

AN INVESTIGATION OF THE EFFICACY
OF ABILITY GROUPING PROSPECTIVE TEACHERS
ENROLLED IN ELEMENTARY MUSIC METHODS AND MATERIALS COURSES

by

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Problem of the Study

The specific problem of the study was to determine if ability grouping, on the basis of musical aptitude, yields dividends in the teaching of elementary music methods. It was considered an attractive and plausible hypothesis that such grouping would simplify the instructor's task and raise average student achievement. Precedent for such a belief is found in some—but certainly not in all—of the studies carried out at lower educational levels. Studies at the college level are practically non-existent.

Design of the Study

The Musical Aptitude Profile was administered to 188 University of Iowa upperclassmen enrolled in three sections of the course "Elementary Music Methods and Materials: Music for Classroom Teachers". The students' test scores were then used to place some of them into one of two homogeneously grouped class sections. One of these sections contained only students who possessed a below average degree of musical aptitude and the other contained only students who possessed an above average degree of musical aptitude. The enrollment of the third class remained heterogeneous. Although teachers were initially randomly assigned to class sections, no

instructor was allowed to teach two classes comprised of the same ability grouping over the two semester period.

Results of students' performances on five criteria, (designed to measure various types of musical achievement), were obtained. Reliability coefficients were estimated for each of the criteria.

A treatment by levels design was employed, the "treatments" being the methods of class sectioning (i.e. musically homogeneous and heterogeneous) and the levels being the students' composite Music Aptitude Profile test scores (i.e. above average and below average). The mean differences among groups on all criteria were studied separately.

Results

Differences between means and standard deviations for the five criteria for students of comparable ability in the different groups did occur. However, the main effects of treatments was found to be nonsignificant. Also, no significant interaction was observed.

The levels dimension of the design was not considered to be of main interest in the study. Nevertheless, it is interesting to note that there existed a direct and statistically significant relationship between initial MAP composite test scores and subsequent degrees of achievement in music. Mean achievement performance

as measured by the criteria consistently favored students who scored higher on MAP. This finding was consistent for all five criteria.

Conclusions

The results of this study clearly suggest that ability grouping of prospective classroom teachers enrolled in music methods and materials classes does not result in significantly higher achievement. This conclusion applies to a course similar to that offered in this study and to measures of achievement and grouping similar to those used in the present study. There is the possibility that a similarly designed study, utilizing students with rather different backgrounds, teachers with different approaches and instructional materials, and other criteria might produce results which are not consistent with those reported here. However, the present study provides little encouragement or support to those who see great potential benefits in ability grouping at this level and in this area.

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CHAPTER I

PURPOSE OF THE STUDY

Introduction

In 1963 the National Education Association published a research monograph which contained important information about the music education of elementary school children in America.¹ The investigation disclosed that classroom teachers taught music in 70 to 80 percent of the elementary schools, either alone or with help from a music specialist, although only 63 percent of the classroom teachers had any training in music. The important role of the classroom teacher in the musical education of American children is clearly indicated in the monograph. Because the classroom teacher occupies such a responsible position, her education in elementary music methods and materials must be of the highest possible quality.

Elementary music methods and materials classes are generally taught in a manner which is not necessarily designed to take into account the diverse musical needs

¹Music and Art in the Public Schools, Research Monograph 1963-M3 (Washington: Research Division, National Education Association, 1963), p. 12.

and abilities of prospective classroom teachers. Classes usually comprise such large enrollments and they deal with such extensive content that it is difficult for a professor to adapt his instruction to meet the individual musical needs of all students. Generally, he directs his teaching toward what he perceives to be the "average" member of the class.

To decide how to best organize a program of instruction for these classes is difficult. Nevertheless one educational practice, that of ability grouping, is often suggested as a means by which all students may receive more adequate instruction and thus achieve a higher level of proficiency. The purpose of this study was to investigate the efficacy of ability grouping as an instructional procedure in elementary music methods and materials courses.

Problem of the Study

The specific problem of this study was to determine if grouping prospective elementary teachers into classes according to demonstrated musical aptitude results in a significantly higher level of musical achievement than that attained by students in classes organized without regard to the aptitude of the students. It was considered an attractive and plausible hypothesis that such grouping would simplify the instructor's task and raise average

student achievement. Precedent for such a belief is found in some, but certainly not all, of the studies carried out at lower educational levels. Studies at the college level are practically non-existent.

The subjects in this study were 188 University of Iowa upperclassmen enrolled in the course "Elementary Music Methods and Materials: Music for Classroom Teachers." The course was designed to include both the development of music skills and the formulation of concepts about how children learn when they learn music.

Description of the Criteria Used For Grouping Students

The practice of grouping students according to their demonstrated ability has existed for many years. However, the basis for increasing the homogeneity of the groups has varied greatly. In many studies, students' level of previous achievement has been employed as the basis for grouping. In other studies, students' performances on various measures of general mental ability have served as the basis for sectioning. The results of these studies are inclusive with regard to the relative effectiveness of achievement and aptitude as criteria for grouping.

The composite score on the Musical Aptitude Profile¹

¹Edwin Gordon, Musical Aptitude Profile (Boston: Houghton Mifflin Company, 1965).

served as the criterion for grouping in the present study. This musical aptitude test measures melody, harmony, rhythm, and musical sensitivity in a purely musical fashion. The basic musical factors measured by MAP* are classified into three total tests: Tonal Imagery, Rhythm Imagery, and Musical Sensitivity. Each of the nonpreference total tests, Tonal Imagery and Rhythm Imagery, consists of two separate subtests. They are Melody and Harmony for the former and Tempo and Meter for the latter. Phrasing, Balance, and Style are the three separate subtests of which the preference test, Musical Sensitivity is comprised. These seven tests, practice selections, and directions are tape recorded. The entire battery consists of 250 items which are short original musical selections, composed by the author, and performed by a professional violinist and cellist.

Split-halves reliability coefficients, for grades four through twelve, for all tests were derived from the MAP national standardization program. The reliability coefficients, reported in the test manual, range in the .70's and .80's for the subtests, in the .80's and .90's for the total tests, and in the .90's for the composite score.

*For convenience, the Musical Aptitude Profile will hereafter be referred to as MAP.

Lee¹ found the reliability of college students' scores on MAP to be comparable to the reliability reported for scores of public school students. Norms and specific statistical data derived from Iowa and Illinois college and university students' MAP scores can be found in Table 1. The data presented in this table is based upon the test results of 332 college and university freshmen music students. Students who participated in this study were enrolled in The University of Iowa, Iowa City; Western Illinois University, Macomb; University of Northern Iowa, Cedar Falls; Drake University, Des Moines; and Luther College, Decorah. Although it is not known if these students are representative of all freshmen music students in the United States, it would seem reasonable to assume that the average level of musical aptitude of these mid-western freshmen music majors is quite similar to that of other freshmen music majors. Mid-western public school students' MAP scores were not found to be significantly different from the scores of students in other geographical regions of the United States who participated in the test standardization program.

Further investigation of the reliability of MAP for

¹ Robert E. Lee, "An Investigation of the Use of the Musical Aptitude Profile with College and University Freshmen Music Students" (unpublished Ph.D. thesis, University of Iowa, 1966).

Table 1.

MAP STANDARD SCORE MEANS AND STANDARD DEVIATIONS
AND SPLIT-HALVES RELIABILITY COEFFICIENTS FOR
COLLEGE AND UNIVERSITY FRESHMEN MUSIC STUDENTS*

Test	Mean	Standard Deviation	Reliability
T1: Melody	63.7	6.60	.72
T2: Harmony	66.0	6.98	.79
T: Tonal Imagery	64.9	6.14	.85
R1: Tempo	64.1	6.72	.73
R2: Meter	66.6	6.59	.73
R: Rhythm Imagery	65.4	6.03	.83
S1: Phrasing	61.0	8.84	.66
S2: Balance	61.8	7.79	.60
S3: Style	62.6	7.79	.58
S: Musical Sensitivity	61.8	6.23	.79
C: Composite	64.0	4.91	.90

*Study by Lee.

college students has been made by Hatfield.¹ Means and standard deviations based upon the test results of music majors and non-music majors enrolled at South Dakota State University are presented in Table 2.

Mean scores for the South Dakota students range only slightly below those found by Lee for college freshmen music majors. As can be seen in Table 1, the mean scores which Lee reported ranged from 61.0 on the Phrasing test to 66.6 on the Meter test. Hatfield found mean scores for the South Dakota students to range from 59.9 on the Balance test to 64.3 on the Harmony and Meter test. Mean scores for the South Dakota students were approximately 10 points higher than those reported in the MAP test manual for musically unselect twelfth grade students and 5 points higher than those reported for musically select senior high school students.

MAP split-halves reliability coefficients for the subjects who participated in Hatfield's study are also presented in Table 2. These coefficients are similar to those found by Lee for freshmen music students with the exception of the coefficients of .48 and .45 for the Balance and Style subtests, respectively. In Table 1, reliability coefficients reported by Lee are .60 for the

¹Warren G. Hatfield, "An Investigation of the Diagnostic Validity of the Musical Aptitude Profile with Respect to Instrumental Music Performance" (unpublished Ph.D. dissertation, University of Iowa, 1967).

Table 2.

MAP STANDARD SCORE MEANS AND STANDARD DEVIATIONS
AND SPLIT-HALVES RELIABILITY COEFFICIENTS FOR
SOUTH DAKOTA STATE UNIVERSITY STUDENTS*

Test	Mean	Standard Deviation	Reliability
T1: Melody	62.8	7.20	.78
T2: Harmony	64.3	6.86	.74
T: Tonal Imagery	63.6	6.25	.83
R1: Tempo	62.9	7.23	.74
R2: Meter	64.3	7.15	.58
R: Rhythm Imagery	63.7	6.31	.74
S1: Phrasing	64.2	9.30	.76
S2: Balance	59.9	6.35	.48
S3: Style	64.0	6.16	.45
S: Musical Sensitivity	62.7	5.66	.71
C: Composite	63.4	4.78	.87

*Study by Hatfield.

Balance subtest and .58 for the Style subtest. The reliability coefficients for the three total tests and the composite score reported in Hatfield's study are comparable to those found by Lee.

The reliabilities of the Balance and Style subtests, as found by Hatfield, are not as high as those reported by Lee nor as high as those shown in Table 3 for musically select high school students. Hatfield concluded that the low reliabilities of the Balance and Style subtests were most likely due to the homogeneity of the South Dakota students with regard to these specific aptitudes. This homogeneity is reflected in the small standard deviations for these two subtests. However, because the reliability coefficients for the five other MAP subtests and the total tests and composite score reported in the Hatfield study are comparable to those found by Lee and to those reported in the MAP test manual for public school students, it was reasoned that MAP could be used satisfactorily with a musically heterogeneous group of college students.

Table 3.

MAP STANDARD SCORE MEANS AND STANDARD DEVIATIONS
AND SPLIT-HALVES RELIABILITY COEFFICIENTS FOR
MUSICALLY SELECT SENIOR HIGH (GRADES 10-12)
SCHOOL STUDENTS*

Test	Mean	Standard Deviation	Reliability
T1: Melody	56.3	9.56	.83
T2: Harmony	57.4	9.53	.84
T: Tonal Imagery	57.1	8.87	.90
R1: Tempo	57.3	8.65	.80
R2: Meter	58.1	8.77	.80
R: Rhythm Imagery	57.9	7.99	.86
S1: Phrasing	56.4	8.81	.70
S2: Balance	56.6	8.75	.71
S3: Style	57.0	9.02	.73
S: Musical Sensitivity	56.7	7.09	.87
C: Composite	57.24	6.91	.95

*Data taken from MAP manual.