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# EFFECTIVENESS OF CHAMBER MUSIC ENSEMBLE EXPERIENCE

Jay D. Zorn

A great deal of literature exists suggesting that the chamber music ensemble is a unique, stimulating medium through which to perform and study music. Many musicians feel that chamber music ensemble performance affords a satisfaction offered by no other performing medium. Despite the enthusiastic claims about the effectiveness of the chamber music ensemble experience, no previous studies have been made to formally investigate these claims. In fact, the use of chamber music ensembles in American music education programs has largely been neglected.

This investigation was concerned with the effectiveness of chamber music ensemble experience for certain members of a ninth grade band and the evaluation of the effectiveness in terms of performing abilities, cognitive learnings, and attitude changes.<sup>1</sup> Answers to the following specific questions were sought: (1) Will the experience of performing in chamber music ensembles cause significant changes in the performance abilities of its participants? (2) Will the experience of performing in chamber music ensembles cause significant changes in the participants' awareness of the history, literature, structure, and materials of music? (3) Will the experience of performing in chamber music ensembles cause positive attitude changes toward music and music participation?

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<sup>1</sup> This article is based upon the author's doctoral dissertation (Indiana University, 1969).

## Experimental Design

The investigator taught a ninth grade band class, sectional rehearsal groups, and chamber music ensembles for one year (thirty-two weeks) during the 1967-1968 school year in the public schools of Mamaroneck, New York. The curriculum for the band and ensembles was organized around the proposition that music performance can have significant value both as a recreation of musical works of art, and as a means through which learning in the performance (psychomotor), cognitive, and affective domains can be achieved.

A nonrandomized design was chosen for the experimental situation.<sup>2</sup> The design entailed pretesting and posttesting an experimental group and an equivalent control group. The entire brass section (twenty students) and the entire clarinet section (ten students) of the ninth grade band were divided into equivalent groups on the basis of performing ability as determined by the rank order results of an individual recorded performance test. The students were assigned to either an experimental brass or clarinet chamber music ensemble group, or to a control brass or clarinet sectional rehearsal group. The control clarinet sectional rehearsal group consisted of five Bb soprano clarinets. The experimental clarinet chamber music ensemble group consisted of five Bb soprano clarinets plus an Eb alto clarinet and a Bb bass clarinet. The latter two players were not part of the regular experiment, but were added to the ensemble group in order to perform clarinet choir music. The control brass sectional rehearsal group consisted of five Bb trumpets, one F horn, three trombones, and one baritone horn. The experimental brass chamber music ensemble group consisted of the same instrumentation as the experimental brass group.

Each of the four groups met for one fifty-minute period each week on a rotating schedule in addition to the three regularly scheduled full band rehearsals each week. The two experimental chamber music ensemble groups performed only chamber music in their small group rehearsals; no band parts were rehearsed and the players were asked not to practice their band parts outside of the full band rehearsals. All performance problems and discussions centered around the chamber music being performed. The two control sectional rehearsal groups performed only the band parts that they had been assigned in the full band during their small group rehearsals. All performance problems and discussions centered around the band literature being performed.

Data for the study were gathered by a series of six tests. Three of the tests were specially designed by the investigator for this experiment. They were: *Individual Recorded Performance*, which measured changes in performing ability; *Music Information Inventory*, which measured cognitive learning in music; and *Music Attitude Inventory*, which measured

<sup>2</sup> Deobold B. Van Dalen, *Understanding Educational Research* (New York: McGraw-Hill Book Co., 1962), p. 275.

changes in attitudes toward music and music participation. Three standardized tests were employed to gather data about factors that might have contributed to the changes in performing ability, cognitive learning, and attitudes. These factors are musical sensitivity, mental ability, and selected nonmusical aptitudes. The standardized tests were: *Musical Aptitude Profile* (Musical Sensitivity),<sup>3</sup> which measures students' sensitivity to phrasing, balance, and style in music; *California Test of Mental Maturity*, which measures general intelligence or mental ability;<sup>4</sup> and *Differential Aptitude Tests*, which measure aptitudes in verbal reasoning, numerical ability, abstract reasoning, and mechanical reasoning.<sup>5</sup>

## Results

Table 1 indicates that the experimental chamber music ensemble groups achieved mean gain scores of 23.93 between pretest and posttest

Table 1  
Mean Gain Scores on *Individual Recorded Performance Test*

Group	Pretest Mean	Posttest Mean	Difference	t
Control Group Composite	47.28	63.07	15.79	5.87*
Experimental Group Composite	40.93	64.86	23.93	6.29*
Control Group Clarinet	48.00	65.60	17.60	5.49*
Experimental Group Clarinet	40.20	70.20	30.00	8.01*
Control Group Brass	46.88	61.66	14.78	3.80*
Experimental Group Brass	41.30	62.20	20.90	3.97*

\* Significant at the .05 level of confidence.

on the *Individual Recorded Performance* test compared with 15.79 mean gain scores achieved by the control sectional rehearsal groups. A gain was expected in the performance test scores for all groups because all were exposed to a small group experience on a weekly basis. An analysis of covariance was computed between composite group scores to determine whether the gains made by the experimental groups were greater than the gains made by the control groups. Table 2 shows that the achievements were not significantly due to the effectiveness of the chamber music ensemble experience.

Table 3 presents mean scores, mean score differences, and *t* tests for significance with groups on the *Music Information Inventory*. The results indicate that the control groups achieved gains in mean scores significant

<sup>3</sup> Edwin Gordon, *Musical Aptitude Profile* (New York: Houghton Mifflin Co., 1965).

<sup>4</sup> Elizabeth Sullivan, Willis W. Clark, and Ernest W. Tiegs, *California Test of Mental Maturity* (Monterey, California: California Test Bureau, 1964).

<sup>5</sup> George K. Bennett, Harold G. Seashore, and Alexander G. Wesman, *Differential Aptitude Tests* (New York: The Psychological Corporation, 1959).

**Table 2**  
**Analysis of Covariance: *Individual Recorded Performance Test***

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean Square
Treatment (Between)	1					
Error (Within)	27	6178.6619	2669.5785	3509.0834	26	134.9647
Treatment Plus Error (Total)	28	6202.0000	2454.9604	3747.0396	27	
Difference for Testing Adjusted Treatment Means				237.9562	1	237.9562

F (1, 26) = 1.763. Required F value for significance .05 = 4.22.

beyond the .05 level of confidence, while only the experimental group composite achieved significant gains beyond the .01 level of confidence. Again, a gain in test scores for all groups had been anticipated since each group had been exposed to lectures, demonstrations, and discussions in

**Table 3**  
**Cognitive Learning Scores: *Music Information Inventory***

Group	Pretest Mean	Posttest Mean	Difference	t
Control Group Composite	12.50	14.42	1.92	2.22*
Experimental Group Composite	12.40	15.66	3.26	5.96**
Control Group Clarinet	14.00	14.80	0.80	0.51
Experimental Group Clarinet	14.20	19.20	5.00	11.18**
Control Group Brass	11.66	14.22	2.56	2.45*
Experimental Group Brass	11.50	13.90	2.40	3.77**

\* Significant at the .05 level of confidence.

\*\* Significant at the .01 level of confidence.

equal proportions in the cognitive area. Table 4 indicates the results of the analysis of covariance to determine whether the gains made by the experimental groups were significantly greater than those of the control groups. The data suggest that both the experimental groups and the control groups achieved significant gains in scores, but that the gains were not significantly due to the effectiveness of the chamber music ensemble experience.

Table 5 indicates the data obtained from the *Music Attitudes In-*

Table 4  
Analysis of Covariance: *Music Information Inventory*

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean-Square
Treatment (Between)	1	11.1002				
Error (Within)	27	342.7619	146.6261	196.1358	26	7.5437
Treatment Plus Error (Total)	28	353.8621	145.0303	208.8318	27	
Difference for Testing Adjusted Treatment Means				12.6959	1	12.6959

F (1, 26) + 1.683. Required F value for significance .05 = 4.22.

*ventory*. The control groups achieved gains that were significant at the .05 level of confidence, but only the experimental group composite achieved gains that were significant at the .01 level of confidence. Table 6 shows that a significant difference did occur between the experimental groups and the control groups, with the experimental chamber music ensemble groups achieving significantly greater results than the control sectional rehearsal groups. The significant achievement in the area of attitude changes mainly was due to the effectiveness of the chamber music ensemble experience. It should be noted that the experimental

Table 5  
Attitude Index: *Music Attitude Inventory*

Group	Pretest Mean	Posttest Mean	Difference	t
Control Group Composite	76.42	82.78	6.36	2.93*
Experimental Group Composite	75.80	92.40	16.60	4.94**
Control Group Clarinet	69.20	76.60	7.40	1.61
Experimental Group Clarinet	74.60	89.60	15.00	4.56*
Control Group Brass	80.44	86.22	5.78	2.37*
Experimental Group Brass	76.40	93.80	17.40	3.57**

\* Significant at the .05 level of confidence.

\*\* Significant at the .01 level of confidence.

group composite overcame an anticipated nonstatistical regression in scores between the midtest and posttest on the *Music Attitudes Inventory*. The midtest battery was administered approximately eight weeks before the annual concert, while the posttest battery was given

Table 6  
Analysis of Covariance: *Music Attitude Inventory*

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean-Square
Treatment (Between)	1	669.3532				
Error (Within)	27	6317.9571	3393.5159	2924.4412	26	112.4785
Treatment Plus Error (Total)	28	6987.3103	3324.7849	3662.5254	27	
Difference for Testing Adjusted Treatment Means				738.0842	1	738.0842

F (1, 26) = 6.562. Required F value for significance .05 = 4.22.

approximately eight weeks after this concert at the end of the school year. The control groups showed a regression in favorable attitudes, while the experimental groups continued to improve their attitude scores until the end of the school year.

Tables 7, 8, and 9 indicate the coefficients of correlation between each of the three standardized tests—*Musical Aptitude Profile* (Musical Sensitivity), *California Tests of Mental Maturity*, and the *Differential Aptitude Tests*—and the pretest scores of the three specially designed tests. None of the product-moment coefficients of correlation were significant at the .05 level of confidence.

## Discussion

Based on the results of the statistical analyses within the limitations of this study, it appears that in the areas of performing ability and cognitive learning, the chamber music ensemble experience probably was not a significantly effective music instructional format as compared with sectional rehearsal groups working on band parts. The chamber music ensemble, however, does appear to be an effective medium in fostering favorable attitudes toward music and music participation. Although the statistics indicated no significant differences in scores between the experimental groups and the control groups in the areas of performing ability and cognitive learning, the experimental groups in both areas achieved greater gains. With the strong influence of favorably changed attitudes, it is conjectured that given a time period longer than the thirty-two weeks of this experiment, the chamber music ensemble experience would influence the statistical gains to become significant in the areas of performing ability and cognitive learning.

Table 7  
Correlation Coefficients: *MAP* (Musical Sensitivity)

Tests	Phrasing	Balance	Style	Composite
Control Group Composite				
Individual Recorded Performance	-.02	.02	.37	.18
Music Information Inventory	.06	-.38	-.19	-.15
Music Attitude Inventory	-.20	-.14	.49	.09
Experimental Group Composite				
Individual Recorded Performance	-.19	-.17	-.13	-.26
Music Information Inventory	.03	.50	.03	.15
Music Attitude Inventory	-.03	.07	-.03	-.10

Table 8  
Correlation Coefficients: *California Test of Mental Maturity*

Tests	California Test of Mental Maturity
Control and Experimental Groups	
Individual Recorded Performance	-.03
Music Information Inventory	.27
Music Attitude Inventory	-.08
Control Group Composite	
Individual Recorded Performance	.00
Music Information Inventory	.32
Music Attitude Inventory	.22
Experimental Group Composite	
Individual Recorded Performance	.20
Music Information Inventory	.20
Music Attitude Inventory	-.45

Table 9  
Correlation Coefficients: *Differential Aptitude Tests*

Groups	Verbal Reasoning	Numerical Ability	Abstract Reasoning	Mechanical Reasoning
Control Group Composite				
Individual Recorded Performance	-.08	.51	.31	.27
Music Information Inventory	.44	.27	.24	.18
Music Attitude Inventory	.08	.43	.25	-.12
Experimental Group Composite				
Individual Recorded Performance	.13	.00	-.09	-.02
Music Information Inventory	.39	.44	.08	.48
Music Attitude Inventory	-.41	-.21	-.48	-.24



For many music educators, a significant improvement in favorable attitudes toward music and music participation is justification enough for considering more extensive use of the chamber music ensemble format for music instruction. It is conceivable that an entire instrumental music program could be organized around chamber music ensembles.<sup>6</sup> Combined with modular or flexible scheduling in the secondary schools, chamber music ensembles may be able to keep all instrumental students active and interested even when the possibility of scheduling them into large group rehearsals is prohibitive.

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<sup>6</sup> Charles L. Gary, "Why Bands?" *Music Educators Journal*, Vol. 46 (April-May 1960), p. 66.