schmidt, 2005) have called for additional investigation concerning the effects of band participation on the development of musical skills and attitudes. It might be valuable to ask high school musicians to provide information regarding the perceived benefits and value of both marching and concert band experience. The findings from this type of study could be beneficial to instructors who are seeking to maximize diverse learning outcomes in two of school music programs' most common ensemble-types. Therefore, the purpose of this investigation was to compare students' perceptions of the differences between high school marching band and concert band experiences. Specifically, the following questions were addressed: (1) To what extent do high school band students perceive selected musical qualities differently between marching band and concert band? (2) To what extent do high school band students perceive social qualities differently between marching band and concert band experiences? and (3) To what extent do high school students perceive their overall music education experiences differently between marching band and concert band?

Method

Participants

Following approval from the researcher's institutional review board, high school band students attending a large university-based summer band camp were asked to participant in the study. The camp, based in the southeast United States, has operated for over seventy-five years and annually attracts students from across the country, as well as internationally. Consequently, it was assumed that students attending the camp came from multiple geographic locations, represented diverse cultural and musical backgrounds, had varying musical abilities, and varying amounts of experience.

Survey Construction and Administration

Based on previous related investigations (Cumberledge, 2016; Gouzouasis & Henderson, 2012; Kelly & Juchniewicz, 2009), the researcher constructed a two-page survey. The first page contained fifteen items regarding skills/behaviors, which students typically experience when participating in marching band. The second page contained the same fifteen items regarding skills/behaviors which students typically experience this time while participating in concert band (see the Appendix for the complete survey). The presented order of the fifteen items was the same on both pages. The skills/behaviors represented both musical and social qualities. The first page presented the instructions to complete the survey and then asked participants to use a seven-point Likert-type scale to rate the extent that marching band achieved each item with 1 (lowest/least) to 7 (highest/greatest). The second page asked participants to utilize the same Likert-type scale to answer the same questions, but now addressing the extent that concert band achieved each item.

Following the initial construction, to improve reliability, the researcher field-tested the survey using students (N= 15) from the same camp that were not used in the later full administration of the survey. The purpose of the pilot was to determine (a) if the survey's directions and items could be clearly understood, (b) if there were any problems in completing the survey, and (c) how long it would take to complete the survey. Results of the pilot were that (a) the participants expressed no problems understanding the survey's directions, (b) three items were adjusted for clarity, and (c) the survey could be successfully completed in less than five minutes.

Next, camp counselors distributed the adjusted survey to all students attending the camp during an evening recreational activity. There were no specific instructions other than students were asked to complete a survey regarding their perceptions of differences between marching band and concert band. Students were not required to participate and were asked to not provide their identity. Completed surveys were then collected for data analysis.

Results

Of the total number of potential participants (N = 171), 141 (83%) completed the survey. The responses indicated that both marching band and concert band provided important music education experiences involving both social and musical skills/behaviors. Overall, as seen in Table One, items related to more musical qualities were rated higher than items related to more social qualities. The mean scores showed participants indicated concert band provided opportunities to develop skills/behaviors perhaps related more to musical aspects. The items receiving the highest mean scores were *Helps me to learn about musical elements* (M = 6.25, SD = 1.20), *Provides important music education experiences* (M = 6.15, SD = 1.14) and *Helps me become a better musician* (M = 6.14, SD = 1.36). It is interesting that items having the lowest mean scores overall were also more reflective of musical aspects, but were found in data from responses to marching band. Participants indicated that marching band provided the least opportunities in *Helps me to learn about music history* (M = 2.54, SD = 1.83) and *Helps me learn about music theory* (M = 3.05, SD = 1.94).

Participants indicated that marching band provided opportunities for developing skills/behaviors perhaps related more to social qualities. The overall highest mean score for these items in both ensemble-types was *Helps me to bond with other band members* (M =6.32, SD = 1.36). The survey data indicated that the other items perhaps related more to social qualities were *Motivates me to perform the best I can* (M = 6.14, SD = 1.34), *Helps me feel more confident after performing with this ensemble* (M = 5.91, SD = 1.49), and *Helps me to feel good about myself after a rehearsal/performance* (M = 5.80, SD = 1.57).

Paired-samples t-test analysis (see Table One) found significant differences at $p < .05$ among all survey items with the exception of *Motivates me to concentrate more in rehearsal* ($p <$ .58) and *Motivates me to perform the best I can* ($p < .95$).

Discussion

Overall, the data from this study suggested that both marching band and concert band provided important music education experiences. However, as past researchers have found (Gouzouasis & Henderson, 2012), the current study revealed that students perceived differences between the ensemble-types. For instance, items perhaps more related to social qualities were associated with marching band, while items perhaps more reflective of musical qualities were associated with concert band. The findings relating to social qualities would support past research by Gouzouasis and Henderson (2012) and LaRue (1986) who found students believed that participating in marching band provided a unique and positive social experience. Furthermore, Matthews (2017) suggested participation in music ensembles creates a sense of cohesion and in a belief that working together to solve problems. The current findings also reflected past research (Austin, 1988; Elliott, 1974; Kelly, 1997; Price & Chang, 2005; Tan, 2015) suggesting students perceived concert band developed musical qualities more than marching band.

Although group accomplishments were apparent in the responses, individual perceived achievements were also found related to both ensemble-types. Responses demonstrated that concert band was perceived to help participants become better musicians and develop better technique, while participants perceived a better sense of self and were more confident after participating in marching band. These survey items were more reflective of the influence on individual self-esteem through participation in both ensemble-types.

T-test analysis showed participants perceived concert band provided more opportunities in music education as indicated in the item *Provides important music education experiences*. This finding contradicts past findings that showed students perceived that marching band had more educational and musical value, and enhanced the learning process more so than concert band (Austin, 1990, 1991; Hanshumaker, 1956; Hines, 1995; Howard, 1994; LaRue, 1986). Still, findings in the present study do support previous research that concert band is perceived to provide opportunities that help develop a variety of musical skills (Elliott, 1974; Kelly, 1997; Price & Chang, 2005; Tan, 2015). While these data do not suggest that concert is better at providing music education instruction, it may suggest that student's perceived that instruction is more related to education and thus may influence the outcomes of their experiences.

Regarding motivation, both ensemble-types appeared to motivate participants in the current study. Curiously, students perceived concert band motivated them more to practice but there were no significant differences between the ensemble-types in being motivated to concentrate in rehearsals or to be the best performer they could be. Based on the study's mean scores, it appears that both ensemble-types motivate students, but having knowledge of the different types of motivation experiences may help teachers to better plan instructional strategies.

Previous research has shown that many variables may influence students' perceptions of ensemble value. In the current study, it is possible that the type of ensemble that respondents

either had the most experience with, or preferred, could have influenced their responses. For instance, while the music camp from which the respondents were selected focused on concert band experiences, it was assumed that high school students also had marching band experience. Consequently, the focus of the camp could have influenced responses. Additionally, no data were collected regarding possible differences between years of musical experience, gender, or cultural background. These variables may provide additional information and could be investigated in future studies.

It is possible that individual directors may have a major influence on students' perceptions for both ensemble-types. For example, how the ensembles are presented through a school curriculum, the amount of time spent in a specific ensemble, and varying financial support could create a perception of value and importance. However, given the assumed broad cultural and musical diversity of participants in the current study it is conceivable that these variables were teased out of the responses to some extent. Certainly, this is another area for future research.

Further caution should be exercised when generalizing the results of the current study to broader populations. It is possible that student responses simply reflected the directors' biases rather than providing their own true perceptions. However, because responses where collected outside of the students' actual band rooms, and that students came from a wide diversity of situations, the music camp setting may provide a more independent response. Still, caution should be taken, as director influence on student responses may be stronger than anticipated

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Additional caution should be taken when considering the nature of the survey itself. For instance, students were first asked to respond to the items as they related to marching band. Thus, presentation order could have influenced the responses. Furthermore, caution should be exercised due to the potential ambiguity of some of the survey items, particularly items the researcher considered perhaps more musical and more social in nature. The ambiguity of these categories could result in different interpretations of these conclusions.

It seems clear that participants in this study perceived that both marching and concert band offer opportunities for both musical and social growth. This conclusion may reflect group and individual development. Thus, it may be concluded that students perceive value in both ensemble experiences. Consequently, findings from this study may encourage band directors to offer marching band and concert band at the same time in order to optimize learning outcomes. Programs organized by individual marching band and concert band "seasons" may be diminishing opportunities for maximum student development. Furthermore, findings from this study may help music educators to better prepare instructional techniques and learning goals to fit the expectations of students that are unique to the ensemble-type, thus providing additional motivation to participate in specific curricular experiences.

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Appendix
Complete Survey

This survey concerns a comparison of marching band and concert band experiences.

Please rate (by circling the appropriate number) each band-type on the extent each achieves the stated issue from 1 (lowest/least) to 7 (highest/greatest). Be sure to answer the questions on both sides.

Band Type: MARCHING BAND

Provides important music education experiences	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Motivates me to practice more	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Motivates me to concentrate more in rehearsal	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to learn about musical elements (e.g., dynamics, phrasing, rhythm, blend)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Motivates me to perform the best I can	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to play better in tune	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to learn musical styles	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to listen critically	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to bond with other band members	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to become a better musician	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to learn about music history	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me learn about music theory	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me develop better technique on my instrument	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to feel good about myself after a rehearsal/performance	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me feel more confident after performing with this ensemble	**1**	**2**	**3**	**4**	**5**	**6**	**7**

PLEASE TURN OVER AND COMPLETE THE OTHER SIDE

Band Type: CONCERT BAND

Provides important music education experiences	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Motivates me to practice more	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Motivates me to concentrate more in rehearsal	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to learn about musical elements (e.g., dynamics, phrasing, rhythm, blend)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Motivates me to perform the best I can	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to play better in tune	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to learn musical styles	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to listen critically	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to bond with other band members	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to become a better musician	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to learn about music history	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me learn about music theory	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me develop better technique on my instrument	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me to feel good about myself after a rehearsal/performance	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Helps me feel more confident after performing with this ensemble	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Thank you!

Table One

Results of Analysis for Marching Band and Concert Band Responses

	Marching Band		Concert Band		Paired Samples T-Test	
Survey Item	*Mean*	*SD*	*Mean*	*SD*	*t*	*p*
Provides important music education experiences	5.54	1.45	6.15	1.14	-5.25	.00
Motivates me to practice more	5.21	1.67	5.66	1.46	-2.81	.00
Motivates me to concentrate more in rehearsal	5.68	1.51	5.76	1.42	-.55	.58
Helps me to learn about musical elements (e.g., dynamics, phrasing, rhythm, blend)	5.08	1.64	6.25	1.20	-7.85	.00
Motivates me to perform the best I can	6.14	1.34	6.14	1.19	.05	.95
Helps me to play better in tune	4.60	1.86	5.92	1.36	-7.42	.00
Helps me to learn musical styles	4.72	1.74	6.04	1.35	-7.80	.00
Helps me to listen critically	5.53	1.59	6.04	1.24	-3.53	.00
Helps me to bond with other band members	6.32	1.36	5.16	1.62	-7.95	.00
Helps me to become a better musician	5.51	1.59	6.14	1.36	-4.36	.00
Helps me to learn about music history	2.54	1.83	4.18	1.86	10.37	.00
Helps me learn about music theory	3.05	1.94	4.87	1.66	10.52	.00
Helps me develop better technique on my instrument	4.89	1.80	5.70	1.54	-5.05	.00
Helps me to feel good about myself after a rehearsal/performance	5.80	1.57	5.49	1.52	2.12	.03
Helps me feel more confident after performing with this ensemble	5.91	1.49	5.63	1.50	1.94	.05

CONTRIBUTORS

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