

*The purpose of this study was to determine the effects of expressive variation in dynamics on the musical preferences of elementary school students. Participants were 315 students in Grades 1-5 who attended two urban elementary schools. The music teacher administered a music preference test that presented two versions each of 10 folk songs. One version of each song used expressive variation in dynamics; the other was consistently even in dynamics and other expressive variables. Analysis of the results indicated that a significant proportion of students at each school preferred the expressive versions of 6 different songs. Between the two schools, seven expressive versions were preferred. Age did not seem to have a systematic effect. It was speculated that different dynamic interpretations of the three nonsignificant folk songs may have produced different responses. Recommendations were made concerning the importance of expressive performance in elementary music education.*

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## The Effects of Expressive Variation in Dynamics on the Musical Preferences of Elementary School Students

This report is the second of a series of investigations into the effects of expressive performance in music education. Although the importance of expressive performance is generally accepted, research into the effects of expressive performance in music education is virtually nonexistent. If it can be demonstrated that expressive performance has a positive effect on the musical preferences of students, the implications for music educators will be significant.

Expressive performance was first studied by Seashore (1938), who believed that "the medium of musical art lies primarily in artistic deviation from the fixed and regular" (p. 29). Seashore found that performers used much variation in intensity and duration to achieve expressive effect. More recent research has substantiated Seashore's findings (Gabrielsson, 1987; Sundberg, Askenfelt, & Fryden, 1983). These studies, which have been primarily analytical, reveal that per-

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formers manipulate dynamics and duration to achieve expressive effect. As a general rule, dynamics increase and decrease with the rise and fall of the melodic contour. Duration varies in an opposite manner; note values decrease as the contour rises and increase as the contour falls. Duration increases also delineate phrases.

LeBlanc (1987) has proposed a theory of musical preference decision “based upon the interaction of input information and the characteristics of the listener, with input information consisting of the musical stimulus and the listener’s cultural environment” (p. 139). LeBlanc identifies physical properties, complexity, referential meaning, and performance quality as components of the musical stimulus that interact and influence the musical preference decisions of listeners.

Dynamics have been shown to be related to mood, expressive effect, and performance evaluation (Ortmann, 1927; Seashore, 1938; Gordon, 1960; Burnsed, Hinkle, & King, 1985). Given LeBlanc’s theory (1987), it seemed logical that dynamics may also influence preference decisions. Additionally, Nakumara (1987) and Geringer (1991, 1992) have shown that dynamic change is readily perceived by both children and adults.

The purpose of the present study was to determine the effects of expressive variation in dynamics on the folk-song preferences of elementary school students. It is an investigation of the relationship between two of LeBlanc’s (1987) input variables, the physical properties and the performance quality of music, and musical preference decisions. Burnsed and Sochinski (1995) found that a significant proportion of middle school band and choir students preferred versions of folk songs with expressive variation in dynamics to those in which the dynamics were held constant. This was not unexpected, since those students were somewhat select—they attended a music camp—and they had received performance-group training where dynamic variation may have been taught as a part of performance technique. The present study sought to determine whether expressive variation in dynamics might affect the preferences of the typical elementary student, who attends music class only once or twice a week. Preference was defined as “an act of choosing, esteeming, or giving advantage to one thing over another” (Price, 1986).

## METHOD

A pilot study was conducted to determine the feasibility of administering the preference test to elementary students by computer. A Macintosh LC computer, with an accompanying Yamaha WT 11 Wind Tone Generator and headphones, was placed in the general music classrooms of two suburban elementary schools in southwestern Virginia. Over a period of approximately 6 months, 123 grade K–5 students completed Music Impression Expression (Bishop, 1993), a test designed to measure preference for the use of expressive variation in dynamics in folk songs.

Music Impression Expression is a *Hypercard* (1991) stack written in

the *Hypertalk* programming language. Two versions each of 10 folk songs are included in the stack. For the nonexpressive versions, all attacks, releases, decays, and volumes are set equally. For the expressive versions, the dynamics vary to follow the rise and fall of the musical phrase. A flute tone without vibrato was selected as the timbre for the folk songs.

The songs were selected from *150 American Folk Songs to Sing, Read and Play* (Erdei, 1974). Melodies were selected for moderate complexity and varied contours. The songs were "The Bell Cow," "Chase the Squirrel," "Chickalileelo," "Who Killed Cockrobin?," "Oh, Fly around My Pretty Little Miss," "Jim along Josie," "Old Lady Sittin' in the Dining Room," "Pourquoi," "Sailing over the Ocean," and "Sourwood Mountain."

The results of the pilot study were inconclusive. Reliability coefficients were low and the students did not seem to choose expressive or nonexpressive versions of the folk songs in a meaningful pattern. There were no consistent effects for expressive dynamics or the age of the students. It was speculated that perhaps the computer administration of the test was a confounding factor. The elementary school students in the pilot study worked semi-independently, and they may not have been able to follow computer given instructions or complete tasks as purposefully as they would have in a teacher directed group administration. Therefore, it was decided that a group administration of the preference test would be used in the main study.

In the main study, participants were students from the first through the fifth grades at two urban elementary schools in southwestern Virginia. The communities represented by the two schools were both suburban and inner-city, with a variety of ethnic groups of various income levels. The students were taught by the same music teacher for 30 minutes a week in general music.

Music Impression Expression was again used to measure the effect of expressive variation in dynamics on the folk-song preferences of the participants. This time the teacher administered the test with a Macintosh LC computer, a Yamaha WT 11 Wind Tone Generator, and two Yamaha MS 101 powered monitor speakers. Each participant was given an answer sheet, and the music teacher read instructions prepared by the researcher, which were similar to those recommended by Sims (1987). The teacher guided the participants through the answer sheet as each example was performed by the computer. After approximately 3 weeks, the students at both schools had completed the preference test. At School A, 172 participants completed the test; at School B, there were 143 participants.

## RESULTS

Table 1 gives the participant population by grade at each school. Reliability coefficients (Cronbach's alpha) for Music Impression Expression were computed for the total participant population at each

Table 1  
*Number of Participants by Grade*

School	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Total
A	32	40	28	39	33	172
B	25	16	29	33	40	143

school. They were the following: School A = .53; School B = .51. These coefficients were less than desirable. However, it was believed that the large sample size (315) compensated for the lower reliability (Ferguson, 1976). Given the sample size, the age of the participants, and the nature of the test the data were deemed worthwhile for further analysis. A one-sample multivariate analysis of variance (MANOVA) rejected the null hypothesis that the proportion of expressive choices for all 10 of the songs was 0.5 (Wilk's lambda,  $F = 16.6$  for School A,  $F = 6.41$  for School B,  $p$  value  $< .0001$  in both cases).

Following this overall rejection, separate  $z$  tests were conducted to determine whether a significant proportion of students by grade level preferred one version of each folk song over the other. This analysis is equivalent to a chi square test for homogeneity of proportions. Tables 2 and 3 show the  $z$  scores for each grade level at each school. Negative scores indicate ratios in favor of the nonexpressive version of the folk song. Although students at the higher grade levels seemed to achieve more significant  $z$  scores at School B, this was not the situation at School A, where significant  $z$  scores were more evenly spread among the grades.

Since there was no meaningful effect of age for both populations, the data were collapsed at each school, and  $z$  tests conducted on each song for the total participant population at each school. Table 4 reports the proportion of expressive choices and the  $z$  scores for each song at the respective schools. Students at both schools significantly preferred the nonexpressive version of Song 1 and were undecided about Songs 6 and 8. For Songs 4 and 7, students at one of the schools significantly preferred the expressive versions, and for the remaining 5 songs, students at both schools significantly preferred the expressive performance.

## DISCUSSION

The conclusions drawn from this study are somewhat limited by the population. Students were from intact music classes in two elementary schools in southwest Virginia. Additionally, the reliability coefficients of the tests were somewhat low. Many might consider them too low. Aiken

Table 2  
*The z Scores by Grade Level for each Folk Song (School A)*

Song	1	2	3	4	5
1	0.35	-1.63	-3.05*	-3.48*	-1.24
2	1.46	2.36*	0.00	0.48	3.45*
3	3.84*	1.29	3.05*	4.56*	10.57*
4	1.86	1.63	-0.37	0.48	-0.88
5	2.28*	4.16*	2.02*	3.99*	2.46*
6	0.71	0.00	-1.16	-0.48	0.88
7	3.84*	1.29	3.05*	1.83	3.45*
8	-0.71	0.95	1.57	-0.80	0.52
9	-0.71	2.76*	2.02*	-0.16	2.03*
10	3.26*	1.29	0.50*	3.02*	5.58*

\*  $p < .05$

(1976) considers a reliability coefficient as low as .65 acceptable, whereas others find coefficients as low as .50 acceptable (Guilford, 1954; Ferguson, 1976). As mentioned previously, the researcher considered the sample size adequate to allay some reliability concerns. However, readers are cautioned to consider the reliability coefficients as they interpret the results.

Given the above concerns, the results of this study indicate that expressive dynamics have a positive effect on the folk-song preferences of elementary students. A significant proportion of students at each school preferred the expressive versions of 6 different songs. Between the two schools, 7 expressive versions were preferred. These results support the findings of Burnsed and Sochinski (1995) and underscore the importance of expressive performance in music education.

It seems that a contributing factor to the results of the pilot study was the computer administration of Music Impression Expression. Although the computer administration of the preference test had proven successful with older students (Burnsed & Sochinski, 1995), this was not the situation in the pilot study. The students in the pilot study may not have understood the instructions as given by the computer, or perhaps they just didn't complete the preference test as purposefully as did those in the main study.

An important finding of this study was the noneffect of age or grade level on the students' preferences for the use of expressive dynamics in

Table 3  
*The z Scores by Grade Level for each Folk Song (School B)*

Song	1	2	3	4	5
1	-1.02	-1.03	-1.33	-1.24	-2.36*
2	-1.45	1.61	3.25*	0.17	2.76*
3	1.02	1.03	1.33	1.62	5.40*
4	1.45	1.61	-0.18	1.24	3.65*
5	1.92	1.61	2.20*	0.52	7.17*
6	-0.20	-1.61	1.33	0.52	1.63
7	-1.45	0.00	0.94	0.52	1.29
8	0.60	0.50	0.18	-0.88	-1.63
9	0.60	2.30*	0.94	2.03*	3.65*
10	0.60	1.03	1.33	-0.52	2.76*

\* $p < .05$

folk songs. Although there were differences between grade levels, these differences were not consistent nor indicative of a systematic effect for age. The majority of the students in the main study were able to listen to and compare two versions of the same folk song and make a choice based upon the expressive manipulation of dynamics. This is not too surprising: dynamics is one of the first elements of music perceived by very young children (Hargreaves & Zimmerman, 1992). It may be that, as Smith (1992) has speculated, “they [children K–3] are sensitive to the simple sensory and expressive qualities of things” (p. 61). This would support Krumhansl and Jusczyk’s (1990) finding that even infants respond to correct and incorrect phrasing in music.

If the results of the current study are supported by future research, it seems likely that elementary students perceive expressive nuance in music and respond to it in a positive manner. It should be noted, however, that the participants in this study did not prefer the expressive version of 3 of the 10 folk songs. A significant proportion of students at both schools chose the nonexpressive version of Song 1, and the students were almost evenly divided in their choices for the versions of Songs 6 and 8. The rejection of the expressive version of Song 1 may have occurred because there were no practice examples for the preference test. The participants could have chosen the second example of Song 1—the nonexpressive version—because they remembered it better.

Table 4  
*Proportion of Expressive Choices and z scores by School for Each Folk Song*

Song	School A		School B	
	Prop.	z	Prop.	z
1	0.36	-3.81*	0.37	-3.20*
2	0.62	3.30*	0.60	2.65*
3	0.76	8.30*	0.67	4.56*
4	0.54	1.22	0.63	3.38
5	0.72	6.67*	0.70	5.41*
6	0.50	0	0.54	1.09
7	0.69	5.64*	0.53	0.75
8	0.52	0.61	0.46	-0.75
9	0.59	2.48*	0.66	4.16
10	0.72	6.45*	0.60	2.47*

\*  $p < .05$ .

The neutral response to Songs 6 and 8 is not as easily explained. Neither version of either song produced a significant proportion of participants. This could have been due to the range of dynamic nuance within the particular folk songs. The teacher who administered the preference test reported that there was a noticeable negative reaction to an ascending octave leap and accompanying increase in dynamics during the performance of Song 6. Perhaps more subtle dynamic nuances in both songs would have produced a preference for expressive performance. Another possibility is that different dynamic interpretations would have produced different results. These are questions for future research.

The results of this study suggest that expressive performance can be a very important factor in the affective response of students. Even elementary students without extensive musical training respond to expressive nuance in a positive manner. They prefer expressive performance. As mentioned at the beginning of this report, the importance of expressive performance is generally accepted, although little research exists to support this acceptance. The results of this study, however, may be an indication of a general positive affective response to expressive quality in music. If this response is learned, it seems to be learned very

early in childhood. Thus, music educators in elementary schools may wish to emphasize expressive nuance throughout their teaching and performance. Children may respond more positively to even the simplest folk song, chant, rhythmic activity, or circle game if the teacher performs the song or activity with dynamic nuance. Expressive performance may stimulate student preference, attentiveness, participation, and an overall positive attitude toward music class. Subsequently, the development of skill in expressive performance and interpretation may be very important in the development of effective music educators.

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