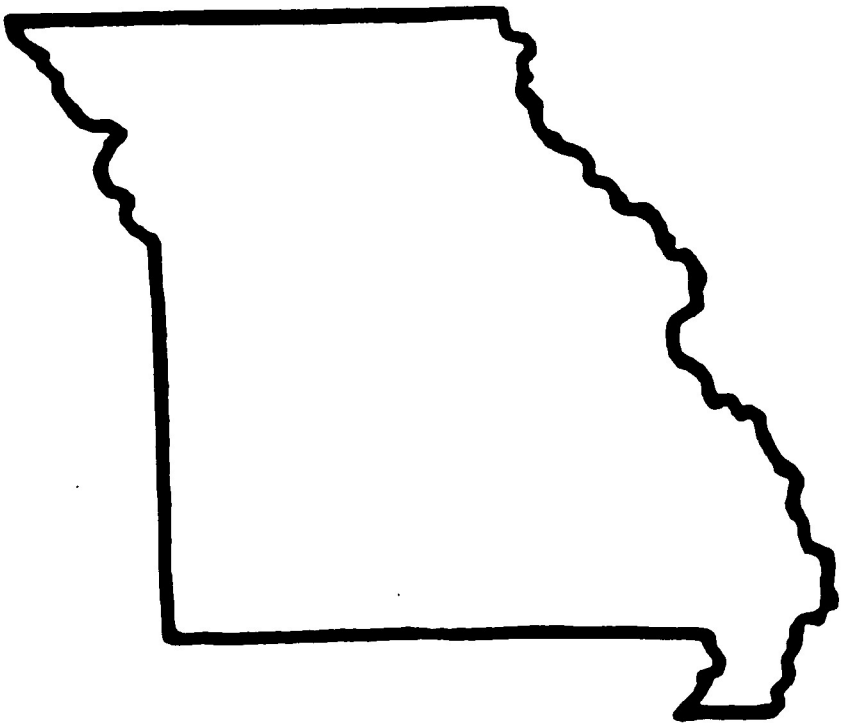
MISSOURI JOURNAL OF RESEARCH IN MUSIC EDUCATION



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MISSOURI GRADUATE STUDENT ABSTRACTS

PREFACE

The *Missouri Journal of Research in Music Education*, published by the Missouri Music Educators Association, is devoted to the needs and interests of teachers of music in Missouri and the nation. This issue is the twenty-ninth.

The members of the editorial committee are grateful to those readers who have written suggestions concerning the content of past issues and request that comments and suggestions again be sent to the editor concerning the content of this issue. We strive for a reasonable balance among music theory, history, philosophy, aesthetics, and pedagogy.

We express our deep gratitude to the Missouri Music Educators Association for their financial support to make it possible to continue to publish the *Missouri Journal of Research in Music Education.*

The Editorial Board

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ELEMENTARY CHILDREN'S ABILITY TO RECOGNIZE MAJOR/MINOR MODE

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Correct identification of major/minor mode is generally considered to be one of the basic skills in the elementary music curriculum. Aural recognition of major/minor mode, however, may be more difficult for children to master than the visual and written presentations in most elementary music books. While many teachers and writers use non-musical terms such as "happy" and "sad" to facilitate aural identification of modes, (Machlis, 1984; Forney, 1990), one might wonder if the use of non-musical terminology confuses rather than helps children understand different modes.

It is well-documented in recent research that children can hear elements and changes in music but are unable to express correctly what they are hearing without instruction in music terminology (Flowers, 1984; Hair, 1981; Hair, 1982; Hair, 1987; Kostka, 1984; Pflederer and Sechrest, 1968; Van Zee, 1976; Zimmerman, 1971). Of specific interest to this investigation was whether use of non-musical or musical terms were more helpful to children in identification of modes.

This study consists of two related parts, each conducted at the same school using approximately the same population of students, with the studies carried out one year apart. Study 1 was designed to examine whether identification of major and minor modes is more accurate when paired with non-musical verbal cues than when students simply learn the modes by using the terms "major" and "minor". Most research on children's discrimination abilities has tended to focus on one element at a time; however, since music involves simultaneous interactions of several elements, the second part of this investigation (Study 2) was designed to learn whether aural discrimination of mode would be affected if presented concomitantly with two other elements (tempo and register).

In a series of studies investigating responses of preschoolers to elements of music, Sims (1988; 1991) reported that while pre-school subjects did not appear to be ready for tasks requiring attention to more than one music concept, this ability might be acquired through maturation and experience. Study 2 was intended to examine this question with older students (elementary); specifically whether aural identification of major and minor sounds is affected by the musical elements, tempo and register.

The questions of experimental interest to these two studies were:

1. Will non-musical verbal cues facilitate children's ability to identify major and minor more than the use of traditional terminology?
2. Will there be a difference in children's ability to identify each mode when major and minor chords are presented along with changes in tempo and register?
3. Will age be a significant factor in children's aural discrimination of modes?
4. Which, if either, of the added elements (tempo and register) will most strongly affect the students' ability to discriminate major and minor modes?

STUDY 1

Procedures

Twenty-four intact classes from a suburban elementary school in Austin, Texas, served as subjects for this study, with equal division into grades three, four and five. The classes were taught by two music specialists, who administered the instructions and tests during regular music classes. Since both teachers followed the same lesson plans and procedures, all classes had received similar instruction in classroom music.

The subjects (N=523) were divided into two equal groups comprised of four classes in each grade (Group A; n=268, Group B; n=255). All procedures and evaluations took place during equal and predetermined portions of the regularly scheduled music classes.

The investigation consisted of two brief (10 minute) periods of instruction on consecutive days of music classes. During each instructional period, the teacher asked the students to listen to twelve sets of triads, played first as broken chords and then as intact chords. The chords were randomly divided into six major and six minor. Group A heard the teacher label each chord as "major" and "minor" prior to playing it, while Group B heard additional non-musical cues, designated to be "bright" for major and "dark" for minor. These cues were selected as alternates for "happy" and "sad" with which most children are familiar.

Following two days of practice, a test was administered on the third day with all classes following identical testing procedures. Twelve triads, pre-recorded on an electronic keyboard, were played for the subjects, in the same manner as the practice presentations, but in a different order. Subjects were asked to write the words "major" or "minor" following each chord and were allowed adequate time to complete their answer before going on to the next question.

Results

Data were the number of correct responses on the posttest for each student. Means were calculated for each class, and Table 1 presents the averages per class for each grade.

Table 1

Mean Scores per Class According to Grade Level (12 Possible Correct)

Grade:	Three	Four	Five
	6.65	9.59	9.04
	7.86	7.04	7.46
	9.26	8.25	8.45
	8.61	9.08	9.38
	8.94	8.68	8.34
	7.94	9.46	8.00
	10.23	7.19	8.00
	8.60	8.14	9.14

A Kruskal-Wallis One-Way Analysis of Variance test indicated that there was no significant difference among the mean scores for each grade level ($H = .0\,[3,24]$, $p > .99$).

A comparison of mean scores for each of the two experimental groups, regardless of grade level, is shown in Table 2.

Table 2

A Comparison of Mean Scores Between Conditions

Condition A Musical Terminology	Condition B Non-musical Terminology
6.65	8.94
7.86	7.94
9.26	10.23
8.61	8.68
9.59	9.46
7.04	7.19
8.25	8.14
9.08	8.34
9.04	8.00
7.46	8.00
8.45	9.14
9.38	9.01

A Mann-Whitney U Test was performed on the ranked means, and results of this test indicated no significant difference $p > .50$ between the means of Group A and Group B ($U = 69$).

STUDY 2

Procedure

The data for Study 2 were collected following a two-week period of instruction during which children (N=396) in grades three, four and five (same school as Study 1) practiced hearing and identifying major and minor modes. This instructional period was intended to ensure that the students understood the correct music terminology prior to testing. As in Study I, examples included major and minor triads, played first melodically and then harmonically. The students also heard entire songs played and labeled as major and minor tonality.

During regular classes, two music specialists administered a listening post-test to all students. The test was pre-taped so that all children heard the same examples: six major and six minor chords randomly paired with high, medium and low registers and randomly assigned to a slow or fast tempo. A total of twelve items were included. Thus, each item was a combination of three music elements (mode, tempo and register). Table 3 presents the order and combination of the test examples heard by the children.

Table 3

Combinations and Order of Twelve Test Items

	Mode	Register	Tempo
1.	major	high	slow
2.	minor	medium	fast
3.	major	medium	fast
4.	minor	low	slow
5.	minor	high	fast
6.	major	medium	slow
7.	minor	low	fast
8.	minor	medium	slow
9.	major	low	fast
10.	minor	low	slow
11.	major	high	fast
12.	minor	high	slow

Every combination of the three variables was used, and both teachers used an identical tape for their classes. Tempos selected were mm=60 (slow) and mm=120 (fast). For identification of register, the examples were divided into and played within three separate octaves; low = C2-C1; medium = C - c and high= c1 to c2. Following each example, students were told to write either "major" or "minor", as in Study 1, and the number of correct responses for each student was tabulated.

Results

Total correct responses were counted and percentages of correct answers were compared across grade levels. A Kruskal-Wallis One-Way Analysis of Variance indicated no significant difference in ability to identify correctly the chords among the three grades ($H = .6$ [3,24], $p > .70$).

Each combination of variables was separated into "major" and "minor" categories in order to compare the effects of tempo and register for each chord. Table 4 shows the subsets of elements, and the number of correct responses for each across all grade levels.

Table 4

Differences Between Correct Scores for Major and Minor when Other Variables Remain Constant (All Grades: N=24 classes)

	Major	Minor	Difference
high-fast	330	186	144
medium-fast	292	346	54
low-fast	227	312	85
high-slow	357	222	135
medium-slow	245	218	27
low-slow	176	325	149

Analysis of the differences between major and minor, when the other two variables were matched, revealed a significant difference (χ^2= 133.58, [5], p.<001).

Table 5

Comparisons of Total Correct Responses for Each Mode Across Register and Tempo Categories

	Major	Minor
Slow		
high	357	222
medium	245	218
low	176	325
Total:	778	765
Fast		
high	330	189
medium	292	346
low	227	312
Total:	849	844
High		
slow	357	222
fast	330	186
Total:	687	408
Medium		
slow	245	218
fast	292	346
Total:	537	564
Low		
slow	176	325
fast	227	312
Total:	403	637

Separate χ^2 analyses of these subsets showed that significant differences in correct identifications of major and minor were found when register and tempo were paired (χ^2= 125.71, [5], p <.001). Interestingly, major-high range examples received the highest number of correct responses, followed by minor-low range combination; major-low and minor-high received the lowest scores.

Visual comparisons of the total correct responses for each mode, separated by register and tempo, may be seen in Figures 1 and 2.

FIGURE 1

Correct Identification of Major/Minor Mode According to Tempo

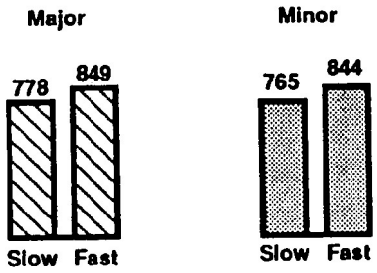
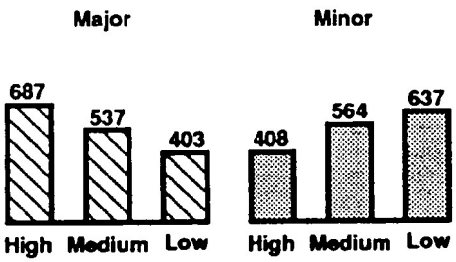


FIGURE 2

Correct Identification of Major/Minor Mode According to Register



It would seem, from these analyses, that when tempo is combined with mode it has little effect on children's ability to identify correctly the two modes. However, when register is paired with mode, however, appears to influence children's perception of that mode.

Discussion

Both of these studies were undertaken with the intent of determining how elementary children hear major and minor chord sounds and how instruction in mode (chord) identification might be facilitated. Study 1 showed that age did not play a significant part in how accurately the students identified major and minor. Further results indicated that children can learn to identify major and minor chords without the help of additional, non-musical terms. Possibly the addition of non-musical visual and verbal cues may

confuse children when cues are used as a "crutch" to identify an element of music. It is entirely possible that children might enjoy using non-musical descriptors to express emotions and feeling, but this may not be an accurate or efficient method of teaching major and minor chord sounds.

Since students in Study 1 did not score exceptionally high in either of experimental condition, a strong possibility exists that a different variable might be found to facilitate accurate identification of major and minor modes. Perhaps repeating the task over larger time periods or using variable schedules of instruction might be more effective than the brief period of instruction as was utilized in these two experiments. A second possibility is that children received limited information from the triad/chord stimulus, and would have performed better had they heard longer examples of music. In the experience of the two researchers, children often attend to other, more obvious aspects of music such as tempo and timbre when listening to longer segments of music. For this reason it was decided to isolate the modes and present them in smaller chord-triad examples.

The results of Study 2 warrant closer investigation. Elements of music are often discussed and taught without combining them with other elements. If, as the results of this study indicate, mode may be confused with register (if a song is high, it might be identified as major, for example), then perhaps educators and researchers might determine a sequence of element combination and identification becoming progressively more difficult as the children mature.

It was interesting to note that subjects' age was not a factor of importance in either study. One might expect a difference to exist between third and fifth grade due to maturation (Petzold, 1965), but this was not the case in the present investigations. It is speculated that since identification of major and minor modes appears to be independent of maturation in the upper elementary years, this could be an advantageous time to teach this concept.

The results of these two studies suggest that caution should be used by educators when presenting modes to children; responses may be indicating the ability to discriminate something other than major/minor sounds. Further research in mode identification and efficient means of instruction at the elementary level would seem to be valuable.

REFERENCES

Flowers, P.J. (1984). Attention to elements of music and effect of instruction in vocabulary on written descriptions of music by children and undergraduates. *Psychology of Music, 12*, 17-24.

Forney, K. (1990). *The Enjoyment of Music: Listening and Study Guide: Sixth Edition*, New York: W.W. Norton & Company.

Hair, H. (1981). Verbal identification of music concepts. *Journal of Research in Music Education, 29 (1)*, 11-21.

Hair, H. (1982). Microcomputer tests of aural and visual directional patterns. *Psychology of Music, 10* (2), 28-31.

Hair, H. (1987). Descriptive vocabulary and visual choices: Children's responses to conceptual changes in music. *Bulletin of the Council for Research in Music Education, 91*, 59-64

Kostka, M. (1984). *A comparison of three approaches to music listening for fourth and fifth grade students.* Paper presented at the Fifth National Symposium for Research in Music Behavior, Fort Worth, Texas.

Machlis, J. (1984). *The Enjoyment of Music : Fifth Edition*, New York: W.W. Norton & Company.

Petzold, R. (1965). *Auditory perception of musical sounds by children in the first six grades.* Washington, D.C., U.S. Office of Education, Project 5-1212.

Pflederer, M. & Sechrest, L. (1968). Conservation type responses of children to musical stimuli. *Bulletin of the Council for Research in Music Education, 13*, 19-36.

Sims, W.L. (1988). Movement responses of pre-school children, primary grade children, and pre-service teachers to characteristics of musical phrases. *Psychology of Music, 16*, 110-127.

Sims, W.L. (1991). Effects of instruction and task format on preschool children's music concept discrimination. *Journal of Research in Music Education, 39*, 298-310.

Van Zee. N. (1976). Responses of kindergarten children to musical stimuli and terminology. *Journal of Research in Music Education, 30*,151-161.

Zimmerman, M.P. (1986). Music development in middle childhood: A summary of selected research studies. *Bulletin of the Council for Research in Music Education, 86*, 18-35.

CHORAL DIRECTORS' PERCEPTION OF CHORAL ERRORS

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The purpose in choral and instrumental rehearsals is to gradually eliminate imperfections in musical performance. In order to facilitate progress toward performance standards, conductors must listen to the ensemble to evaluate the level at which learning must begin. As the conductor modifies the sound of the ensemble, it is expected that the performance will eventually resemble the conductor's impression of the music. Successful analyses can be made by the ensemble director when he is able to hear musical aspects of the performance. He then formulates a plan based on what he has heard, and by following some type of hierarchical design, he systematically changes the sound until it becomes a facsimile of his aural impressions.

What do directors hear in musical performances? If they can hear errors, can they locate them in the score so that proper rehearsal procedures can be established? Are directors able to recall the things to be corrected after the performance so that they may rehearse incorrect passages? What is the hierarchy addressed by ensemble directors to indicate the most consequential musical flaws to be corrected? These and other questions regarding conductors' perceptions and decision making abilities are consequential to the issues they choose to address in rehearsals.

College choral methods classes expose some students' lack of ability to hear errors in performance. If students hear errors, they frequently cannot identify the voice part where the error occurred, and often waste time in rehearsing the other voice parts. Such occurrences have prompted investigations in aural error detection that support the idea that improvement can be realized through practice. Researchers have attempted to identify relationships between skills in error detection, musical abilities and experiences (Brand, 1981), and music theory components (Gonzo, 1971; Gregory, 1972; Larson, 1977). Although musical abilities and experiences seemed not to affect error detection skills, aural discrimination tasks such as sightsinging and dictation seemed to be somewhat related to these abilities. However, Larson (1977) suggested that the relationship was not strong enough to warrant the exclusion of specific instruction in error detection, and Brand (1981) supported this idea by suggesting that instruction in error detection seemed to be necessary for one to be competent in the skill.

Improvement in error detection seems to be a result of time and practice. Both programmed instruction (Ramsey, 1979; Deal, 1985) and active participation in musical experiences (Gonzo, 1971; Stuart, 1979; DeCarbo, 1982; Stwolinski, Faulconer, & Schwarzkopf, 1988) have contributed to improving abilities in this area. Gonzo's (1971) research indicated that teachers with six to ten years of experience in the classroom and those with master's degrees were able to hear errors more proficiently than undergraduate music majors. In Ramsey's (1979) study, subjects who spent more time in error detection training by participating in a longer version of programmed instruction were more proficient in the skill of error detection than those who received a shorter version. In addition to programmed instruction and in-class teaching experiences, a variety of instructional techniques have been used to improve error detection and musical

discrimination in performance techniques (Stuart, 1979). DeCarbo (1982) discovered that a podium-based format was effective in improving error detection abilities in an atmosphere that closely resembled the rehearsal environment.

In order to become proficient in detecting errors, students must learn to listen effectively to musical elements as they occur. Research by Stwolinski et al. (1988) indicated that subjects were able to identify aural errors more proficiently if they evaluated performances after having listened for errors. Aural abilities seemed to improve as subjects used this same mode of practice in task preparation. More specifically related to musical elements, Byo (1991) found that when varying timbres were programmed into homophonic and polyphonic performances of electronically reproduced compositions, subjects were able to hear rhythm errors more accurately than pitch errors. In addition, he indicated that rhythmic movement or other compositional functions might ultimately affect a listener's ability to locate errors of pitch and rhythm.

Choral and instrumental conductors use their aural abilities to evaluate performances of students with varying skills and abilities. The pacing of the rehearsal may be dependent upon a conductor's perception of errors, the personal strategy implemented in correcting errors, and the time element between the two. Although structured errors in research studies may be necessary for experimental clarity, conductors seldom hear such tidy presentations of errors. When directors listen to a performance including multiple errors, what do they hear? What do experienced conductors regard as most consequential when they hear errors in a performance? Are they able to recall these errors for correction as they conduct their rehearsals?

The purpose of this study was to examine responses of experienced choral directors in identifying errors in a choral performance. One variable for examination was the effect that following a musical score might have on the perception, identification, and recall of choral problems as opposed to listening to performances without a musical score provided. Of secondary importance was an examination of a hierarchy of consequential choral problems implied by the order in which problems were listed.

Procedure

Choral directors (N=33) in public school, college, or church choir positions volunteered to be subjects for this study. Several subjects (n=18) were drawn from registrants at a state choral directors' convention in Texas, and were tested in one of the assigned meeting rooms. At the convention, the number of subjects varied per testing, depending on individuals' attendance at scheduled meetings in the convention program. The remaining subjects (n=15) were tested individually in their respective school and church offices and in my university office. With the exception of the convention meeting room containing only one table and several chairs, all testing areas were familiar to subjects, and were thought to be devoid of distractions.

Specific areas and levels of experience included elementary, middle school/junior high, high school, college, and church. Overall, there was an average of 12.97 years of experience among the total number of subjects, and the average number of years experience at each level for subjects was as follows: (a) elementary (M = 5.58), (b) middle school/junior high (M = 4.94), (c) high school (M = 8.47), (d) college (M = 5.29), and (e) church (M = 11.13).

The stimulus audiotape developed for this study consisted of eight 30-second excerpts of four different compositions being rehearsed by 150 high school singers in a music camp setting (two excerpts from each composition). The researcher recorded four two-hour rehearsals of the group, and selected eight 30-second excerpts that included tutti performances of voice parts without rehearsal instructions. These were recorded on a cassette tape with 15-seconds of silence between each example and included excerpts from each of the following: (a) *Gloria* by John Rutter, (b) *A Red, Red Rose* by James Mulholland, (c) *Hosanna* by Rene Clausen, and (d) *Hold On* arranged by Eugene Thamon Simpson. The two excerpts from each composition were paired on the final stimulus tape, and were presented to subjects on a high quality Panasonic RX-D T680 portable stereo. This equipment was considered appropriate since the study examined general perceptions of choral errors as opposed to the identification of predetermined errors structured within performances.

Subjects were randomly divided into two groups. Group 1 ($n = 17$) followed a musical score as they listened to the examples, and Group 2 ($n = 16$) relied only on aural discrimination. A t test analysis revealed that there were no significant differences between groups as related to the number of years they had spent as choral directors at various levels of instruction.

Before playing the stimulus tape, the researcher briefly described the task as a choral conducting project, and gave specific instructions to both groups of subjects. Written instructions were provided, and subjects were instructed to follow along as the researcher read aloud. Group 1 was provided a score for each example, and instructed to follow the score as they listened. They were to listen for aspects of the performance that they would correct if they were the director of the ensemble. It was suggested that the problems might be related to pitch, rhythm, phrasing, intonation, balance, dynamics, tone quality, style, blend, diction, or other musical components. Subjects were instructed to wait until the end of the example, when they would have one minute to list at least five things they would correct in a rehearsal of the group they were hearing. Subjects were instructed that they were not to refer to the score while writing. An answer sheet with four sample responses consisting of various combinations of possible musical problems that might be heard in the examples was provided. Although subjects were instructed to list at least five problems heard in performance, the answer sheet was expanded to accommodate ten responses from subjects to maximize participation in the task. For each problem they identified, subjects were to circle the appropriate voice part(s) in which the problem occurred, and describe briefly the nature of the problem. Subjects were instructed to list the problems in the order in which they would address them in the rehearsal, and make their comments as specific and precise as possible. Subjects were then given opportunities to ask questions to clarify the task. Red brackets marked the specific portion of the score that corresponded with the excerpts they heard. They were also told to place the answer sheet on top of the score when they were writing to limit the possibility of referring to the score. Group 2 received similar instructions, but was not provided a score, and relied entirely on aural skills for error detection.

At the end of the session, subjects were asked to respond to a questionnaire that requested information regarding: (a) the levels in which the subject had served as a choral director; elementary, junior high/middle school, high school, college, and church, (b) the number of years' experience in the various levels; and (c) a list of the examples recognized from the tape.

Results

In order to establish comparisons between subjects who followed a score (Group 1) and those who relied only on aural perception for detection of errors (Group 2) in choral performances, a χ^2 test for independent samples was utilized as the primary statistical test for the study.

As subjects listened to examples, they indicated the location of the musical errors they were hearing according to voice part and provided a description of each error. For each written comment, the researcher categorized the information as an element of one of the following musical components: (a) intonation, (b) correct/incorrect notes, (c) rhythm accuracy, (d) tone quality, (e) diction, (f) dynamics, (g) balance, (h) blend, (i) phrasing, and (j) style.

Although some of the components for examination might lend themselves to interpretations resulting in the overlapping of categories, selection of category listings was determined by selecting vocabulary words that are sometimes used to describe musical performance. In order to accommodate comments written by subjects that were not specific enough to be assigned to one of the predetermined categories or were unrelated to the task, a "general" category was established. Comments of subjects in Group 1 and Group 2 were examined collectively per example, and each was coded according to a categorical component to which it referred. In addition to the comment of the error, the data indicated the voice part committing the error and rank indicating the order that subjects would address each problem in rehearsal. For each example, the distribution of voice parts was examined according to : (a) women's voices, (b) men's voices, (c) a combination of men's and women's voices, (d) and all voices (SATB or the entire ensemble). Because most subjects were able to list approximately four comments per example, perceived errors were compiled collectively regardless of categorical reference for any written statements >4.

A χ^2 test for independent samples indicated that subjects in Group 1 (n = 17) detected errors differently from Group 2 (n = 16) in Example 6 ,χ^2 (10, N = 106) = 20.29, $p < .05$, and Example 8, χ^2 (10, N = 124) = 21.1, $p < .05$. Subjects in Group 1 perceived more problems related to dynamics and ensemble balance than those who were depending only on aural skills for evaluation. Subjects in Group 2 addressed more intonation problems and more problems related to blend than those who followed a score as they listened. Results of comparisons between groups in Example 8 indicated that subjects who were not provided a score perceived more intonation and tone quality errors than those who followed a score. However, subjects who were provided a score indicated more errors concerning musical style and diction than those in Group 2. In Examples 6 and 8, both groups' responses to rhythm accuracy were absolutely equal in each example (Ex. 6, 5 errors per group; Ex. 8, 10 errors per group). In the remaining six examples, the responses of the two groups were similar. However, there was a significant distribution between groups in the total number of comments written over the eight examples, adjusted χ^2 (1, N = 947) = 5.94 $p < .05$; subjects in Group 1 (followed score) wrote more comments than those in Group 2 (no score).

Table 1 shows an overall frequency of written comments and shows the number of errors cited in each position of priority. For example, subjects in

Group 1 listed intonation as their first comment 30 times, (i.e., the choral error they would address first if they were conducting the performing ensemble). Subjects indicated errors of rhythm, intonation, and balance more often than other musical components. In general, the groups responded quite similarly, although some differences appear between groups in the General and Correct Notes categories.

Table 1

Frequency of Comments Directed Toward Categories by Rank Order and by Group Across All Music Examples

Rank Order of Comment	1	2	3	4	>4	Total
Response Category Group 1 (with score; *n*=17)						
Intonation	30	22	13	9	8	82
Correct Notes	6	4	4	1	9	24
Rhythm	34	27	20	21	9	111
Tone Quality	7	15	6	3	12	43
Diction	8	15	17	13	6	59
Dynamics	9	7	14	3	6	39
Balance	31	18	14	13	6	82
Blend	1	3	6	0	1	11
Phrasing	1	4	5	9	3	22
Style	5	9	10	4	9	37
General	5	7	5	1	5	23
TOTAL						533
Response Catagory Group 2 (without score; *n*-16)						
Intonation	35	24	17	9	10	95
Correct Notes	5	1	1	0	0	7
Rhythm	38	34	22	15	5	114
Tone Quality	13	10	20	7	6	56
Diction	10	10	10	10	2	42
Dynamics	2	4	6	2	3	7
Balance	17	20	12	10	5	64
Blend	1	5	4	1	2	13
Phrasing	4	4	1	4	1	14
Style	1	5	3	4	3	16
General	2	3	1	1	1	8
TOTAL						436

Subjects were instructed to identify voice parts where errors occurred. A total of 979 responses to errors in voice parts were recorded by subjects; almost half (462) of the responses were references to the entire ensemble (SATB); 250 comments referred to men's voices, and 198 comments referred to women's voices; relatively few (69) comments described

problems referring to unusual combinations of mens' and womens' voices (i.e., SAT, SAB, ATB, SB, AB, AT, ST, etc.).

Discussion

Results of this study indicate that, although the visual aid of the musical score seemed to affect subjects' aural discrimination of choral errors in a limited number of examples, choral directors who did not follow a score during an aural example seemed to hear the same errors as those who were provided the visual assistance. The only significant differences in responses were evident in Examples 6 and 8. Example 6 was rather slow and sustained, and subjects seemed to differentially identify errors that concerned balance and intonation. Subjects who did not use a score identified errors of intonation more than those with a score. Subjects with a score probably heard more errors in dynamics because they were looking at the score markings, whereas Group 2 was probably unaware of the marked dynamics for this unfamiliar piece. Errors in balance were noted more by subjects who were following a score. Again, it would seem that looking at a score might clarify the function of each voice part more effectively in the composition than an aural stimulus alone, thus affecting the perception of errors. Lack of familiarity with the piece might have affected perceptions of errors in balance for subjects in Group 2 because the absence of musical notation prompted minimal expectations from subjects not following a score.

Example 8 was a somewhat familiar, rhythmic spiritual in which correct execution of stylistic elements was essential. Those subjects who followed a score identified more errors in elements of style than those in Group 2. Visual cues such as syncopated passages within the score notated with accents and specific stylistic indicators might have contributed to subjects' stylistic expectations. Group 2 identified a greater number of errors related to intonation than Group 1. Subjects who were concentrating more on listening might have heard errors in pitch that they considered more consequential than stylistic factors that might have been conveyed through a printed score. Group 2 mentioned tone quality as an error more than did Group 1. Again, primary attention to aural errors heightened by the absence of the visual cue might have allowed heightened discrimination of pitch problems so that subjects concentrated intensely on choral components more closely associated with aural factors as they relate to vocal production. Group 1 probably identified more problems in diction than Group 2 because they were looking at the words on the score. It might be that without visual reminders, professional choral directors actually forget to concentrate on some aspects of musical performance.

Future research in the area of choral error detection might examine the variable of one's concentration on a particular set of voices in rehearsal to determine tendencies to unwittingly allow errors to occur in rehearsal within voice parts when their attention is focused elsewhere. In addition, comparisons of the responses of these choral directors actively involved in teaching choral music with those of choral students in higher education who have not yet encountered the professional setting might indicate discriminations of musical components that are obtained primarily through experience alone. This information might contribute to musical growth for students in college choral methods classes by determining a course content that would focus upon developing skills in error detection that are evident in professional choral directors, but are not yet developed in choral music education students.

REFERENCES

Brand, M. & Burnsed, V. (1981). Music abilities and experiences as predictors of error detection skill. *Journal of Research in Music Education, 29*, 91-96.

Byo, J. L. (1991, March). *The influence of textural and timbral factors on the ability of music majors to detect performance errors.* Paper presented at the Ninth National Symposium for Research in Music Behavior, Cannon Beach, OR.

Deal, J. J. (1985). Computer-assisted instruction in pitch and rhythm error detection. *Journal of Research in Music Education*, 33, 159-166.

DeCarbo, N. J. (1982). The effects of conducting experience and programmed materials on error-detection scores of college conducting students. *Journal of Research in Music Education, 30*, 187-200.

Gonzo, C. L. (1971). An analysis of factors related to choral teachers' ability to detect pitch errors while reading the score. *Journal of Research in Music Education, 19*, 259-271.

Gregory, T. B. (1972). The effect of rhythmic notation variables on sight-reading errors. *Journal of Research in Music Education, 20*, 462-468.

Larson, R. C. (1977). Relationships between melodic error detection, melodic dictation, and melodic sightsinging. *Journal of Research in Music Education, 25*, 264-271.

Ramsey, D. S. (1979). Programmed instruction using band literature to teach pitch and rhythm error detection to music education students. *Journal of Research in Music Education, 27*), 149-162.

Stuart, M. (1979). The use of videotape recording to increase teacher trainees' error detection skills. *Journal of Research in Music Education, 27*, 14-19.

Stwolinski, G. D., Faulconer, J., & Schwarzkopf, A. B. (1988). A comparison of two approaches to learning to detect harmonic alterations. *Journal of Research in Music Education, 36*, 83-94.

MODULATED INTENSITY DISCRIMINATION AMONG MUSICIANS AND NONMUSICIANS

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Intensity, loudness and dynamics are terms often used to describe an integral part of music acoustics, perception, and performance, respectively. Music educators regularly teach students to discriminate and perform different levels and changes in intensity. Perceiving intensity differences in music is said to begin at an early age (Bentley, 1976; Petzold, 1966).

While there is a paucity of research focused on responsiveness to intensity modulations, a clear lineage of studies has isolated specific and rather consistent findings about responses of musicians and nonmusicians to modulations of frequency and tempo. Research with frequency perception and performance has found that there is greater acuity in perceiving flatness and consequently an unwitting tendency to perform sharp (Geringer, 1978; Geringer & Madsen, 1987; Geringer & Sogin, 1988; Geringer & Witt, 1985; Madsen, 1974; Madsen, Edmonson, & Madsen, 1969; Papich & Rainbow, 1974; Salzberg, 1980).

Investigations of tempo discrimination and performance have shown that decreases in tempo are perceived more accurately than tempo increases. (Drake, 1968; Killian, 1985; Kuhn, 1974; Kuhn, 1977; Kuhn & Gates, 1975; Madsen, 1979). Consequently, performers often unknowingly rush tempi. This in turn contributes to performance errors.

Preference studies in frequency and tempo have indicated some interesting results. Musicians and nonmusicians exhibit a consistent preference for increased sharpness and fastness (Geringer, 1976; LeBlanc, 1981; Wapnick, 1980). Other studies have shown that certain variables within musical excerpts, such as melodic complexity, beat prolation, and familiarity can influence perceptions and preferences (Duke, 1987; Duke, Geringer, & Madsen, 1988; Geringer & Madsen, 1987; Kuhn, 1987; Kuhn & Booth, 1988; Wang & Salzberg, 1984; Yarbrough, 1987).

Only one study in intensity modulation is analogous to those in frequency and tempo. Geringer (1991) investigated listener discrimination of constancy or gradual increases and decreases in intensity of synthesizer music, previously recorded music excerpts, and electronic tones. Stimuli that changed intensity were modulated at the rate of 1 dB per second across 12 seconds. Musicians did not differ from nonmusicians in frequency nor latency of correct responses, and subjects correctly discriminated intensity modulation decreases sooner than intensity increases.

Few performance and preference studies have measured changes in intensity; Geringer (1980) reported that student musicians who attend to precise dynamic markings are able to perform without losing pitch and rhythm accuracy. Geringer and Breen (1975) investigated the role of intensity in musical expression and found that intensity changes are judged more important and expressive in classical music than in rock and roll. Geringer (1992) noted significantly greater changes in crescrendos than descresendos in commercially recorded choral, orchestral and piano performances.

The present study measured intensity discrimination using methods similar to those Kuhn (1974) and Madsen (1979) employed when

investigating discrimination of modulated beat tempos. However, this research was designed to test how accurately and quickly musicians and nonmusicians respond to increases, decreases, and constancy of intensity in recorded long tones.

Method

Sixty-two randomly selected subjects participated in this study; 31 were musicians and 31 nonmusicians. Musicians were music majors enrolled in a degree program at a state university. Nonmusicians were enrolled in the same university as elementary education majors, were not participating in a music organization, and had less than three years of private or group music study during their public school experience. Demographic group comparisons were made on sex and age differences. Age differences, that varied from 20 to 43 were not significant; however, there were significantly more women than men in the nonmusician group.

Independent variables included three dynamic levels of 60, 70 and 80 decibels. Each dynamic level was electronically controlled with a Moog synthesizer to crescendo, decrescendo or maintain constant intensity. The amount of intensity change was 3 dBs across the last 10 seconds of the 16-second trials. The 3 dB modulation was selected (a) after consultation with a university audiologist who confirmed the 3 dB increment as a normally acceptable modulation included in auditory examinations, and (b) subsequent to a pilot test which utilized a 10 dB modulation that appeared to be too easily discriminated by subjects.

The stimulus frequency, F#4 (369.9 Hz), was selected as a middle-range frequency easily perceptible to subjects. Stimuli consisted of tape recordings of professional musicians performing on clarinet and synthesizer. The clarinet long tone was recorded initially without any change in volume. For the 3 dB increase and decrease in intensity, the tape recorded clarinet tone was played through a sequencer on the Moog synthesizer. The sine wave generated by the Moog was fed through the same sequencer process as the clarinet tone for modulations.

The stimulus tape contained 6 trial items followed by 18 test items. Listening examples were randomized to avoid an order effect in timbre, dB level or modulation change. There was an equal number of items for increase, decrease, and same intensity at 60, 70, and 80 dBs for clarinet and sine wave tones. The three dB levels were chosen as they approximate mp, mf and f dynamic levels.

Subjects were tested individually in a small room for approximately 12 minutes each. Equipment used in this experiment included a Sony TC-360 stereo tape recorder; Scotch 206 recording tape; a Hunter model 320S sound activated switch; electronic digital stop clock; toggle switch; and Model PRO 4AA Koss stereo headphones.

When subjects entered the experimental room, they were greeted by with the following instructions:

> This is an experiment in the changes of loudness in musical tones. Some tones you will hear will increase in loudness, some will decrease in loudness and others remain at the same loudness. As soon as you detect any difference in volume after the tone has started, throw the switch to the off position and circle your answer. If you hear no change, do not change the switch but do circle your answer. Let's begin with illustration A if you have no questions. . . . Ready, illustration A.

Stimulus tones activated the electronic stop clock and simultaneously were heard by the subject. When subjects threw the toggle switch off, stimulus tones and stop clock ceased. The experimenter reset the toggle switch for the next listening example, recorded the time, and reset the stop clock. Subjects circled Increase, Decrease or Same for each of the 6 illustrations and 18 test items. Subjects did not receive confirmation concerning correctness of their responses. Timed responses could vary from 0 to 16 seconds, and correct time responses for decreased and increased intensity modulations could be from 6 to 16 seconds.

Results

This investigation was designed to test intensity discriminations on the basis of two dependent measures: (a) correct recognition of modulations in long tones that increase, decrease or remain the same intensity and (b) speed with which recognition of intensity modulation is made. Correct scores from subjects' responses were tabulated and compared. Table 1 shows that there is no significant difference between total correct responses of musicians and nonmusicians. In fact, it is surprising that nonmusicians made slightly more correct responses than musicians. However among musicians, there were significantly more correct responses to decreased rather than increased intensity items ($\chi^2 = 5.49$, $df = 1$, $p < .02$). Nonmusicians also showed a similar tendency of stronger acuity for decrescendo than crescendo.

Table 1

Total Correct Responses for Intensity Conditions*

Modulation Condition:	Same	Decrease	Increase	Totals
Musicians	86	124	77	287
Nonmusicians	107	113	78	298

*Underlined scores are significantly different at $p < .02$; all other scores are not significantly different.

The three decibel levels and two timbre variables produced no significant differences between groups (see Table 2). Subjects in both groups showed nearly the same accuracy across the three dB levels ($t = 3.05$, $df = 2$, $p = .09$) and two timbre conditions ($t < 1$, $df = 1$, $p = .67$). However, when comparisons were made on dB level x modulation cross tabulations with data from Tables 1 and 2, both groups perceived 60 dB decreases significantly better than 60 dB increases ($\chi^2 = 100.1$, $df = 1$, $p < .001$). No other comparisons differed significantly.

Table 2

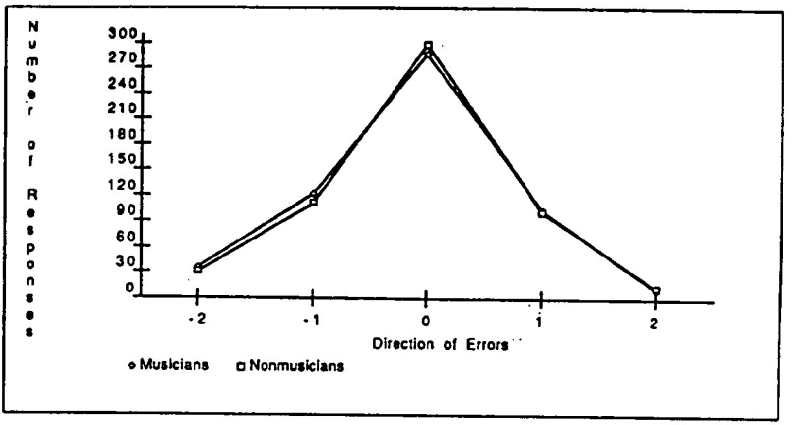
Total Correct Responses for Three dB Levels and Two Timbres*

	dB Levels			Timbres	
	60dB	70dB	80dB	Clarinet	Sine Wave
Musicians	89	100	98	138	149
Nonmusicians	95	102	101	153	145

*No significant differences among scores.

Data for increase, same and decrease categories were analyzed for direction of error as well as correct response. Subjects' actual responses were compared to the correct answer as an indication of the direction of error (that is, -1 = subject answers "decrease" for same item or "same" for increase item; -2 = subject answers "decrease "for increase item; +1 = subject answers "same" for decrease item or "increase" for same item; +2 = subject answers "increase" for decrease item; and 0 = correct response). Analysis of subjects' direction of errors confirms that throughout the study subjects tended to perceive crescendos as constant intensity. Graph 1 data indicate that the five categories of error responses between musicians and nonmusicians do not differ significantly ($\chi^2 = 1.71$, $df = 4$, $p > .20$). However, both groups differ significantly in the number of errors across the five categories ($\chi^2 r = 54.6$, $df = 4$, $p < .001$) as analyzed using the Friedman Two-Way Analysis of Variance statistic (Madsen & Moore, 1978). Frequency of errors reported in Graph 1 shows a central tendency similar to a normal

Graph 1. Direction of Error in Total Responses of Musicians and Nonmusicians to Intensity Modulations



curve. While most responses are correct and shown in the center at 0 errors, distribution of errors tapers off rather evenly on + and - directions. Mistakes in judging intensity changes showed a balance of over and under estimating.

The second main aspect of this study concerned subjects' speed of correct responses that were divided into five categories in which categories 1 and 2 included no changes, while categories 3, 4, and 5 included 1, 2, and 3 dB modulations respectively. Table 3 shows that musicians overall reacted more quickly than nonmusicians. Of the 558 responses by each group, no subject responded within the first time category of 0-3.4 seconds. Responses in the second time category of 3.4-6.8 seconds were guesses (errors) since modulations of intensity did not begin until the seventh second. In the third time category when 1 dB would have occurred, subjects began to correctly perceive changes. In the fourth time category with 2 dBs of modulation, more subjects noted changes. Non-response decisions by subjects were included in the maximum time category of over 13.6 seconds where most responses occurred.

Table 3

Five Categories of Response Time by Musicians and Nonmusicians to Perceived Changes in Intensity*

Categories:	1	2	3	4	5
(in seconds)	0-3.4	3.4-6.8	6.8-10.2	10.2-13.6	13.6-17
Musicians	0	48	119	114	277
Nonmusicians	0	35	87	113	323

*Significant difference between groups ($\chi^2 = 10.73$, $df = 3$, $p < .02$).

Subjects' mean response times for increases and decreases in intensity were not significantly different between groups ($t < 1$, $df = 1$, $p > .05$). Comparing mean response time for increases, musicians averaged 11.13 seconds and nonmusicians 12.24 seconds. For decrease items, musicians averaged 11.09 seconds to nonmusicians 11.96 seconds. The similarities of these response times also indicate no significant differences in how quickly musicians and nonmusicians detected crescendos and decrescendos; however, subjects were slightly faster in perceiving decrescendos.

Item analysis of subjects' responses on the testing instrument indicates that significantly more correct responses were made on the last half than the first half ($\chi^2 = 4.6$, $p < .05$). Musicians had 124 correct responses on the first half and 163 correct answers on the last half. Nonmusicians also improved with practice from 139 first half responses compared to 159 at the end. Since all subjects improved from first to last halves of the perception test, it is assumed that learning took place. Future testing should include more practice examples before assessing perceptual responses to intensity modulations.

Discussion

Main findings of this study indicate that (1) there is no difference in correct responses between musicians and nonmusicians when perceiving intensity modulations,(2) musicians discriminate decrescendo significantly better than crescendo and nonmusicians tend to respond similarly, (3) musicians respond slightly more quickly than nonmusicians in detecting intensity changes, and (4) both groups tend to perceive equally well the three dB levels and two timbres employed here.

Findings of this study replicate the results of Geringer (1991) in that musicians and nonmusicians did not differ in accuracy and speed of perceiving changes in intensity, and decrescendo tended to be discriminated more quickly than crescendo. Results about intensity discrimination in the current study also follow the trend of related studies in pitch and tempo perception. Just as subjects tend to respond with greater acuity to flatness and deceleration, so do they appear to perceive decreases in intensity more accurately than increases.

While these similarities may follow with startling consistency, more evidence is warranted, particularly in intensity discrimination, before definite conclusions are drawn. Replication of this study would be enhanced by (a) increasing the number and age groups of subjects, (b) using an equal number of males and females, (c) varying the rates and levels of intensity modulation, (d) using different pitches and timbres with more complex tones, and (e) counterbalancing the order of stimulus examples. With larger samples and different age groups, it will be interesting to see if the present findings are reconfirmed. Further research is required to demonstrate the influence of the rate of intensity change on the speed of intensity perception. Results of this study showed no difference in perceiving sine waves and long tones from the middle register of the clarinet. Most sounds that we listen to are not sine waves but rather more complex tones; studying how harmonics influence how we hear alterations in loudness would have direct bearing on expressive performance practice. Subsequent investigation into performance of intensity modulations is also needed.

Implications for music educators suggest that careful attention be given to teaching dynamics, especially crescendo which is not perceived as accurately as diminuendo. One of the first discriminations that children make about music is how loud or soft it is (Bentley, 1976). Music teachers might assume that loudness is so easily and quickly perceived that it does not need to be taught. Teachers spend so much time on other aspects of performance, such as rhythm, pitch, and tone production that control of sound intensity may not be taught sufficiently. Teachers may be so engrossed in the technical side of music making that not enough time is spent on expressive elements. Shading or brightening dynamic levels is generally attributed to expressive musicianship. The lack of difference in how musicians and nonmusicians perceive intensity changes can be reassuring for music educators. Dynamic changes that are sought in rehearsals can at least be heard and appreciated by audience members with little musical training as well as trained musicians.

The intent of this investigation was to isolate how musicians and nonmusicians perceive changes in intensity so that music educators would have objective evidence upon which to base their teaching practice. Whether practioners can change intensity discrimination responses by applying these findings remains to be seen.

REFERENCES

Bentley, A. (1976). *Musical ability in children and its measurement.* London: G.G. Harrap & Co. Ltd.

Drake, A. H. (1968). An experimental study of selected variables in the performance of musical durational notation. *Journal of Research in Music Education, 16*, 329-338.

Duke, R. A. (1987). The effect of melodic rhythm on undergraduates' perception of relative tempo. *Contributions to Music Education, 14*, 19-28.

Duke, R. A. Geringer, J. M., & Madsen, C. K. (1988). Effect of tempo on pitch perception. *Journal of Research in Music Education, 36*, 108-125.

Geringer, J. M. (1976). Tuning preferences in recorded orchestral music. *Journal of Research in Music Education, 24*, 169-176.

Geringer, J. M. (1978). Intonational performance and perception of ascending scales. *Journal of Research in Music Education, 26*, 32-40.

Geringer, J. M. (1980, April). *Effects of attending to dynamics in pitch, rhythm, and dynamics performances in sightsinging.* Paper presented at the Music Educators National Conference, Miami Beach, FL.

Geringer, J. M. (1991). Temporal discrimination of modulated intensity in music excerpts and tones. *Journal of Research in Music Education, 39*, 113-120.

Geringer, J. M. (1992). An analysis of dynamic contrasts in recorded choral, orchestral, and piano performances. *Bulletin of the Council for Research in Music Education, 112*, 51-61.

Geringer, J. M. & Breen, T. (1975). The role of dynamics in musical expression. *Journal of Music Therapy, 12*, 19-29.

Geringer, J. M. & Madsen, C. K. (1987). Pitch and tempo preferences in recorded popular music. In C. Madsen & C. Prickett (Eds.), *Applications of research in music behavior* (pp. 204-212). Tuscaloosa: University of Alabama Press.

Geringer, J. M. & Sogin, D. W. (1988). An analysis of musicians' intonational adjustments within the duration of selected tones. *Contributions to Music Education, 15*, 1-6.

Geringer, J. M. & Witt, A. C. (1985). An investigation of tuning performance and perception of string instrumentalists. *Bulletin of the Council for Research in Music Education, 81*, 90-101.

Killian, J. N. (1985). The effect of differential feedback on tempo performance and perception. *Contributions to Music Education, 12*, 22-30.

Kuhn, T. L. (1974). Discrimination of modulated beat tempo by professional musicians. *Journal of Research in Music Education, 22,* 270-277

Kuhn, T. L. (1977). Effects of dynamics, halves of exercise, and trial sequences on tempo accuracy. *Journal of Research in Music Education, 25,* 222-227.

Kuhn, T. L. (1987). The effect of tempo, meter, and melodic complexity on the perception of tempo. In C. Madsen & C. Prickett (Eds.), *Applications of research in music behavior* (pp. 165-174). Tuscaloosa: University of Alabama Press.

Kuhn, T. L. & Booth, G. D. (1988). The effect of melodic activity, tempo change, and audible beat on tempo perception of elementary school students. *Journal of Research in Music Education, 36,* 140-155.

Kuhn, T. L. & Gates, E. (1975). Effects of notational values, age, and example length on tempo performance accuracy. *Journal of Research in Music Education, 23,* 203-210.

LeBlanc, A. (1981). Effects of style, tempo, and performing medium on children's preference. *Journal of Research in Music Education,* 29, 243-256.

Madsen, C. K. (1974). Sharpness and flatness in scalar vocal performance. *Science de l'Art/Scientific Aesthetics, 9,* 91-97

Madsen, C. K. (1979). Modulated beat discrimination among musicians and nonmusicians. *Journal of Research in Music Education, 27,* 57-67.

Madsen, C. K., Edmonson, F. A., & Madsen, C. H., Jr. (1969). Modulated frequency discrimination in relationship to age and musical training. *Journal of the Acoustical Society of America.,46,* 1468-1472.

Madsen, C. K. & Moore, R. S. (1987). *Experimental research in music: Workbook in design and statistical analysis.* Raleigh, N.C.: Contemporary Publishing Co.

Papich, G. & Rainbow, E. (1974). A pilot study of performance practices of twentieth-century musicians. *Journal of Research in Music Education, 22,* 24-34.

Petzold, R. G. (1966). Auditory perception of musical sounds by children in the first six grades. Madison, WI: University of Wisconsin, *Cooperative Research Project 1051.*

Salzberg, R. S. (1980). The effects of visual stimulus and instruction on intonation accuracy of string instrumentalists. *Psychology of Music, 8,* 42-49.

Wang, C. C. & Salzberg, R. S. (1984). Discrimination of modulated music tempo by string students. *Journal of Research in Music Education, 32,* 123-131.

Wapnick, J. (1980). Pitch, tempo, and timbrel preferences in recorded piano music. *Journal of Research in Music Education, 28*, 43-58.

Yarbrough, C. (1987). The effect of music excerpts on tempo discriminations and preferences of musicians and nonmusicians. In C. Madsen & C. Prickett (Eds.), *Applications of research in music behavior* (pp. 175-189). Tuscaloosa: University of Alabama Press.

THE HISTORY OF CLASSROOM INSTRUMENTS IN THE SILVER BURDETT MUSIC SERIES, 1885-1988

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Music instruction in the public schools is no longer confined to developing the singing voice. Numerous changes have occured in the music classroom since music became part of the elementary school curriculum. The introduction of classroom instruments into the curriculum in the early 1990s was one change that significantly enhanced music instruction.

Including instruments in the general music classroom was originally intended to develop an nterest in instrumental music (McConathy, Miessner, Birge, & Bray, 1931). The use of instruments has since been recognized for developing additional musical values, skills, and concepts.

Snyder (1954) believed that playing instruments gives all the children in a classroom the opportunity to participate in music activities. The instrument playing also motivates students "to learn more about musical notation in order to read what they are playing on an instrument" (p.14).

Ellison (1959) compared instrumental playing to experimenting with sounds. Children may stretch a rubber band over a box and strum it, tap a pencil on a table, or clap two spoons together. The children are experimenting with sound and making music in a way that makes sense to them. This experimentation with non- conventional sound sources is similar to experimenting with actual instruments.

Classroom instruments can also help develop rhythm and stimulate an interest in instrumental music (Thompson & Nordholm, 1949). Coordination of large and small muscles is another benefit of playing instruments (Elliott, 1966). Mursell (1956) stated that playing a simple instrument gives a child a sense of achievement and promotes respect for their own property and the property of others.

It is clear that classroom instruments have taken an important role in general music instruction. In order to explore their use from a historical perspective, the purpose of this study was to examine the introduction and use of classroom instruments in the Silver Burdett music series, 1885-1988. The Silver Burdett series was chosen because Silver Burdett is the oldest music publisher that is still in exsistence (Fisher, 1933). They continue to be a leading music textbook publisher and have published a total of ten music series. These series, with their authors/editors, are listed below:

1. *Normal Music Course*--1885
   Hosea E. Holt and John W. Tufts
2. *Modern Music Series*--1901
   Robert Foresman and Eleanor Smith
3. *Progressive Music Series*--1914
   Horatio Parker, Osbourne McConathy, Edward Bailey Birge, W. Otto Miessner
4. *The Music Hour*--1929
   Osbourne McConathy, W. Otto Miessner, Edward Bailey Birge, Mable E. Bray

5. *New Music Horizons*–1944
   Osbourne McConathy, Russell V. Morgan, James L. Mursell, Marshall Bartholomew, Mable E. Bray, W. Otto Miessner, Edward Bailey Birge
6. *Music for Living*--1956
   James L. Mursell, Gladys Tipton, Beatrice Landeck, Harriet Nordholm, Roy E. Freeburg, Jack M. Watson
7. *Making Music Your Own*--1964
   Beatrice Landeck, Elizabeth Crook, and Harold C. Youngberg
8. *Silver Burdett Music*–1974
   Elizabeth Crook, Bennett Reimer, and Davis S. Walker
9. *Silver Burdett Music Centennial Edition*–1985
   Elizabeth Crook, Bennett Reimer, and Davis S. Walker
10. *Silver Burdett World of Music*–1988
    Jane Beethoven, Carrell Bledsoe, Carment E. Culp, Jennifer Davidson, Lawrence Eisman, Mary E. Hoffman, Catherine Nadon-Gabrion, Mary Palmer, Carmino Ravosa, Mary Louise Reilly, Carol Rogel Scott, Phyliss Weikart

In an effort to determine historical trends, 25 elementary music series published in the United States from 1926-1976 were examined by Diaz (1980). The books examined were grades one through six. The result of the study revealed that the series' goals mights be divided into six periods. These periods will be described below and compared to instrument use as reflected in the goals of the Silver Burdett music series.

As identified by Diaz (1980), the music series' goals during 1926-1935 were to make the child's life happier and more satisfying. The goals of the second period (1936-1943) were developing music reading skills through singing. During the years 1944-1954, the third period, the music series' goals were to develop music reading skills through rhythm activities and singing. The fourth period (1953-1962) saw a five-fold approach to music education, including listening, creating, moving, playing instruments, and singing, with less emphasis on music reading. The fifth period (1963-1969) expanded upon the five-fold approach to include not only music reading, but musical knowledge, concept formation, positive attitudes, and music appreciation. The sixth period (1970-1976) emphasized developing the aesthetic response through musical skills.

The analysis of these goals reveals that increasingly less emphasis was placed on singing. Other musical activities began to enter the elementary music classroom. One of theses activities was the playing of classroom instruments.

A comparison of Diaz's analysis of elementary music series' goals and the goals of the Silver Burdett music series discloses some agreement. *The Music Hour* (1929) was the first Silver Burdett music series to introduce classroom instruments. The playing of instruments was seen as an approach to music appreciation and understanding. It was also a way to develop an interest in instrumental music.

The Music Hour is consistent with the goal of the elementary music series for the first period (1926-1935) which was to make the child's life happier and more satisfying. *The Music Hour* also is partially consistent with the second period goal (1936-1943), which was to develop reading skills through singing. The emphasis in *The Music Hour* was no longer solely on

developing the singing voice, but also on developing more literacy through singing.

New Music Horizons (1944) introduces the five-fold program of music activities: singing, playing, rhythmic response, listening, and creating. Singing was no longer the only music experience. *New Music Horizons* introduced the concept of the five-fold approach to music education in 1944, although Diaz identifies this as the primary characteristic of the fourth goal period (1953-1962).

Diaz also suggests less emphasis on music reading during the fourth period. *Music for Living*, published during this time frame, lists nine uses of classroom instruments. One of these uses is an approach to music reading. While instruments have uses other than for music reading, such as group participation, outlining a melody, highlighting details (rhythm and meter), adding a coda or introduction, developing harmonic feeling, carrying a part-song or round, emphasizing tone quality and creating sound effects, and pointing up the mood of the music, it is not clear whether there is less emphasis on reading or merely a different type of emphasis.

Making Music Your Own (1964) includes a very brief philosophy statement. The philosophy simply states that the series contains a variety of musical activities. The goal of the fifth period (1963-1969) was to expand the five-fold approach. The two are in agreement--variety of activities is consistent with expansion. The playing of instruments maintained its prominence as part of the five-fold program.

Silver Burdett Music (1974) took a new approach to music education. This series was designed to increase a student's sensitivity to music. The path to developing sensitivity was to accomplish certain behaviors including perceiving, reacting, producing, conceptualizing, analyzing, evaluating, and valuing. The goal Diaz identified for the sixth period (1970-1976) was to develop the aesthetic response through musical skills. There is a direct correlation between Diaz's idea and *Silver Burdett Music.*

The *Centennial Edition* (1985) and *World of Music* (1988) series were published after the time periods described by Diaz. The philosophy of *Silver Burdett Music Centennial Edition* states that the basis of the series is aesthetic education. Along with relating music to other arts, music reading is also emphasized. Music reading is a skill which requires considerable time to accomplish. A simple instrument can help a student read music and for this reason, "beginning in Book One, notation is also studied in conjunction with instruments available in the classroom" (Crook, Reimer, & Walker, 1981, p.vii). Classroom instruments are a necessary part of this music series.

The World of Music (1988) series has music involvement as its goal. Music involvement deals with the student's response to music by singing, moving, listening, playing instruments, or creating. Once again, classroom instruments are a major part of music education.

Another approach to documenting the increase in the playing of classroom instruments is analysis of the number of songs that used instruments in each series. This analysis was accomplished by categorizing the songs using instruments according to the concepts the instruments were used to teach. Some of the songs were not able to be categorized due to difficulty in determining the concept being taught. Generally, the guitar and autoharp were the instruments included in the category "chord," bells and recorder in the category "pitch," and percussion and ethnic instruments in the "tone quality" category. The use of the piano appears to shift as it was categorized under "pitch" in the earlier series and "tone quality" in the later. These tables are limited to those series where books from each grade level

were available for examination and are strictly the writer's interpretation intended for use in this study only (see Table 1).

Table 1. Instrument Use by Category

New Music Horizons--1944

	Chords	Rhythm	Pitch	Tone Quality
Book One		42	5	
Book Two		19	3	7
Book Three		28	38	13
Book Four		45	97	27
Book Five	15	39	5	36
Book Six	4	1	3	35
Totals	19	174	151	118

Music for Living--1956

	Chords	Rhythm	Pitch	Tone Quality
Book One				
Book Two	10	56	35	11
Book Three	18	133	70	7
Book Four	17	90	69	22
Book Five	28	46	32	13
Book Six	15	70	39	19
Totals	88	395	245	72

Making Music Your Own–1964

	Chords	Rhythm	Pitch	Tone Quality
Kindergarten Book		19	6	
Book One		30	27	
Book Two		14	21	
Book Three	33	11	38	2
Book Four	20	15	31	7
Book Five	8	15	28	38
Book Six	15	19	9	36
Totals	76	123	160	83

Table 1. --Continued

Silver Burdett Music--1974

	Chords	Rhythm	Pitch	Tone Quality
Kindergarten Book	20	27	21	
Book One	23	51	60	
Book Two	17	69	59	
Book Three	53	40	58	
Book Four	47	58	51	14
Book Five	45	30	64	24
Book Six	24	18	50	12
Totals	229	293	373	50

Silver Burdett Music Centennial Edition--1985

	Chords	Rhythm	Pitch	Tone Quality
Kindergarten Book	18	40	44	
Book One	21	53	58	
Book Two	21	79	66	
Book Three	54	52	84	
Book Four	56	63	54	11
Book Five	50	32	67	24
Book Six	24	20	58	12
Totals	244	339	431	47

World of Music--1988

	Chords	Rhythm	Pitch	Tone Quality
Kindergarten Book		50	40	
Book One	2	61	50	
Book Two	7	55	45	
Book Three	32	19	30	
Book Four	49	34	36	
Book Five	64	21	41	
Book Six	7	9	15	2
Totals	161	249	257	2

The 1956 series contained more songs with instruments than the 1944 or the 1964 series according to this listing. The 1974 and 1985 series had a considerable increase in the number of songs using instruments. This increase may have been due to the philosophy of the series which states that the use of instruments helps the reading music notation. The 1988 series shows a decline in the use of classroom instruments from the previous series. This series' philosophy stressed music involvement which could have caused a diminishing emphasis on music reading skills and stronger emphasis on other aspects of music involvement. Less emphasis on music reading skills could explain the decline in the use of classroom instruments.

The rise in the number of songs where instruments were used in the last three series could also be due to philosophy statements stressing discriminating sounds and the reading of music notation.

Assuming that the Silver Burdett music series is representative of elementary music curriculum over the past seventy years, classroom instruments have emerged as a vital part of a child's music education. The use of instruments in the elementary music classroom provides valuable educational and social experiences leading to increased music growth and understanding.

This article is based on the author's master's thesis completed at Florida State University, Tallahassee, Florida, in 1987.

REFERENCES

Crook, E., Reimer, B., & Walker, D.S. (1981). *Silver Burdett music teacher's book one.* NJ: Silver Burdett Co.

Diaz, M.C. (1980). *An analysis of the elementary school music series published in the United States from 1926-1976.* Ann Arbor, MI: University Microfilms International.

Elliott, R. (1966). *Learning and teaching music.* Columbus, OH: Charles E. Merrill Books, Inc.

Ellison, A. (1959). *Music with children.* New York: McGraw-Hill Book Co., Inc.

Fisher, W.A. (1933). *One hundred and fifty years of music publishing in the United States.* MA: Oliver Ditson Co., Inc.

McConathy, O., Miessner, W.O., Birge, E.B., & Bray, M.E. (1929). *The music hour, kindergarten and first grade teacher's book.* NY: Silver Burdett and Co.

Mursell, J.L. (1956). *Music education principles and programs.* NJ: Silver Burdett Co.

Snyder, A.M. (1954). Playing instruments in elementary schools. *The Instrumentalist, 8,* 14-15.

Thompson, C.O. & Nordholm, H. (1949). *Keys to teaching elementary school music.* MN: Schmitt, Hall, and McCreary Co.

THE EFFECT ON CORRELATIONS WITHIN AND AMONG ADJUDICATION PANELS SYSTEMATICALLY REMOVED FROM FESTIVAL PERFORMANCES: AN EXPLORATORY I NVESTIGATION

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It has long been adjudicators' belief that the procedure whereby an instrumental ensemble takes the stage and warms up predisposes festival judges toward a given rating or score. Kruth (1970) stated:

> Conductors must realize that before a note is played a judge will, or should, observe the following factors: how a group takes the stage, grooming, posture, dress, instrumentation, and the efficiency of the set-up crew. . . . It is important that adjudicators consistently evidence concern and react accordingly when a performing group does not present *eye appeal* as well as *ear appeal.* The above factors are relevant to the initial judgment of the group and the ratings they will receive. (p. 48)

Current writers, too, have pointed out that extramusical factors may affect adjudicators' evaluations of a soloist or ensemble (Boyle & Radocy, 1987; Ross, 1989; Fox, 1990).

Is there indeed a relationship between rated and/or scored observations of instrumental ensembles' preperformance procedures and rated and/or scored observations of these ensembles' performances? Information available to adjudicators prior to performance of the first selection usually consists of:

1. The name of the school.
2. The name of the organization (concert band, wind ensemble, etc.)
3. The school's classification, typically based on school enrollment figures.
4. Observation of ensembles' set-up procedure.
5. Observation of ensembles' warm-up procedure.

Would adjudicators' evaluations of preperformance factors correlate highly with the final rating or score? If so, which factors? If adjudication panels were asked to rate only one, or some systematic combination, of the above factors, at which point would adjudicators' ratings or scores begin to correlate highly with the live-performance adjudicators'? Owing to the administrative difficulty of securing a large number of qualified judges to attend a festival and adjudicate ensembles' live set-up and warm-up procedures, judges in this study evaluated these procedures via videotape. A recent study (Bergee, in press) has demonstrated that videotape is a serviceable medium for evaluating solo instrumental performance.

Therefore, this investigation explored the following questions:

1. How does the interjudge reliability among adjudicators evaluating live performances compare with the interjudge reliability of adjudicators evaluating videotaped performances?
2. What is the interjudge reliability of adjudication panels evaluating only selected preperformance factors?
3. What are the relationships among adjudication panels evaluating live performances and adjudication panels evaluating preperformance factors only?

Method

The set-up procedures, warm-up procedures, and performances of seven bands at a concert band festival were videotaped. The festival utilized a common procedure: Three judges heard the performances and assigned categorical, numerical ratings on a scale of I+ to V-. The following criteria were given to judges prior to the festival:

I	Superior	A superior performance in all aspects
II	Excellent	An excellent performance with only minor problems
III	Good	A good or average performance having some minor and a few major inaccuracies
IV	Fair	A fair performance with serious, major problems
V	Poor	An unsatisfactory performance having such serious major problems as to render the performance unsatisfactory in most aspects

Additionally, adjudicators awarded points under six captions (total = 100) and wrote anecdotal comments. The captions and their respective values were as follows:

General Musicianship and Interpretation/ Musical Effect (25 points): Tempo, Dynamics, Style, Phrasing, Uniformity Within Sections and Total Ensemble / Artistry and Fluency
Ensemble (20 points): Precision, Rhythmic Accuracy, and Articulation
Balance (20 points): Ensemble, Solo and Tutti Ensemble, All Sections of the Ensemble
Intonation (15 points): Pitch Comparison Between Individuals and Total Group
Tone Quality (15 Points): Comparison Between Individuals and Group Including Percussion
Quality and Suitability of Literature for the Ensemble (5 points)

Soon after the festival performances, a company of 15 adjudicators was assembled and randomly assigned to one of five panels, each containing three adjudicators. These panels were differentiated as follows:

Panel 1: Videotape This panel adjudicated the seven performances on videotape, using the same adjudication form as adjudicators who evaluated the live performances (hereafter designated as Live).

Panel 2: Warm Up /Set Up This panel adjudicated ensembles' videotaped set-up and warm-up procedures. Each adjudicator was asked to rate the groups from I+ to V-, score each group from 100 (finest conceivable) to 0 (poorest conceivable), and to write anecdotal comments justifying their choice of score and rating. The videotape was stopped at the beginning of the first performance selection.

Panel 3: Set Up Only This panel evaluated ensembles' set-up procedures only. As with Panel 2, judges were asked to rate and score the ensemble and to write anecdotal comments justifying their choices based only on what they observed. The videotape was stopped at the first note of the warm-up.

Panel 4: School Classification/Name of Organization These adjudicators were given only the ensembles' school classification and name of the organization (wind ensemble, etc.), and asked to rate the ensemble from I+ to V-, score the ensembles from 100 to 0, and justify their selections based on the information provided. Festival administrators used the following classification scheme:

1A: 1-173 (population of school)
2A: 174-360
3A: 361-897
4A: 898 and higher

Two 2A (one of which was a junior high school band), one 3A, and four 4A bands participated in this festival.

Panel 5: Name of Organization This panel was asked to rate and score the ensembles, and justify their choices, based entirely on the name of the organization (wind ensemble, concert band, "tiger band," etc.).

Adjudicators (N = 15) were experienced instrumental teachers and judges, including one university director of bands, seven graduate teaching assistants in instrumental conducting and music education, and seven public school directors of bands. To encourage Panel 4 and 5 adjudicators to judge only the intended factors (name of the organization, school classification) rather than the reputation of the ensembles or their directors, the name of the school was removed. The name of the *organization* (wind ensemble, etc.) as it appeared on the Live adjudicators' rating forms, however, remained intact.

Adjudicators' evaluations were examined for interjudge reliability and correlations among panels. Qualitative data (adjudicators' anecdotal comments) for were analyzed for insights, patterns, and similarities.

Results

The correlation between total scores and ratings for the Live adjudication panel was .98 and for the Videotape panel was .99. Correlations among total scores and ratings for the other panels ranged from .86 (Name of Organization) to .99 (Warm Up/Set Up). Therefore, owing to the redundancy of information between scores and ratings, only the scores were used for correlational analysis.

To determine interjudge reliability, an analysis of variance procedure first exposited by Hoyt (1941) was used. Interjudge reliability outcomes for ratings, total scores, and caption scores appear in Table 1. Total score interjudge reliability was .85 ($p < .01$) for the Live panel and .88 ($p < .01$) for the Videotape panel. Interjudge reliabilities for caption scores were generally acceptable, ranging from .66 to .96. Only one caption was not statistically significant (the *Balance* caption among Live adjudicators).

Product-moment correlations between Live and Videotape sets of scores (see Table 1) suggested a generally close contour relationship. Only two correlations did not reach statistical significance: the r of .74 for tone quality (rCRIT [df = 5] = .754) and the r of .46 for the quality/suitability caption. In order to test for differences between means of Live and Videotape adjudicators, I calculated dependent means t-tests. Outcomes (Table 1, far right column) revealed a significant difference between total score means and means of all caption scores. In each instance, Videotape adjudicators' scores were lower than Live adjudicators'.

Table 1

Total and Caption Score Interjudge Reliability for Live-Performance and Videotaped-Performance Adjudication Panels

	LV	VT	r [a]	t
Total	.85**	.88**	.83**	3.21*
Gen. Mus./Int.	.77**	.87**	.81**	3.25*
Ensemble	.72*	.85**	.90**	2.62*
Balance	.66	.82**	.92**	2.66*
Intonation	.82**	.86**	.76*	3.39*
Tone Quality	.92**	.70*	.74	2.79*
Qual. & Suit.	.96**	.72*	.46	3.16

Note. LV = live-performance adjudication panel; VT = videotaped-performance adjudication panel. Critical significance values for interjudge reliability are different from those for correlations.

[a]Correlations among summated sets of scores for live-performance and videotaped-performance adjudication panels.

*$p < .05$. **$p < .01$.

Interjudge reliability figures for the other panels (see Table 2) reveal only one significant outcome, the *r* of .84 among Warm Up/Set Up adjudicators. Product-moment correlations between panels' summated scores revealed two clusters of significant correlations located at diagonal ends of the matrix: among Name of Organization, School Classification/Name of Organization, and Set Up panels, and among Warm Up/Set Up, Videotape, and Live panels.

Table 2

Interjudge Reliability and Correlations Among Adjudication Panels' Summated Scores

	Total Score IJR	SC+NM	SU	WU+SU	VT	LV
NM	-.43	.81*	.79*.	.50	.67	.45
SC+NM	.34		.83*	.51	.64	.61
SU	-.14			.04	.28	.15
WU+SU	.84**				.97**	.87*
VT	.88**					.83*
LV	.85**					

Note. NM = Name of Organization adjudication panel; SC+NM = School Classification/Name of Organization adjudication panel; SU = Set Up adjudication panel; SU+WU = Set Up and Warm Up adjudication panel; VT = videotaped-performance adjudication panel; LV = live-performance adjudication panel; IJR = interjudge reliability.

* $p < .05$. ** $p < .01$.

Content analysis of anecdotal comments made by Name of Organization and School Classification/Name of Organization adjudicators disclosed that four of the six adjudicators used the name of the ensemble as a cue. Specifically, they stated that the term *wind ensemble* connotes a select, well-instrumentated ensemble, whereas other terms (e.g., *concert band, varsity band,* etc.) imply a nonselect, perhaps less well instrumentated ensemble. One judge in the School Classification/Name of Organization group wrote that smaller-classification schools are usually assumed to have a nonselect ensemble with instrumentation deficiencies.

Judges on the Set Up panel focused on organizational aspects, uniforms, and the demeanor of students and director. Positively influencing these judges were a percussion section that entered prior to the group to organize their area; a well-organized, briskly-paced entrance of the ensemble; no extraneous talking or playing; a relaxed and confident manner; attractive uniforms (tuxedoes, especially); and the presence of such instruments as piano and double bass, suggesting the performance of relatively sophisticated literature. In addition to noting the same visual aspects as the Set Up panel, Set Up/Warm Up judges commented on instrumentation, balance, tone quality, intonation, and precision of attacks and releases, agreeing to a surprising extent with the performance adjudicators. An overlong warm-up procedure negatively affected all judges. A variety of intonation, balance, and tone quality weaknesses often were demonstrated during the warm-up procedure, and judges stated that attempts to solve these problems generally seemed impromptu and ineffective. Two of the judges did not favor the tuning of individuals while on the performance stage. Often, the judges singled out the tuning standard (usually the first clarinetist) as having poor tone quality or unstable intonation. All judges commented that for some groups the tuning procedure seemed haphazard and disorganized. Also, all judges frequently noted that the timpani were tuned incorrectly. They reacted negatively to the director tuning the timpani.

Discussion

In this investigation, panels of adjudicators were assembled to evaluate preperformance aspects of bands participating in a rated and scored large-ensemble music festival. Aspects selected for evaluation were name of the organization, school classification, set-up procedure, and warm-up procedure. According to the results, interjudge reliability and correlations among panels were highest when judges had access to aural information.

Investigators (e.g., Fiske, 1977) often point to the unreliability of three-member adjudication panels. In this investigation, three-member panels evaluating *aural* aspects of performances generally demonstrated acceptable interjudge reliability.

Results of the videotaped-performance evaluations may suggest new possibilities for performance evaluation. Interjudge reliability of caption ratings most likely to be affected by videotape--ensemble, balance, tone quality--was acceptable. The tone quality scores, however, were lower than live-performance adjudicators' scores. Perhaps the sound quality of the videotape affected judges' ability to evaluate.

Outcomes of correlations between panels' summated scores (Table 2) suggest that adjudicators allowed access only to visual information directed their attention to similar visual phenomena. Analogously, panels allowed access to aural information seemed to focus on similar aural phenomena.

But the lack of *correlation* between these clusters of panels implied a weak relationship between visual and aural aspects.

Adjudicators in this study who evaluated the warm-up procedure needed little aural information to assign ratings correlating closely with final ratings. Similarly, evaluating clarinet performance, Vasil's (1973) adjudicators required only fifteen seconds to make an informed judgment. It must be cautioned, however, that correlations are a measure of relationship, not cause and effect.

In this investigation, correlations between caption scores and the final ratings were, with one exception, above .89 ($p < .01$), reinforcing frequent assertions that music performance is evaluated in a more-or-less global fashion (Fiske, 1977; Burnsed, Hinkle, & King, 1985; Radocy, 1986). Perhaps the procedure for scoring of captions found on most rating sheets should undergo re-evaluation. Ensembles that demonstrate good general musicianship usually perform well across all captions.

This was an exploratory investigation. Use of three-member adjudication panels, a common festival procedure, has the advantage of closely aligning practical and statistical significance. Further investigations, however, should consider the use of more adjudicators listening to more ensembles. According to Fiske (1977), three-member panels often demonstrate low interrater reliability; he recommended panels comprised of seven to 10 judges. Because adjudication of the live festival performances was intended to serve as the standard of comparison, I chose not to vary the performance order. Future investigations might consider a random reassignment of performance order for different panels, perhaps even for different adjudicators. Lastly, further investigations should attempt to control for judges' prior knowledge of performing ensembles. In this study, correlations may have been affected by judges' prior knowledge of some of the groups.

REFERENCES

Bergee, M. J. (in press). A comparison of faculty, peer, and self-evaluation of applied brass jury performances. *Journal of Research in Music Education.*

Boyle, J. D., & Radocy, R. E. (1987). *Measurement and evaluation of musical experiences.* New York: Schirmer Press.

Burnsed, V., Hinkle, D., & King, S. (1985). Performance evaluation reliability at selected concert festivals. *Journal of Band Research, 21*(1), 22-29.

Fiske, H. E. (1977). Relationship of selected factors in performance adjudication reliability. *Journal of Research in Music Education, 25,* 256-263.

Fox, G. C. (1990). Making music festivals work. *Music Educators Journal, 76*(7), 59-64.

Hoyt, C. (1941). Test reliability obtained by analysis of variance. *Psychometrika, 6,* 153-160.

Kruth, E. C. (1970). Adjudication and the music festival. *The Instrumentalist, 24*(6), 48-49.

Radocy, R. E. (1986). On quantifying the uncountable in musical behavior. *Bulletin of the Council for Research in Music Education, 88,* 22-31.

Ross, S, L. (1989). Avoiding contest pitfalls. *The Instrumentalist, 43*(7), 26, 28.

Vasil, T. (1973). The effects of systematically varying selected factors on music performing adjudication (Doctoral dissertation, University of Connecticut). *Dissertation Abstracts International,* 34, 3950A-3951A.

STUDENTS' PREFERENCES FOR SELECTED MUSIC FACTORS: COMPARING CLASSROOM MUSIC TEACHERS' PERCEPTIONS TO RESEARCH LITERATURE CONCLUSIONS

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The concept of preference is defined by Price (1986) in his glossary of affective terms as, "An act of choosing, esteeming, or giving advantage to one thing over another" (p. 154). Understanding the developmental process of music preferences may be beneficial to music educators. As Sims (1987) stated:

> Expanding the musical tastes of children, in an effort to create lifelong learners, participants, and consumers of music, has long been a primary goal of music education...Identification of as many variables as possible that affect the acquisition of music preferences by children would be of value to music educators for consideration in determining the optimal times, best technique, and most appropriate materials to achieve attitude-related goals. (p. 16)

Student motivation and participation in music classes can be enhanced as teachers make better choices to help their students acquire a broader appreciation, and perhaps an enjoyment, of a variety of music. Bartlett (1973) suggested that, "the more that is known about creating positive reactions to music, especially art music, the more likely will better teaching methods be developed to achieve these kinds of reactions: (p.302). Although it would be shortsighted to use only music favored by students, knowledge of their preferences may be important in effective selection of materials. As Blyler (1960) said, "The musical interests of children represent only a momentary cross section of their continuing concerns. Yet they are important in education for they provide an excellent place from which to begin musical education" (p.9).

Research designed to identify variables that influence musical preference and their interaction began in the field of psychology. Data collected by psychologists were used to investigate various attitudes and opinions in the early 1930's (Wapnick, 1976). Papers relating to musical preferences and music education were published soon after that time. Early research in this field was summarized by Farnsworth (1950). The original emphasis was on general methodological problems and subject variables such as intelligence, musical aptitude, gender and age, primarily using verbal expression techniques. Since the 1970;s, the focus of research turned to situational factors such as familiarity of music, teaching method, peer influences, and socio-economic status (Wapnick 1976). Greer (1981), Hedden (1980) and Wapnick (1976) presented reviews of the literature dealing with student preferences. In 1980, LeBlanc proposed an interactive theoretical model of preference acquisition that shows different levels as well as different categories of influencing factors. These categories are seen as interrelated and interactionary. Extant research has concentrated on examination of isolated variables using various types of self-report and behavioral measurements. This type of testing discovers cause and effect results of specific variables on preference but in many instances neglects the interactive relationships between the variable categories. Additional

investigation might explore the strength of each category and how each influence the other.

Limitations inherent in the music classroom give rise to a special set of circumstances that influence the development of student musical preferences. Music educators are vital to this process since they control the classroom environment. Teachers are influential by their presentation of music, attitudes toward music, attitudes toward students, and methods in which they teach music. Also, teachers' perceptions of student preferences may be important in making appropriate musical choices for motivation, readiness, procedures, rewards, and other educational purposes.

Student listening preferences concerning the variables of tempo, style, and melodic complexity have been documented by research. However, no studies have been conducted to discover student singing preferences as observed by music teachers in the classroom setting relating to these variables. The purpose of this study was to compare music teachers' assessment of student singing preferences with extant research preferences regarding musical listening variables of tempo, style, and melodic complexity. Such a comparison may provide new insight into the relationship between musical variables and environmental variables. These specific musical variables were chosen for this study, because (a) they are easily perceived by teachers, (b) easily controlled by teachers, and (c) research results are clear regarding the relationship of these variables to student preference.

In this study, survey results of music teachers' responses were compared with results found by researchers concerning the musical variables of tempo, style, and melodic complexity (as determined by the number of different pitches). The three null hypotheses tested in this study were:

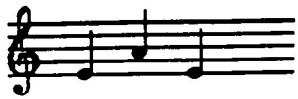
1. There will be no significant difference among the tempos of students' favorite songs, as indicated by their music teachers, and student tempo preferences described in the literature (Baker, 1980; Flowers, 1988; Geringer & Madsen, 1987; LeBlanc, 1981; LeBlanc & Cote, 1983; LeBlanc & McCrary, 1983; LeBlanc, Colman, McCrary, Sherrill & Malin, 1988; Sims, 1987).
2. There will be no significant difference among the styles of students' favorite songs, as indicated by their music teachers, and student style preferences described in the literature (Blyler, 1960; Greer, Dorow, & Hanser, 1973a; Greer, Dorow & Randall, 1974; Greer, Dorow, Wachhaus & White, 1973b; LeBlanc, 1979; LeBlanc, 1981; May, 1985; Rogers, 1957).
3. There will be no significant difference in the melodic complexity of students' favorite songs as indicated by their music teachers, and student melodic complexity preferences described in the literature.

For the purpose of this study, the following definitions were used:

Slow Tempo -	M.M.=57-84.
Medium Tempo -	M.M.=94-108
Fast Tempo -	M.M.=126-147.
Folk Music -	traditional, cultural music written by an unknown composer.
Composed Music -	songs written specifically for children to be used in school textbooks.
Patriotic Music -	songs with texts expressing feelings and qualities that reflect loyalty to the UnitedStates.
Pop Music -	songs from the "Top 40" genre.

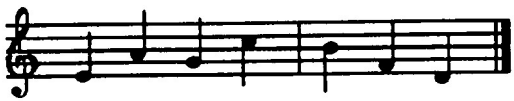
Melodic Complexity - number of different pitches used to create the melody (see Figure 1).

Figure 1. Examples of assessment of melodic complexity by number of pitches.



= E, A (two pitches)

= E, F (two pitches)



= E, A, G, C, B, F, D (seven pitches)

It was assumed that teachers having taught for a minimum of five years would have the experience needed to evaluate reliably musics their students like. It was also assumed that teachers were able to recall the approximate performance tempos used in the classroom.

The scope of this study was limited to a survey of teachers from two specific midwestern communities. Results may not reflect preferences of students elsewhere.

Results of this study may provide important information to teachers regarding song selections made for accomplishing appreciation-related goals. Results may also provide insight for researchers concerning future preference studies.

Methods and Procedures

Thirty-one elementary music educators from two midwestern communities (Bellevue, Nebraska and Council Bluffs, Iowa) were surveyed for this study. These communities were selected based on their similarity to sample populations used in previous research (Blyler, 1960; Greer et al, 1974; LeBlanc, 1979; LeBlanc & Cote, 1983; LeBlanc & McCrary, 1983; May, 1985; McMullen, 1974; Shehan, 1985; Sims, 1987) and their accessibility. Characteristics included (a) midwestern geographical location, (b) ethnic representation within a caucasian majority, and (c) middle to low socioecconomic status. A list of teachers that had taught elementary music for at least five years was obtained from the district offices of both communities. It was assumed that this level of experience would permit teachers to accumulate enough experience with their students to accurately observe and report group preferences.

A survey was designed and evaluated based on teacher interviews which asked them to name (a) two of their students' favorite songs for each grade (grades 1-6) based on the current year's repertoire, (b) the source of each song (e.g., series textbook, octavo, songbook) and (c) the approximate tempo usually selected for singing the song in the classroom. At the end of

the survey teachers were asked in an open-ended question to supply information concerning musical characteristics they found to be consistently favored by their students.

Tempo classifications for categorizing data were derived from work by LeBlanc and McCrary (1983), LeBlanc et al. (1988), and Sims (1987). These categories were then given as the range of tempos from which the teachers were to select in the survey.

Style categories were derived from style designations marked in the original sources. If a style was not indicated in the music, the researcher categorized it based on selected characteristics. No restrictions were put upon the possible source of the song. Categories derived from the survey included "folk", "composed", "patriotic", and "pop".

Melodic complexity has been defined by McMullen (1974) as the number and redundancy of pitches. Because of the established independence of these two variables and accessibility to specific comparisons with McMullen's study, the researcher chose to investigate complexity only as defined by the number of different melodic pitches (see Figure 1).

Thirty-five surveys were mailed to the addresses of the Bellevue and Council Bluffs school teachers, as provided by the school district offices. Accompanying the survey was a cover letter with directions and a request to complete and return the survey in the enclosed, self-addressed envelope. The participants remained anonymous. A follow up letter was sent out two weeks after the initial mailing prompting those who had not yet responded. Results of the study were made available to teachers who returned the enclosed, stamped postcard.

Results

Of the 31 surveys mailed to elementary teachers, 15 (48%) were returned. From the surveys analyzed, a total of 155 usable songs was compiled. Other songs were listed with insufficient source references making them inaccessible for analysis. Twenty-five songs were compiled for the first grade; 28 songs for the second grade; 28 songs for the third grade; 28 songs for the fourth grade; 25 songs for the fifth grade, and 21 songs for the sixth grade. Of the songs indicating a specific source, 78 were from textbooks (63%), 26 were from other song collections books (21%), and 19 were from octavos (15%). Some respondents gave incomplete information for each song causing a difference in the total number of responses for each variable per grade level. Each song was analyzed for its tempo, style, and melodic complexity. The results were then compared to the findings of extant music research concerning those variables.

The first hypothesis addressed whether there was a significant difference between the preferred tempos indicated by researchers and those reported by music teachers. Previous studies have shown that students prefer fast tempos for listening. LeBlanc's studies (1983,1985) dealing with tempo as the isolated variable found students to prefer fast tempos of M.M.=172-271. However, these studies used instrumental listening examples and since most songs used for singing in grades 1-6 do not have these extreme tempi, a slower "fast" tempo was used in the present study (M.M.=126-147). This approximates tempos used by Sims (1987). Because the number of students selecting each tempo was not reported in all previous tempo preference studies, it was not possible to do a direct comparison. However, a one-sample Chi-square test was applied to see if teachers would list a significantly greater number of songs from the "fast" category.

Teachers reported a student preference for medium tempos (M.M.=94-108) for grades 1-6. Results indicate that 18% of the songs were sung at slow tempos, 55% at medium tempos, and 28% utilized fast tempos. A one-sample Chi-square test (χ^2, N=119)=26.08, p<.001 indicated significant preference for medium tempi.

Sims' (1987) study of tempo suggested a difference in listening preference of children from preschool through third grade versus grades fourth through sixth. This parallels other researchers' findings of a pivotal change in taste between the grades of three and four (Baumann, 1960; Greer et al, 1974; May, 1985; Rogers, 1957). A Chi-square test was applied to investigate whether teachers' perceptions of student preferences regarding tempo were different for different age groups. In this study, teachers reported that grades 1-3 preferred medium tempos (52%), while grades 4-6 also were reported to prefer medium tempos (57%) (see Table 1). The Chi-square test indicated no significant difference between grade groups; χ(2, N=119)=.40, p>.05.

Table 1

Response Distribution of Frequency of Favored Tempos by Grade Group

	Tempo			
Grade	Slow	Medium	Fast	Total
1 - 3	12a	32	17	61
	20b	52	28	
	57c	49	52	
	10d	27	14	
4 - 6	9	33	16	58
	16	57	27	
	43	50	48	
	7	28	13	
Total	21	65	3	119

Note. a=frequency, b=% of row, c=% of column, d=% of total.

As a result of these tests, the first null hypothesis was rejected. There was a difference in tempo preference between the literature and teacher observations. Analysis indicated that medium tempos, as compared to fast or slow tempos, were preferred for singing. Results indicated, according to the surveyed teachers, no difference in tempo preferences between grade groups or increase of preference for fast tempos in the upper grades.

The second hypothesis was formed to discover whether there was a significant difference between the preferred styles of music as indicated by researchers and the responses of surveyed music teachers. Researchers in previous studies have made a priori selection and categorization choices, enabling them to cover a wide spectrum of styles. This study was limited by post hoc application of style categories derived from teacher responses. Therefore, the categories which evolved from the survey were more limited and only included "folk", "composed", "patriotic", and "pop".

LeBlanc (1981) noted that style was the strongest factor influencing listening preference. Previous research has indicated a strong preference of pop music over all other genres. Research results document that this preference increases with age, again noting distinct changes between grades three and four (Greer et al, 1973a, 1973b, 1974; LeBlanc 1979, 1981; May, 1985; Rogers, 1957; Shehan, 1985). Folk music was ranked lowest on the style scale in LeBlanc's study (1979) involving 15 styles of music.

The results of this survey show that over all, folk songs were the preferred style of elementary students. Forty-nine percent of the indicated songs were "folk", 34% were "composed", 9% were "patriotic" and 8% were "pop". A one-sample Chi-square test, $\chi^2(3, N=135) = 64.62$, $p<.001$, indicated this finding to be significant.

Style preferences were also observed by grade group. Teachers indicated a preference for "folk" in grades 1-3 with 62% of the songs in this category. "Composed" was the next in favor comprising 31% of the songs listed. There were no "pop" songs chosen as favorites for this age group by music teachers. Teachers indicated a tie between "folk" and "composed" for grades 4-6, each with 26 selections (37%). "Pop" music constituted 16% of the favorite songs listed (see Table 2). The Chi-square test ($\chi^2[3, N=135]=14.92$, $p<.05$), indicated grades 1-3 and 4-6 have significantly different stylistic preferences according to these teachers.

Table 2

Response Distribution of Frequency of Favored Musical Styles by Grade Group

	Style				
Grade	Folk	Composed	Patriotic	Pop	Total
1 - 3	40a	20	5	0	65
	61b	31	8	0	
	60c	43	42	0	
	30d	15	4	0	
4 - 6	26	26	7	11	70
	37	37	10	16	
	39	56	58	1	
	19	19	5	8	
Total	66	46	12	11	135

Note. a=frequency, b=% of row, c=% of column, d=% of total.

When comparing "pop" songs to all other styles for grades 1-6, "pop" songs only comprised 8% of the total. Other styles comprised the other 92% of the favored songs. The one-sample Chi-square test $\chi^2(1, N=144) = 1.1.36$, $p<.001$ indicated that other styles of music significantly outweigh "pop" style choices.

A comparison of "pop" music versus other styles by grade group shows that teachers reported that grades 1-3 unanimously preferred other styles of

music. Grades 4-6 reportedly still preferred other styles, but pop music made up 10% of their preferred music list (see Table 3). A Chi-square test, χ^2 (1, N=144) =11.12, p<.05 indicated a significant increase of preference for pop music as students got older.

Table 3

Response Distribution of Popular vs Other Styles by Grade Group

	Style		
Grade	Pop	Other	Total
1 - 3	0	73a	73
	0	100b	
	0	55c	
	0	51d	
4 - 6	11	60	71
	15	84	
	100	45	
	8	42	
Total	11	133	144

Note. a=frequency, b=% of row, c=% of column, d=% of total.

As a result of these tests, the second null hypothesis was only partially supported and therefore rejected. Musical genres represented by the songs indicated in the survey do not support research results results which name pop music to be the preferred style for music listening. Although pop music was not the preferred style, there was a significant difference in teacher reports of student preference for different age groups. The upper grades were reported to prefer pop styles (15%) to a greater degree than the lower grades (0%).

The third hypothesis was formed to discover if there was a significant difference between the number of pitches in preferred melodies found by McMullen (1974) and those reported by the music teachers. McMullen's study used melodies contrived of five, seven, and twelve pitches and found a preference for melodies made of five or seven pitches over melodies made of twelve pitches. In the present study, the total number of different pitches used in all the songs reported for grades 1-6 was tabulated.

Overall, songs made of seven pitches (25%) constituted the preferred melodies. Melodies made of eight pitches (20%) and nine pitches (15%) were preferred next. Results range from melodies consisting of 3 pitches to melodies consisting of 13 pitches. High numbers (83%) were located in the mid-range, (5-9 pitches) forming a somewhat normal distribution with the exception of an elevated preference for 11-note melodies.

The age factor relating to this variable could not be accurately compared with previous literature. McMullen's study tested only fourth grade students from the elementary school level. Due to the small number of examples available for this study, it was not prudent to make a direct comparison using only fourth grade results. Therefore, the researcher extracted and examined only the three complexity categories (5, 7, and 12 pitch melodies) used in

McMullen's study, combining totals from all six grades. These totals support McMullen's finding, indicating student preference for melodies of seven pitches (69%) and five pitches (29%) compared to melodies with twelve tones (2%). A one-sample Chi-square test $\chi^2(2, N=48) = 32.37$, $p<.001$ indicated this to be significant.

Results of these tests support previous research literature. Therefore, the third null hypothesis was not rejected. Medium levels of complexity, as defined by the number of different pitches, were found in the preferred melodies reported by teachers in this study.

Discussion

Several points of interest appear as a result of the data obtained from this study. One important difference between a study of the "natural" classroom situation and conditions existing during experimental research sessions is how students experience the music they are rating. Experiments often present music examples to subjects only once before preference choices are made. In this study, student preferences were observed using songs that had been actively experienced in class over a period of time. Therefore, a variety of variables not present in the experimental research cited could be influencing student preferences in this study. For example, a student's preceived success with the song could be an influential factor. It also should be noted that most of the previous research examined listening preference responses made by children while this study investigated prefereces for songs sung in music class as reported by teachers.

When tempo was investigated as an isolated variable, subjects indicated preference for faster speeds. Even in other research not directly studying tempo, fast tempo stood out as a preferred characteristic. Conflicting results of this study may be the result of some confusion between the terms "speed" and "rhythm". Definite beat patterns, syncopated rhythms, and subdivided beats may cause a feeling of brightness, or liveliness to the music, resulting its being preferred. Gordon (1989) differentiates between "macro beat" (fundamental beats), and "melodic rhythm" (rhythm of the text). This rhythmic syntax, the arrangement of patterns within a series of patterns, is a perception skill that improves only with age and experience. Young children may be apt to confuse levels of rhythms and perceive songs with fast melodic rhythms over a slow macro beat, as "fast songs". This also may explain why tempo preferences stayed the same throughout the six grades.

Previous research has consistently reported preferences leaning toward "pop" styles of music. While it is possible that this study challenges previous literature, it is more likely that teachers did not report very many "pop" songs because this style is not used very often in the classroom. The lack of stylistic variety may come from limited exposure instead of lack of preference. Many educational theories/methodologies, such as Kodaly and Orff-Schulwerk, stress the use of folk music in the elementary school for their various purposes. Folk music tends to dominate music textbook repertoire. The music choices teachers make for educational purposes may necessitiate limiting stylistic variety. Nevertheless, such an overwhelming amount of music from only two genres may suggest a lack of teaching for music appreciation for all types of music. Because so many songs of the "folk" genre were reported as students' favorites, it may be unwise to make broad generalizations about student preferences. Teachers should be encouraged

that although "pop" music may be what many students prefer for listening, it is not the only genre to which they respond favorablly.

Survey results of this study concerning melodic complexity support previous research. Medium complexity was found to be a preferred musical component. Even so, slight preference displayed for 11-note melodies warns against presuming that individual variables alone are reliable indicators of preferred music. Most of these songs come from the sixth grade list and included two "pop" songs. "Pop" songs and songs composed for older children tend to increase in difficulty. (Eleven-note songs featured passing tones and chromaticism). It is interesting to note that these songs were of medium tempo, but the melodic rhythm had predominant syncopation.

Answers given for the final, open-ended question included many interesting observations. Song texts received the most comments. "Humorous", "age-appropriate", "meaningful", and "easily understood" lyrics were mentioned as indicators of a preferred song. Many described the best tempos as being "bright" or "lively" or "upbeat" and remarked on the importance of rhythm. One teacher observed that, "Songs I can approach in a variety of ways so that they [students] really become familiar [with them] and it [can grow] on them, such as adding instruments, dramatization, movement, partner songs" were preferred by students. This supports results of Shehan's (1984) study, that heuristic approaches are better than didactic approaches. Social influence was also addressed. One teacher said, "traditional music known by older or respected peers, and popular 'hits' currently receiving much attention on radio or television" were what sudents liked. This supports research literature concerning authority and peer influences on preference.

Results of this study suggest that a combination of variables and variable categories give a more accurate picture of developmental influence than individual characteristics. One strength of LeBlanc's theory seems to be its concern for relationships and interaction between influencing variables. Even though specific variables need to be explored, a combination of musical variables may be a more comprehensive way to investigate the developmental process of preference decisions. One surveyed teacher commented, "An aesthetic quality is found when text, melody, and so forth all fit together. This quality can make a song a favorite even if it doesn't follow the 'usual' categories".

Research shows that students can respond favorably to a variety of music. Teachers should be both encouraged and challenged to know that although students may already possess certain musical preferential tendencies, the music educator has the ability to encourage positive responses to other types of music.

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REFERENCES

Baker, D.S. (1980). The effect of appropppriate and inappropriate in-class song performance models on performance preference of third and fourth-grade students. *Journal of Research in Music Education, 28*, 3-17.

Bartlett, D.L. (1973). Effect of repeated listenings on structural discrimination and affective response. *Journal of Research in Music Education, 21*, 302-317.

Baumann, V.H. (1960). Teenage music preferences. *Journal of Research in Music Education, 8*, 75-84.

Blyler, D. (1960). The song choices of children in the elementary grades. *Journal of Research in Music Education, 8*, 9-15.

Farnsworth, P.R. (1950). *Musical taste: Its measurement and cultural nature.* Stanford: Stanford University Press.

Flowers, P.J. (1988). The effects of teaching and learning experiences, tempo, and mode on undergraduates' and children's symphonic music preferences. *Journal of Research in Music Education, 32*, 19-34.

Geringer, J.M. & Madsen, C.K. (1987). Ptich and tempo preferences in recorded popular music. In C. Madsen and C. Prickett (Eds.) *Applications of Research in Music Behavior* (pp. 204-212). Tuscaloosa: University of Alabama Press.

Gordon, E.E. (1989). *Learning sequences in music skill, content and patterns.* Chicago: GIA Publications, Inc.

Greer, R.D. (1981). An operant approach to motivation and affect: Ten years of research in music learning. Documentary report of the Ann Arbor Symposium: National Symposium on the Applications of Psychology to the teaching and Learning of Music. Reston, Va: MENC Publications, 102-121.

Greer, R.D., Dorow, L.G. & Hanser, S. (1973a). Music discrimination training and the music selection behavior of nursery and primary school children. *Bulletin for the Council of Research in Music Education, 21*, 181-192.

Greer, R.D., Dorow, L.G., & Randall, A. (1974). Music listening preferences of elementary school children. *Journal of Research in Music Education, 22*, 284-291.

Greer, R.D., Dorow, L.G., Wachhaus, G., & White, E.R. (1973b). Adult approval and students' music selection behavior. *Journal of Research in Music Education, 21*, 345-354.

Hedden, S.K. (1981). Music listening skills and music listening preferences. *Bulletin of the Council for Research in Music Education, 65*, 16-26.

LeBlanc, A. (1979). Generic style music preferences of fifth-grade students. *Journal of Research in Music Education, 27*, 255-270.

LeBlanc, A. (1980). Outline of a proposed model of sources of variation in musical taste. *Bulletin of the Council for Research in Music Education, 61*, 29-34.

LeBlanc, A. (1981). Effects of style, tempo, and performing medium on children's music preference. *Journal of Research in Music Education, 29*, 134-156.

LeBlanc, A. & McCrary, J. (1983). Effect of tempo on children's music preference. *Journal of Research in Music Education, 31*, 283-294.

LeBlanc, A., Colman, J., McCrary, J., Sherrill, C., & Malin, S. (1988). Tempo preferences of different age music listeners. *Journal of Research in Music Education, 36*, 156-168.

May, W.V. (1985). Musical style preferences and aural discrimination skills of primary grade school children. *Journal of Research in Music Education, 33*, 7-22.

McMullen, P.T. (1974). Influence of number of different pitches and melodic redundancy on preference responses. *Journal of Research in Music Education, 22*, 198-204.

Price, H.E. (1986). A proposed glossary for use in affective response lilerature in music. *Journal of Research in Music Education, 34*, 151-159.

Rogers, V.R. (1957). Children's musical preferences as related to grade l evel and other factors. *The Elementary School Journal*, 57, 433-435.

Shehan. P.K. (1984). The effect of instruction method on preference, achievement and attentiveness for Indonesian Gamelan music. *Psychology of Music, 12*, 34-42.

Shehan, P.K. (1985). Transfer of preference from taught to untaught pieces of non-western music genres. *Jouranal of Research in Music Education, 33*, 149-158.

Sims, W.L. (1987). Effect of tempo on music preference of preschool through fourth-grade children. In C. Madsen and C. Prickett (Eds.) *Applications of Research in Music Behavior* (pp. 15-25). Tuscaloosa: University of Alabama Press.

Wapnick, J. (1976). A review of research on attitude and preference. *Council for Research in Music Education, 48*, 1-20.

ATTITUDES OF HIGH SCHOOL BAND DIRECTORS TOWARD THE VALUE OF MARCHING AND CONCERT BAND CONTESTS AND SELECTED ASPECTS OF THE OVERALL BAND PROGRAM

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Band contests became established components of music education in the United States beginning with the National School Band Contests of the 1920s and 1930s (Moore, 1968). In 1973, nearly 2 million students participated in high school marching and concert band contests throughout the United States (Osterndorf & Horn, 1976). In Ohio, for example, the Ohio Music Education Association (OMEA) annually sponsors high school marching and concert band contests at the district and state levels. Bands that receive an overall superior (I) rating at one of the district level contests may then advance to the OMEA State Finals Contest. The 1990 OMEA State Marching Band Finals Contest featured 125 high school bands, involving over 10,000 students from 300 high schools that had originally participated at the district level, or 40% of the high school bands in the state (Guegold, 1990a). Furthermore, the 1991 OMEA-sponsored State Concert Band Contest included 182 bands from 17 district level contests ("1991 Contest Ratings," 1991).

In spite of the popularity of band contests and the large number of students that participate in these contests, band directors' opinions concerning the effects and influence of band contests on high school band programs are generally divided (Burnsed, Sochinski, & Hinkle, 1983). This division of opinion appears to stem from three schools of thought concerning band contest participation: (a) bands should exclusively participate in concert band contests, (b) bands should exclusively participate in marching band contests, and (c) bands should participate in both marching and concert band contests. Of the three schools of thought concerning band contest participation, there seems to be little controversy in regard to the contributions associated with concert band contests, but there seems to be a particular division of opinion in regard to the attitude of band directors toward the relevance of marching band competition and its effect on the school band program (Burnsed, Sochinski, & Hinkle, 1983).

Marching band competitions became increasingly popular during the decade of the 1970s (Culbert, 1979). In studies related to marching band contest popularity, Rogers (1985) conducted an investigation concerning marching band contest participation and found that on a national scale, 62% of 324 high school bands surveyed from four different regions of the United States participated in marching band contests. Guegold (1990b) reported that 47 states sponsored marching band contests.

The advantages or disadvantages associated with marching band competitions and their influence on school band programs are still being formulated by music educators. Drake (1981) administered a National Band Association Questionnaire to 164 band directors around the country. Results of the questionnaire revealed that marching band contests were considered the most problematic aspect of the high school marching band. One of the problems associated with marching band contests has been the lack of exposure to a variety of musical styles (Garrison, 1986). Whitwell (1972) stated that exposing marching band students to only four or five musical selections during a marching band season which usually involves 10-12

weeks during the fall semester plus summer rehearsals is a concern of music educators. In a study conducted by Burnsed and Sochinski (1983) it was found that some bands only rehearsed one marching band show (the same music and drill continually) from the summer months until the end of the marching band season in hopes of winning competitions. A similar study by Snapp (1980) raised questions concerning the additional amount of extracurricular practice time that marching band competition requires of its participants. The study by Snapp also suggested that marching bands that perform the same four or five selections during the marching band season may not develop strong sight-reading skills. In other related literature, Garrison (1986) reported that marching band critics believe that public attention given to marching band contest participation prevents the school communities from realizing what should be emphasized in music education.

In contrast to negative opinions expressed concerning marching band contest participation, Wells (1976) stated that marching band contests provide an aesthetic experience for their participants which is experienced both intellectually and emotionally. A belief in the aesthetic potential of marching band contests is supported by band directors who have adopted the drum corps style for their competitive bands (Garrison, 1986). Other research supporting marching band contest participation has stated that the improvement in student motivation and discipline as well as improvement in parental, public, and administrative support outweighs the musical disadvantages (Clem, 1978).

While the importance of participation in high school band contests is discussed as it relates to students' playing skills, motivation, sight-reading abilities, and overall musicianship, the attitudes of band directors concerning band contests is still a puzzling issue. Are there differences in attitudes of high school band directors whose bands participate (a) exclusively in concert band contests, (b) exclusively in marching band contests, or (c) in both marching and concert band contests? While it is believed by some band directors that band contest participation is a necessary part of public school music education at the high school level, little systematic research has been conducted on this topic.

The purpose of this study was to explore certain attitudes held by band directors regarding marching band contests, concert band contests, and some other aspects of the band program. Specifically, this study was designed to determine whether any significant differences existed between attitudes of band directors who participated exclusively in concert band contests; those who participated exclusively in marching band contests; and those who participated in both marching and concert band contests.

Procedure

Subjects were randomly selected from a list of over 300 high school band directors from 17 Ohio Music Education Association districts whose bands participated in the 1990 State Marching Band Finals and/or the 1991 State Concert Band Contest. The researcher-developed "Ohio Band Questionnaire" (OBQ) was sent to 200 high school band directors. One hundred and thirty-three completed questionnaires (N = 133) were received from the 200 high school band directors, for a return rate of 66.5%.

The OBQ was developed to record subjects' responses to 30 descriptive items intended to assess directors' attitudes regarding the categories of (a) marching band contests, (b) concert band contests, and (c) school band programs.

Results

Data from the OBQ were analyzed for possible significant differences ($p < .05$) utilizing one-way ANOVA procedures. The dependent variable consisted of the 30 OBQ descriptive items, each having a 4-point Likert-type response scale. A separate one-way ANOVA was computed for each of the 30 descriptive items from the OBQ. The independent variable was band contest participation, which was divided into three levels: (a) concert band only (CBC) contest participation, (b) marching band only (MBC) contest participation, and (c) both marching and concert band (MBC/CBC) contest participation.

The 30 items relating band director's attitudes are grouped under three headings: (a) "Marching Band Items," (b) "Concert Band Items," and (c) "Band Program Items." Of the 30 descriptive items found in the OBQ, 13 items pertain to marching band contests, 10 items pertain to concert band contests, and 7 items pertain to the overall high school band program.

Marching Band Items

Analyses were computed using separate one-way ANOVAs on the 13 descriptive items which pertain to marching band contests. Significant mean differences were found among MBC, CBC, and MBC/CBC directors' attitudes in 11 of the 13 descriptive items: #1, #2, #3, #4, #5, #7, #9, #10, #14, #15, and #19. No significant differences were found in items #12 (conteSt classification) and #13 (decision to participate).

Post hoc analyses, in which post hoc tests based on a two-tailed test criterion are reported as a t-value in which the pooled mean square error from the analysis of variance and the t-value based on the separate variance estimates are analyzed, were computed comparing the directors' attitudes on the 11 marching band items showing a significant difference (see Table 1). On most of the items, MBC and BMC were not significantly different, item #10 being the only exception. MBC directors (item #10) disagreed that an enforced limit should be placed on a band's participation in district marching band contests. Table 1 shows that generally CBC directors expressed a difference in attitude from MBC and MBC/CBC directors on descriptive items pertaining to marching band contests. The mean response ratings by MBC and MBC/CBC directors across the majority of items were higher than the mean response ratings of CBC directors. Band directors whose bands participate in marching band contests (MBC and MBC/CBC) generally viewed marching band contests and factors related to students' playing skills, self-esteem, and motivation, as well as other factors, more positively than directors whose bands do not participate in marching band contests (CBC).

Table 1

Summary of Post Hoc Comparisons for Marching Band Descriptive Items

Item	Text	Post Hoc Analysis		
1.	Improvement in students' playing skills	CBC	MBC/CBC	MBC
	*Sample mean: 3.157 SD: .8948	2.3514	3.4651	3.50
2.	Enhancement of students' self-esteem	CBC	MBC/CBC	MBC
	*Sample mean: 3.30 SD: .8070	2.4865	3.58	3.90
3.	Enhancement in students' motivation	CBC	MBC/CBC	MBC
	*Sample mean: 3.43 SD:. 8470	2.5946	3.744	3.90
4.	Band program enrollment retention	CBC	MBC/CBC	MBC
	*Sample mean: 2.827 SD: 1.055	1.675	3.267	3.30
5.	Recruitment for feeder program	CBC	MCB/CBC	MBC
	*Sample mean: 2.87 SD: 1.018	1.864	3.255	3.30
7.	Improvement in students' sight-reading	CBC	MCB/CBC	MBC
	*Sample mean: 1.78 SD: .8881	1.297	1.965	2.10
9.	Students' participation in district contests	CBC	MCB/CBC	MBC
	*Sample mean: 2.646 SD: 1.16	1.567	3.011	3.50
10.	Contest participation limit enforcement	MBC	MCB/CBC	CBC
	*Sample mean: 2.78 SD: 1.22	1.80	2.65	3.35
14.	Ratings versus caption awards	MBC	MBC/CBC	CBC
	*Sample mean: 2.48 SD: 1.17	1.80	2.27	3.16
15.	Performance quality	CBC	MBC/CBC	MBC
	*Sample mean: 3.06 SD: .9829	2.08	3.40	3.70
19.	Sanctioned contests	CBC	MBC/CBC	MBC
	*Sample mean: 2.65 SD:. 1.28	1.40	3.12	3.20

N = 133.
Means connected with a solid line are not significantly different.
CBC: Designates concert band only.
MBC: Designates marching band only.
MBC/CBC: Designates both marching and concert bands.

Concert Band Items

Analyses were computed using separate one-way ANOVAs on the 10 descriptive items pertaining to concert band contests. No significant mean differences were found among MBC, CBC, and MBC/CBC directors on 8 of the 10 descriptive items: #21 (improvement in playing), #22 (enhancement of self-esteem), #23 (enhancement in motivation), #24 (band program enrollment retention), #25 (improvement in sight-reading), #26 (participation

in district contests), #27, (classification based on school enrollment) and #28 (participation decision, made by band directors). Significant mean differences were found among the directors on items #29 and #30. These findings indicate attitudinal agreement among MBC, CBC, and MBC/CBC directors about the benefits of concert band contests.

Post hoc analyses were computed comparing the directors' attitudes on the two items showing a significant difference (see Table 2). Pertaining to item #29, MBC/CBC directors expressed significantly higher attitudes than MBC and CBC directors about the ability of concert band contests to improve overall performance quality. MBC directors expressed less concern about concert band contests than CBC and MBC/CBC directors (item #30). The analysis also indicates that band directors from the CB and MB/CB category would be more disappointed than MB directors if sanctioned concert band contests were not scheduled (see Table 2).

Table 2

Summary of Post Hoc Comparisons for Concert Band Descriptive Items

Item	Text	Post Hoc Analysis		
29.	Improvement in performance quality	MBC	CBC	MBC/CBC
	*Sample mean: 3.78 SD: .5271	3.50	3.62	3.88
30.	Sanctioned concert band contests	MBC	CBC	MBC/CBC
	*Sample mean: 3.51 SD: .8221	2.70	3.43	3.65

N = 133.
Means connected with a solid line are not significantly different.
CBC: Designates concert band only.
MBC: Designates marching band only.
MBC/CBC: Designates both marching and concert bands.

Band Program Items Analyses

Analyses were computed using separate one-way ANOVAs on seven descriptive statements which pertain to the overall high school band program. Significant mean differences were found among MBC, CBC, and MBC/CBC directors' attitudes in five of the seven descriptive items: #6, #8, #16, #17, and #18. No significant differences were found in items #11 (marching band performance at football games) and #20 (marching band and concert band schedule).

Post hoc analyses of items #6, #8, #16, #17, and #18 were computed comparing directors' attitudes (see Table 3). MBC and MBC/CBC expressed a similar attitude pertaining to items #8, #16, #17, and #18. In reference to these items, CBC directors viewed the high school band program differently than MBC and MBC/CBC directors. In particular, CBC directors indicated a difference in attitude concerning the high school band program and marching band related items from the OBQ. The majority of the mean response item ratings by MBC and MBC/CBC directors were higher than mean response ratings of CBC directors. Pertaining to descriptive item #6, a difference in attitude exists between all three levels of directors (MBC, CBC, and

MBC/CBC) concerning students' preference of marching band or concert band.

Table 3

Summary of Post Hoc Comparisons for Band Program Descriptive Items

Item	Text		Post Hoc Analysis		
6.	Students' band preference		CBC	MCB/CBC	MBC
	*Sample mean: 2.66	SD: 1.035	1.945	2.88	3.50
8.	Students' music preference		CBC	MCB/CBC	MBC
	*Sample mean: 2.31	SD: .8909	1.837	2.46	2.80
16.	Community support/school spirit		CBC	MCB/CBC	MBC
	*Sample mean: 3.18	SD: .9198	2.37	3.47	3.60
17.	Parental support		CBC	MBC/CBC	MBC
	*Sample mean: 2.54	SD: 1.11	1.67	2.82	3.40
18.	Primary marching band role		MBC	MBC/CBC	CBC
	*Sample mean: 1.86	SD: .9753	1.50	1.69	2.35

$N = 133$.
Means connected with a solid line are not significantly different.
CBC: Designates concert band only.
MBC: Designates marching band only.
MBC/CBC: Designates both marching and concert bands.

Discussion

Many high school bands in the United States today participate in marching and concert band contests. The purpose of this study was to determine if there were differences in attitudes among high school band directors whose bands participate exclusively in marching band contests (MBC), those whose bands participate exclusively in concert band contests (CBC), and those whose bands participate in both marching and contest band contests (MBC/CBC) on items pertaining to marching band contests, concert band contests, and the overall band program.

The results indicate that band directors' attitudes differ with regard to marching band contest participation. MBC and MBC/CBC directors have a more positive attitude than CBC directors. MBC and MBC/CBC directors view marching band contest participation as more beneficial to the students involved than do CBC directors. Perhaps this attitude difference is the cause of the decision to participate or not participate in marching band contests rather than the result; perhaps the responses reflect a difference in philosophical perspective between directors whose bands do and do not participate in marching band contests. Possibly, directors whose marching band emphasis is on musical aspects may be more inclined to participate in marching band contests than directors who view marching band as primarily a show band for entertainment at football games. Guegold (1990a) notes that "drum corps" style of marching band is prominent today. In drum corps

style, the musical effect is enhanced through visual portrayals with drill and flags. It could be that MBC and MBC/CBC directors who are confident with drum corps style and view it as a music education experience tend to participate in marching band contests. Conversely, CBC directors may not have had training in combining the elements of drum corps style performance, or they may not view it as an effective means of music education. Therefore, they refrain from having their bands participate in marching band contests where their performances would be out of date, most likely resulting in a negative experience for their students, and yielding limited educational benefits. Other less favorable attitudes concerning marching band contests that exist among CBC band directors may be related to their unwillingness or inability to spend the additional amount of extracurricular rehearsal time necessary for a competitive marching band. This view is consistent with findings by Snapp (1980).

Few differences in attitudes were found among MBC, CBC, and MBC/CBC directors concerning items from the OBQ related to concert band contest participation. Band directors have a positive attitude toward concert band contest participation, all indicating that they think it is educationally beneficial to their students. The consensus among band directors is that concert band contest participation improves students' musicianship, builds character, and helps to sustain a sound instrumental music program. Perhaps this positive attitude could be based on the long tradition associated with concert band contests and the familiarity of concert band contests among band directors.

Based on results from this study, it may be concluded that CBC directors expressed uniformly higher attitudes than did MBC and MBC/CBC directors on all items pertaining to the band's function in the school band program. Only in projecting their impressions of students' preferences for marching band did all three groups of directors differ in their attitude. CBC directors seem to be the most negative on items concerning the marching band's place in public education. Perhaps this attitude is connected to the CBC directors' views that concert band is linked to a strong instrumental music program and develops students' musicianship skills, promotes musical aesthetics, and is an antithesis for the marching band which is a "required" nonmusical performing group. Conversely, the difference in attitude expressed by MBC and MBC/CBC directors concerning the school band program indicates that marching band is an important part of the high school instrumental music program. Perhaps these directors think that marching band contest participation will improve the overall musicianship of the students and that it is beneficial for developing an educationally sound school band program at the secondary level.

Summary and Conclusions

When responding to items about the marching band, the three groups of directors divide into those who participate in marching band contests (MBC and MBC/CBC) and those who do not (CBC). When responding to items about concert band, there is little attitudinal difference among the three groups. When responding to items about the high school band program, the three groups divide on the issue concerning the role of the marching band. Some directors expressed higher attitudes towards programs and activities in which they participated. It is immaterial whether the beliefs or attitudes caused the participation or whether participating developed greater understanding and more positive attitudes. Perhaps some of these directors

place a great deal of value in extramusical or even educational objectives. Regardless, these data suggest that attitudinal differences exist and that those differences are projected onto the preferences ascribed to the students of these directors.

Band directors may want to examine the purpose of having the marching band in today's secondary public schools. Is the high school marching band an effective means of music education? Does participation in marching band, and/or marching band contests improve students' musicianship, and provide a basis for musical aesthetics, or does it simply provide an entertainment medium for the public?

Since very little systematic research exists today pertaining to high school band directors' attitudes towards marching and concert band contest participation, it is recommended by this researcher that more research should be conducted pertaining to this topic. Administration of a questionnaire in a study designed to compare band directors of different experience levels (10 years, 20 years, etc.), band director attitudes representing different states, and programs that emphasize different marching band styles and different contest requirements are fruitful areas for further research.

REFERENCES

Burnsed, V., & Sochinski, J. (1983). Research on competitions. *Music Educators Journal, 10*, 25-27.

Burnsed, V., Sochinski, J., & Hinkle, D. (1983). The attitude of college band students toward high school marching competition. *Journal of Band Research, 19*, 11-18.

Clem, D. (1978). Is evening that important? *The Instrumentalist, 33*(2), 144.

Culbert, M. E. (1979). Scheduling marching activities: How much is enough? *Tempo, 3*, 27.

Drake, A. (1981). *National Band Association band questionnaire.* Ada, OK: National Band Association.

Garrison, P. K. (1986). The value of marching band. *Music Educators Journal, 72*(1), 49-52.

Guegold, W. K. (1990a, May-June). A history of the Ohio Music Education Association state marching band finals. *Triad*, pp. 41-42.

Guegold, W. K. (1990b). An analysis of the adjudication results in the 1986-1988 Ohio Music Education Association state marching band finals with an emphasis on adjudicator consistency (Doctoral dissertation, Kent State University).

Moore, J. E. (1968). The national school band contests from 1926 to 1931 (Doctoral dissertation, University of Michigan). *Dissertation Abstracts International, 29*, 2743-A.

1991 contest ratings. (1991, February-March). *Triad*, p. 27.

Osterndorf, L. C., & Horn, P. J. (1976). *Course offerings, enrollments, and curriculum practices in public secondary schools.* Washington, DC: U.S. Government Printing Office.

Rogers, G. L. (1985). Attitudes of high school band directors and principals toward marching band contests. *Journal of Band Research, 33*, 259-267.

Snapp, K. (1980). Corps style marching: A blessing or a curse? *The School Musician, 5*, 6-13.

Wells, J. R. (1976). *The marching band in contemporary music education.* New York: International Publishings.

Whitwell, D. (1980). *A new history of wind music.* Evanston, IL: The Instrumentalist Company.

THE EFFECT OF CHORAL PROGRAM SIZE, TEACHER EXPERIENCE, AND TEACHER EDUCATION LEVEL ON THE SELECTION OF HIGH SCHOOL CHORAL MUSIC LITERATURE

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Doctor of Musical Arts
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Abstract

The purpose of this study was to determine whether choral program size, teacher experience, and teacher education affect choral music literature choices for high school choirs. Of additional interest was whether a generally accepted hierarchy of music selection criteria exists. All high school choral music educators in Missouri were sent surveys to obtain data concerning (a) choral program size, teacher experience, and teacher education level, (b) three representative choral works from the 1990-1991 repertoire, and (c) the reasons why these pieces were selected for use with the choirs.

The Missouri Choral Literature Survey (MCLS) was mailed to 576 high schools, and 148 (25.7%) usable surveys were returned. Respondents reported that (a) 64.2% of choral programs were small (one or two curricular ensembles) and 35.8% were large (three or more curricular ensembles); (b) 23.1% had one to three years of experience versus 76.9% reporting four or more years experience; and (c) 55.4% held Bachelor's degrees while 44.6% had earned graduate degrees. Selected representative music was analyzed according to four characteristics (sacred versus secular text, accompaniment. language, and style). Results indicated that (a) sacred and secular texts were almost evenly distributed (52.7% sacred, 47.3% secular), (b) accompanied works comprised 65.0% versus 35.0% unaccompanied, (c) pieces in English comprised almost 70% of the listed pieces, and (d) 20th century works comprised almost 70% of the total repertoire reported. Choral educators with small programs performed significantly ($p < .05$) more accompanied music, more pieces in English, and more 20th century music. Teachers with less experience chose significantly ($p < .05$) more accompanied music and more 20th century works. Teachers with graduate degrees selected significantly ($p < .05$) more music with sacred texts.

The study also found that significant correlations ($p < .01$) existed between selection criteria hierarchies used by teachers with different choral program sizes, experience levels and education levels. High priority criteria included personal appeal to the teacher, musical quality, teaching goals, and preparation factors. Student appeal, programming, text, and audience appeal were found to be moderately important, while style/historical factors, accompaniment, score design/clarity, and cost were least important. This study provides information which may assist in the development of more systematic high school choral literature selection. Further research is suggested that would continue to examine the issue of course content in high school choruses.

THE EFFECT OF A SYSTEMATIC CHORAL WARM-UP STRATEGY ON STUDENT PTICH-MATCHING SKILLS, KNOWLEDGE OF INTONATION CONCEPTS, AND SELF-REPORTED ATTITUDES TOWARD SINGING

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Abstract

Many authorities in choral music education agree that good intonation is an essential attribute of choral performance. Methods used to improve choral ensemble intonation are varied and may be based upon inaccurate assumptions.

The purpose of this study was to investigate the influence of a systematic choral warm-up strategy on students' pitch-matching skills, knowledge of intonation concepts, and self-reported attitudes regarding their ability to discriminate pitch and sing in tune. Advanced high school chorus students (N=130) representing four suburban school systems within the states of Missouri and Kansas served as subjects for this study. Students (n=63) in the advanced choirs of two of the schools were assigned to an experimental group while students (n=67) representing select choirs of two other schools were assigned to a control group.

Groups were pretested on pitch matching skills, knowledge of intonation concepts and self-reported attitudes toward abilities to discriminate pitch and sing in tune. The experimental treatment (five minute choral warm-ups) was applied over a seven-week (20 session) period. Following treatment, groups' pitch-matching skills, knowledge, and attitudes were posttested, for subsequent comparison.

Pretest pitch matching scores (mean cents) indicated no statistically significant differences between experimental and control groups (t= -1.75, df=128, p >.05). A statistically significant difference was found between posttest pitch matching scores with the experimental group exhibiting more accurate pitch matching skills than the control group (t= -2.26, df=128, p <.05). An analysis of group pretest to posttest pitch matching scores revealed no statistically significant differences, although the experimental group progressed slightly (n= -4.40 cents), while the control group regressed in pitch-matching skills (n= +6.89 cents).

Analysis of the knowledge evaluations revealed statistically significant differences in pretest-posttest gain scores for both groups. Experimental group subjects possessed statistically significantly more knowledge about concepts related to intonation and vocal pedagogy after treatment than the control group (t= 2.38, df= 128, p <.05).

Comparisons of group attitude posttest results indicated statistically significant differences as experimental group attitudes toward warm-ups and self-reported singing skills became more positive (t= -2.46, df=62, p <.05) while control group attitudes became slightly more negative (t= .27, df =66, p >.05).

PERSONALITY CHARACTERISTICS OF MUSIC EDUCATORS AND PERFORMERS AS MEASURED BY THE MYERS-BRIGGS TYPE INDICATOR AND THE BEM SEX-ROLE INVENTORY

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Abstract

Purpose. This study was designed to examine and compare characteristics of music educators' and music performers' personalities.

Procedures. Personality type, as measured by the Myers-Briggs Type Indicator (MBTI), and psychological androgyny, as determined by the Bem Sex-Role Inventory (BSRI), were the personality characteristics evaluated in an effort to learn more about musicians who had selected either music education or music performance as careers. The music educator sample (MES, *N*=56) and the music performer sample (MPS, *N*=56) each consisted of graduate students enrolled in prominent university schools of music.

Findings. Comparisons of the MES and MPS indicated that there were no significant differences between the groups for each of the four MBTI dimensions (i.e., Extraversion-Introversion, Sensing-Intuiting, Thinking-Feeling, and Judging-Perceiving). For both samples, the modal-type ENFP and the proto-type ENFJ were found. When the psychological classifications on the BSRI (i.e., androgynous, masculine, feminine, or undifferentiated), were compared for both samples, no significant differences were found. Androgyny was identified as the modal psychological characteristic of both music educators and performers. Physiological gender was found to be a significant factor *only* among females in the MES and *only* for the BSRI classification of androgyny.

Conclusions. Results of this study indicate that musicians who are educators and musicians who are performers may be more alike than different with regard to personality type and psychological androgyny. Although these individuals may choose to either teach or perform, music seems to be one common factor that may account for the similarities in the MBTI personality type preferences and for the BSRI classifications.

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