A STUDY TO DETERMINE THE EXTENT TO WHICH MUSIC STUDENTS HAVE A WELL-ADJUSTED PERSONALITY

THESIS

Presented to the Graduate Council of the North Texas State Teachers College in Partial Fulfillment of the Requirements For the Degree of

MASTER OF SCIENCE

By

John E. Lawhon, B. S.

Denton, Texas
August, 1940
# TABLE OF CONTENTS

LIST OF TABLES ........................................ iv

Chapter
I. PROBLEMS FOR INVESTIGATION .................. 1
   Introduction
   Purpose of the Study
   Related Studies
   The Investigation

II. DESCRIPTION OF DATA USED IN THE
    PRESENT STUDY ..................................... 10
    The Intelligence Test
    The Personality Test

III. ADMINISTRATION OF THE TESTS ............... 16
    Description of Students Tested
    General Procedures
    Statistical Procedures

IV. RESULTS OF THE INVESTIGATION ............... 20
    Differentiation of Data
    The Intelligence Test
    The Personality Test
    Correlations of Data

V. SUMMARY AND CONCLUSIONS ...................... 35
    Summary of Results
    Conclusions

BIBLIOGRAPHY ......................................... 41
LIST OF TABLES

Table                                                                 Page
1. Percentile Distribution According to Classes of Music Students and Control Students ........................................... 17
2. Mean and Median Scores of Total Groups on the Otis Intelligence Test .......................................................... 21
3. Mean and Median Scores of Men and Women on the Otis Intelligence Test ....................................................... 22
4. Scores of Solo and Ensemble Musicians on the Otis Intelligence Test ............................................................ 23
5. Differences between Mean Percentile Scores of Total Groups on California Personality Test ............................................. 26
6. Percentile Ranking of Total Groups on Personality Test ...................................................................................... 27
7. Mean Percentile Scores of Solo and Ensemble Musicians on Personality Test ..................................................... 28
8. Mean Percentile Scores of Men and Women on Personality Test ........................................................................ 30
9. Coefficients of Correlation between I.Q.s and Phases of Personality ................................................................ 32
10. Age Distributions of Students Tested ........................................................................................................... 33
11. Coefficients of Correlation between Ages and Phases of Personality ............................................................... 34
12. Total Results of Personality and Intelligence Tests .......................................................................................... 36
CHAPTER I

PROBLEMS FOR INVESTIGATION

Introduction

Formal education in this country was first conceived as a training of the mind, and the early curriculum included only subjects primarily designed for mental training. With the evolution of modern educational philosophy, however, educators came to agree with the concept of the totality of the individual. The importance of an all-round development of the total organism was recognized and taken into consideration in the new educational program.

This newer view resulted in the addition of other subjects to the curriculum to augment the so-called mental discipline of the three R's. Because they were added and therefore newer subjects in a chronological sense, they were called "special subjects".

Thus, music made its advent into the school program. Like other special subjects, it was set apart from the general educational plan, its functions regarded in a separate and highly specialized manner. Because of this special classification, and because of the fact that the musician must spend so much time acquiring the mastery of an art that is extremely exclusive, the personnel of the musical
field tended to be characterized as "different" -- as temperamental, egotistical, non-social, unstable persons -- in some cases as "cranks".

"It was Savage Landor, we believe, who once paid them musicians the compliment of declaring that they had 'the brain of a rabbit and the heart of a lizard'."

Also, in an article entitled "Possible Remedies for Some Musicians' Nervous Troubles", the author suggests that the emotionally upset artist should eat yeast to calm his nerves before a public performance, indicating that the musician is expected to have some form or degree of emotional instability. As Haweis remarks, "it has often been said that music is the language of the emotions; but what there is in music to act upon emotion, or how it both expresses and excites it, sometimes compelling the mind to clothe the awakened emotion with definite ideas - this has never been explained."

On the other hand, Seashore insists that "the musical mind is first of all a normal mind ... We must take it for granted that the musical mind is an aspect of a normal personality with endowments for a general mental life, and we

---

3 H.R. Haweis, Music and Morals, p. 10.
must also take the general psychology of such mental life for granted."

Going still further, Dr. Weldon Myers, head of the Department of English, Converse College, South Carolina, has noted some remarkable results from students who had had a musical training. Myers reports that certain traits in music students have struck me again and again. Some previous discipline seems to have forestalled or corrected certain tendencies.

Students, not thoroughly trained, reveal a perfect willingness to use words in a loose, vague way—to write statements which on the least analysis prove meaningless or absurd. Along with this common fault there often goes another—a run-off diffusiveness which is found to serve at least the purpose of eking out the required number of manuscript pages... From these faults the music student seems comparatively free. She is more likely to have habits of accuracy, thoroughness, and completeness. She more easily concentrates on the topic at hand. She weighs the meaning and effect of words. She has a conscience against blundering and mind-wandering. She derives from some source energy and patience to carry a projected composition to a finish."

Seashore, in describing the ideal musician, says: "A musician who is well physically, morally and mentally, who has a good disposition, and who is socially attractive, reasonable and well-balanced, has the advantage over the warped personality, and should represent our goal."6

The power of music over its listeners has long been

---

recognized; it is more difficult, however, to estimate the
effect of music on its performers and teachers.

The Purpose of This Study

To determine what type of young men and women are en-
tering the profession of music today as compared with those
entering other fields is the purpose of the present inves-
tigation. It undertakes a study of ninety advanced music
students divided into two groups of forty-five each, those
who prefer to do solo work and those who prefer to perform
in an ensemble. A control group of fifty advanced students
is taken from other fields of study in order to form a
basis for judgment of the music students. These groups
are compared with respect to age, intelligence, and various
personality adjustments.

The study seeks to answer the following questions:
1. Can advanced music students be distinguished from
   non-music students on the basis of intelligence?
2. Are the music students more or less adjusted as
to their total personalities than other students?
3. Do the music students show evidence of more or
   less self-adjustment than do the other students?
4. Are these music students better adjusted socially
   than other students?
5. Do the music students who prefer solo work differ
   appreciably from those who prefer to play in ensembles?
6. Are there any differences between men and women music students in intelligence and personality?

7. Do older students tend to be more or less adjusted as to total personality than younger students, or equally so?

Related Studies

Several investigations have been made of specific personal traits of curricular groups outside the field of music.

In the general field, studies by Odenweller and by McKinstry are illustrative of a number of researches undertaken in an effort to isolate personal qualities related to teaching success. While teaching success in itself is not a factor in the present study, these investigations are of interest because of their inquiry into specific personality traits pertaining thereto.

7 Odenweller, in a study of five hundred and sixty teachers, concluded that personality has a closer relation to the quality of teaching than successful student teaching or any other trait.

8 McKinstry studied the records of ninety graduates of the Central School of Physical Education over a ten-year period, from 1919 to 1929. She arrived at the same conclusions as Odenweller, that character, personality and social

---

7 A.L. Odenweller, Predicting the Quality of Teaching.

adaptability are among the most important criteria of teaching success.

In the field of physical education, Ragsdale reports upon a study for men majors made by Matthusen at the University of Wisconsin. Men enrolling in physical education were paired upon the basis of intelligence with others enrolled in the letters and science curricula. Except for their athletics, the letters and science men were much more interested in college activities than were the physical education majors. High school principals rated the men majors as better leaders, more popular among their fellow students, slightly superior in emotional control and purposefulness with about equal initiative in school work. In college scholastic records, the two groups were fairly equal, with the letters and science men tending more toward average scholarship while the physical education men tended toward the extremes.

Duggan has made a similar study for women physical education majors. She discovered that majors and non-majors differed consistently in their work, their play, and their social relationships. The majors were more emotionally stable


10 A.S. Duggan, Personality Traits of Women Physical Education Majors.
than the non-majors, more extroverted and more dominating. Their intelligence scores were consistently lower.

Thayer found that personality traits could be changed to a certain extent by conscious training, but could not predict whether or not these changes would be lasting.

Worley reports a home economics group as lower in intelligence scores and in personality rating than other students, and that a course in home economics resulted in no appreciable change in personality traits.

The foregoing investigations are valuable as points of reference for the present study only insofar as their use of comparable measures offers bases for the comparison of results obtained. In the field of music, little has been done along this line. To measure special abilities, Seashore has worked out a precise apparatus for testing musical talent. He correlates musical talent with intelligence and with ability in other subjects, but makes no mention of personality.

In a study of different occupational groups, Hartson

---


has ranked musicians tenth in intelligence, with college women teachers ranked highest, men college teachers next, and home economics students twenty-third.

Data collected from a southern teachers college by Garrison indicate that the music students ranked on intelligence tests below psychology, secondary education, language, mathematics, physical education and social science students; they ranked above primary and elementary education, agriculture, home economics and industrial arts students.

No studies have been discovered which have as their purpose the measurement of personalities of music students as differentiating from other scholastic groups. The present study has been undertaken, therefore, in an effort to supply answers, objectively derived, to the question: Can advanced music students be distinguished from non-music students on the bases of intelligence and personality as measured by specific, objective tests?

The Investigation

This study has been conducted at the North Texas State Teachers College during the summer session of 1940. Intelligence and personality tests, which are described later, were given to the forty-five advanced music students who preferred to do solo work, the forty-five advanced music

students who preferred to perform in groups or ensembles, and to the control group of fifty advanced students who did not take music.
CHAPTER II

DESCRIPTION OF DATA USED IN THE PRESENT STUDY

An increasing emphasis on social adjustment and on the development of desirable personality traits is becoming one of the fundamental trends of education. Social intelligence, or the ability to get along with others, and the ability to adapt oneself to changing situations are most important factors making for a successful life.

That intelligence is only one of the factors which go to make up success or failure - be it in business, home relationships, or in academic life, is not only a common sense observation, but one which is abundantly borne out by experimental evidence. To those who for one reason or another have need to be able to predict with considerable accuracy what sort of adjustment a given person will make to a certain kind of environment, the results yielded by intelligence tests alone are highly unsatisfactory ... The student's record should contain not only his scholastic grades and his mental score, but his rating as well in certain fundamental traits of personality.1

Psychologists who are known principally for their work on intelligence testing have recognized also the practical importance of the study of personality. Rudolph Pintner, who has developed excellent performance tests of intelligence, has written that "the time is now ripe for active

---

1H.T. Tyler, Bearing of Personality Factors on Academic Success, pp. 5-7.
investigation of the emotions, the character, the will and so forth, by means of mental test methods."

Lewis M. Terman, who has done more than any other individual to promote intelligence tests, states that among the next steps in psychological investigations are studies of emotional and volitional traits, and the combinations of these which are involved in normal variations in temperament.

For this study, therefore, it was decided to measure the personality adjustments of the student groups as well as their intelligence scores.

The Intelligence Test

In a recent book concerned with the measurement of intelligence, the author reviews a number of definitions proposed by various psychologists. He picks out factors common to each and embodies them in a summarizing definition of intelligence as "an inherited capacity of the individual which is manifested through his ability to adapt to and reconstruct the factors of his environment in accordance with the most fundamental needs of himself and his group."

The Otis Self-Administering Test, Higher Examination,

---

3 Lewis M. Terman, *Intelligence and Intelligence Testing*, p. 78.
Form A, was chosen as the instrument with which to measure the intelligence of these music and non-music groups for the following reasons:

1. It is economical of time in administration and scoring, being a group test with a precise scoring key.

2. It is a standardized test with norms for college students, thereby offering bases for comparison of the present groups.

3. It is made up of items unrelated to specific schooling.

4. The form of the examination admits of the use of a wide variety of types of questions.

The Otis S*A Test, Higher Examination, therefore, satisfies criteria set up by Watson. Traxler has found it to be as reliable and slightly more constant than the Stanford Revision of the Binet-Simon Tests, and highly valid in correlations with it.

The test was administered according to directions clearly outlined by Otis.

5. Goodwin Watson, "Professor Watson Sums Up the Good and Bad in Intelligence Tests," Teachers College Record, (1930).


The Personality Test

The human personality is a force difficult to describe by means of a precise definition. "It has rightly been said that we know more of the stars in the milky way, more of the tiniest interstices of atoms than we do of the unsolved mystery of personality." 8

Modern psychologists tend to define personality in terms of the reaction or response of the individual. "Personality is an entity which is self-directing, which manifests itself my means of the life-force suffusing and animating the mechanism." 9 Or as Walke says, "Personality may be considered as the organization of an individual's traits which determine his ability to stimulate and influence other people in their responses." 10

Since the measurement of personality in this investigation is based upon the California Test of Personality, Adult Series, it was decided that it would be wise to use the definition of personality offered by its authors, Tiegs, Clark, and Thorpe:

Personality is not something separate and apart from ability or achievement but includes them; it

---

8 Gordon Melvin, Building Personality, p. 292.
9 Ibid., p. 82.
10 Nelson Walke, Traits Characteristic of Men Physical Education Majors at the Pennsylvania State College, p. 16.
refers rather to the manner and effectiveness with which the whole individual meets his personal and social problems, and indirectly the manner in which he impresses his fellows.\textsuperscript{11}

The test, which as a whole measures the total adjustment of the individual, is divided into two sections. Section I, Self-Adjustment, indicates how the student feels and thinks about himself in the matter of self-reliance, sense of personal worth, sense of personal freedom and feeling of belonging. This section also tests the student for certain withdrawing and nervous tendencies. Section II, Social Adjustment, shows how the student functions as a social being, testing him in the components of social standards, social skills, freedom from anti-social tendencies, family relations, occupation relations, and community relations.

According to the authors of the test, "an evaluation of these components discloses whether or not the student's basic drives are being met in an atmosphere of security and whether he is developing a balanced sense of self-realization and social acceptance."\textsuperscript{12}

In general, the self-ratings of personality tests are subject to the criticisms that individuals tend to rate themselves in a socially approved manner and that they desire to be other than what they really are. The authors of this test


\textsuperscript{12}Ibid., p. 2.
have attempted to nullify the effect of these tendencies in two ways:

1. By disguising as many items as possible which might conflict with the student's desire to protect himself.

2. By providing outside checking devices and a percentile norm derived from test data for students at the same level.

The California Test reports an average reliability as obtained with 385 cases by the split-half technique corrected by the Spearman-Brown formula to be:

<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>PE</th>
<th>r</th>
<th>dist.score</th>
<th>est.score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Adjustment</td>
<td></td>
<td></td>
<td>.931</td>
<td>19.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Self Adjustment</td>
<td></td>
<td></td>
<td>.904</td>
<td>11.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Social Adjustment</td>
<td></td>
<td></td>
<td>.908</td>
<td>10.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

The California Test was administered to the one hundred and forty music and non-music students participating in the present investigation according to the instructions outlined by Tiegs, Clarke and Thorpe in their manual for the test.

13 Ibid., p. 4.
CHAPTER III

ADMINISTRATION OF THE TESTS

Description of Students Tested

All of the students participating in this study were enrolled at the North Texas State Teachers College during the summer of 1940. Only advanced students were included in the investigation, since it was decided that those who had reached junior, senior, or graduate standing in music would have had a sufficient background in the subject to be considered as "musicians". This would also insure the elimination of majors in other fields who might be taking only a few hours in music for relaxation, pleasure, or credit.

In order to preclude the operation of any other selective factor in the choice of subjects, however, the tests were administered to entire classes of advanced students during regular class periods with the exception of a few individually administered when some legitimate excuse prevented the subject's appearance at the regular testing period. The same testing conditions were observed, however.

Since the subjects were assured that their identities, as individuals, would be concealed in the treatment of the data, and that scores would in no way influence their marks or status, the investigator feels that thorough honesty on
the part of the subjects was successfully established in the investigation.

General Procedures

The music students as a whole were first compared with the control group on the bases of intelligence and personality adjustment. Then forty-five students from each of the music groups were matched with forty-five students from the control group according to their college classification. Table 1 shows the percentile groupings of the students taken from the junior, senior and graduate classes.

TABLE 1

PERCENTILE DISTRIBUTION ACCORDING TO CLASSES OF MUSIC STUDENTS AND CONTROL STUDENTS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Graduate Students</th>
<th>Seniors</th>
<th>Juniors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music</td>
<td>.61</td>
<td>.22</td>
<td>.17</td>
</tr>
<tr>
<td>Control</td>
<td>.60</td>
<td>.20</td>
<td>.20</td>
</tr>
</tbody>
</table>

The music group contains one percent more graduate students and two percent more seniors, while the control group has three percent more juniors. However, studies by Garrison

reveal that although graduate groups of college students score higher on the Otis Intelligence Test than do other college groups, there is slight difference between junior and senior groups. Therefore, the slight overlapping of junior and senior percentiles would make no significant difference in the probable ratings of the groups.

The matched students were compared in intelligence scores and in the various personality adjustments tested by the California Profile.

The music students were asked to state whether they preferred to perform in ensembles or as soloists. The object of this procedure was to determine if the two groups could be distinguished by differences in intelligence or in personality make-up. Comparisons were to be made between the groups themselves and between each of them and the non-music control group.

Since the student body of the summer session is usually made up of teachers in the field as well as the regular students, the ages of the students were secured in an effort to determine if personality adjustment increased or decreased with age and with practical experience.

In the treatment of data for each of the tests, certain general procedures were followed. Papers were scored and tabulated. Distributions were made for the total music and control groups and separate distributions for each division of the groups studied.
Statistical Procedures

The findings were tabulated by such statistical procedures and results as are legitimate for the type of material and the number of subjects studied.

Coefficients of correlation representing relationship between mental ability and the different personality adjustments were calculated. Such measures of central tendencies as means and medians were found. Correlations between age and intelligence and between age and the various adjustments of personality were also determined.
CHAPTER IV

RESULTS OF THE INVESTIGATION

The preceding portion of the discussion has dealt with materials of testing, subjects tested, and the experimental procedure. The materials used for testing were the Otis Intelligence Test and the California Profile. The subjects were chosen from students in music courses and a control group composed of others than those taking a music course. The method of procedure has been presented in detail in Chapter III.

In this chapter, data obtained from the use of the tests described are differentiated in five ways: first, the totals of the music and control groups are compared; second, the solo musicians are compared with the musicians who prefer ensemble work; third, a comparison is made of the men and women of the music group; fourth, correlations are sought between the intelligence scores and personality scores, and between ages and personality scores; and fifth, the data of the smaller groups are compared with those of the larger groups.

The Intelligence Test

Table 2 shows the comparison of results of the intelligence test for the two large groups of music and control
students. The results of the test show a significant difference between the means and medians of the total groups, with a definitely higher rating for the music students. The variability within the groups is practically the same for each group.

TABLE 2

COMPARISON OF MEAN AND MEDIAN I.Q.'S OF TOTAL GROUPS ON THE OTIS INTELLIGENCE TEST WITH OTIS' NORM FOR COLLEGE STUDENTS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>Range of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total music</td>
<td>118.75</td>
<td>119.5</td>
<td>97-133</td>
</tr>
<tr>
<td>Total control</td>
<td>111.46</td>
<td>113</td>
<td>90-129</td>
</tr>
<tr>
<td>Otis norm</td>
<td>111</td>
<td>111</td>
<td></td>
</tr>
</tbody>
</table>

The lowest I.Q. of the music group is seven points higher than the lowest I.Q. of the control group, and the highest music rating is four points higher than the corresponding control rating. None of the scores range below normal, however, and two of the music group made perfect scores.

Noting the results for the various groupings according to sex, as indicated in Table 3, it is readily seen that the men music students are somewhat superior, but that the men control students are twelve points lower, with women
music students and women control students falling in between. The lowest score is found in the women control group, with the highest score in the group of men musicians.

**TABLE 3**

**COMPARISON OF MEAN AND MEDIAN I.Q.'S OF MEN AND WOMEN ON THE OTIS INTELLIGENCE TEST**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>Range of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men music</td>
<td>121</td>
<td>121.5</td>
<td>99-133</td>
</tr>
<tr>
<td>Women music</td>
<td>116.8</td>
<td>118</td>
<td>97-132</td>
</tr>
<tr>
<td>Men control</td>
<td>109.4</td>
<td>109</td>
<td>99-121</td>
</tr>
<tr>
<td>Women control</td>
<td>113.5</td>
<td>114</td>
<td>90-129</td>
</tr>
</tbody>
</table>

In determining the differences between the musicians who prefer solo work and those who choose ensemble work, it is apparent that the solo musicians rate only a few points higher than the ensemble musicians (see Table 4). Again, however, when they are divided further, the men soloists show the highest intelligence rating of any group or subgroup studied, with the men ensemble group higher than either the women soloists or the women ensemble.

The Intelligence Quotients of the students tested ranged from 90 to 133, with the majority of scores falling between 112 and 124. Means and medians were almost identical in nearly every case.
TABLE 4

COMPARISON OF MEAN AND MEDIAN I.Q.'S OF SOLO AND GROUP MUSICIANS ON THE OTIS INTELLIGENCE TEST

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Median</th>
<th>Range of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solo musicians</td>
<td>119.97</td>
<td>121</td>
<td>99-133</td>
</tr>
<tr>
<td>Group musicians</td>
<td>117</td>
<td>118</td>
<td>97-132</td>
</tr>
<tr>
<td>Men soloists</td>
<td>123.65</td>
<td>123</td>
<td>112-133</td>
</tr>
<tr>
<td>Women soloists</td>
<td>116.8</td>
<td>119</td>
<td>99-129</td>
</tr>
<tr>
<td>Men ensemble</td>
<td>118.6</td>
<td>118</td>
<td>99-132</td>
</tr>
<tr>
<td>Women ensemble</td>
<td>116</td>
<td>118</td>
<td>97-132</td>
</tr>
</tbody>
</table>

The intellectual superiority of the musicians over the control group evidenced in this study is in direct contrast to the findings in other major fields as described in Chapter I, where in practically every case higher ratings were made by the control groups rather than by the ones specializing in the particular course of study which was being investigated.

In relation to the norms established for college students by Otis, in which the average mean score for two thousand one hundred and sixteen students was equivalent to an I.Q. on 111, the control group of this study made an almost identical rating, with the music group appreciably higher. (See Table 2). Thus the musicians of this study evidence not only a superior intelligence to the other group
of students with which they were being compared, but also in relation to college students in general.

The Personality Test

When we attempt to measure such intangible factors as emotional and personal adjustment, it is impossible to depend on the judgments of friends or associates of the subjects as to whether or not the subjects really possess the feelings in question. Many times the possessor of such attitudes successfully hides them from his friends. The important fact is that he possesses them, whether or not others know it, and whether or not there is any justification for such feelings. "In many instances the facts about a student's adjustment are not as important as the way he feels and what he believes concerning them, since such beliefs and feelings are frequently the keys to his intimate personality status." ¹

Therefore, special methods of objective testing are much more reliable than personal opinions of associates. In the last yearbook of the Department of Superintendence of the National Education Association, nearly one hundred such personality tests, questionnaires, or rating schemes are described as having possibilities for use. ²

¹Tiegs, Clark, and Thorpe, California Personality Test, Manual of Directions, p. 4.
²Yearbook, Department of Superintendence, National Education Association, (1939).
The California Personality Profile, through its direct and indirect questioning, is an objective measuring device of high reliability. It was used in this investigation to test various personal and social factors which, taken all together, form the total personality profiles for the students tested.

Table 5 presents the findings with reference to the personality traits measured by the California Test when each of the music and non-music groups was treated as a whole. Of the fifteen items of the profile, it is interesting to note that in all cases except two, the music group rated significantly higher than the control group. Only in social standards and community relations were the control group superior, and in each of these cases the difference is slight. The music group rated especially high on self-reliance, feeling of belonging, freedom from withdrawing tendencies, freedom from nervous symptoms, and in family relations. Little difference was shown between the two groups in sense of personal freedom, occupation relations and in anti-social tendencies. Lowest ratings of all were made by the control group on sense of personal worth, social skills and occupation relations.

Both groups were several points lower in social adjustment than in personal adjustment, and both made their best scores in the trait of self-reliance.
### TABLE 5

**COMPARISON OF DIFFERENCES BETWEEN MEAN PERCENTILE SCORES OF TOTAL GROUPS ON CALIFORNIA PERSONALITY TEST**

<table>
<thead>
<tr>
<th>Items of Test</th>
<th>Total Music Group</th>
<th>Total Control Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-adjustment</td>
<td>33</td>
<td>21.96</td>
</tr>
<tr>
<td>Self reliance</td>
<td>50.8</td>
<td>40.5</td>
</tr>
<tr>
<td>Sense of personal worth</td>
<td>21.6</td>
<td>13.5</td>
</tr>
<tr>
<td>Sense of personal freedom</td>
<td>30.4</td>
<td>28.6</td>
</tr>
<tr>
<td>Feeling of belonging</td>
<td>47.5</td>
<td>37.6</td>
</tr>
<tr>
<td>Freedom from withdrawing tendencies</td>
<td>37.4</td>
<td>25</td>
</tr>
<tr>
<td>Freedom from nervous symptoms</td>
<td>40.4</td>
<td>29.6</td>
</tr>
<tr>
<td>Social adjustment</td>
<td>19.6</td>
<td>16</td>
</tr>
<tr>
<td>Social standards</td>
<td>14.8</td>
<td>17.3</td>
</tr>
<tr>
<td>Social skills</td>
<td>22.5</td>
<td>13.7</td>
</tr>
<tr>
<td>Freedom from antisocial tendencies</td>
<td>39.3</td>
<td>31.2</td>
</tr>
<tr>
<td>Family relations</td>
<td>45.7</td>
<td>39</td>
</tr>
<tr>
<td>Occupation relations</td>
<td>23.3</td>
<td>19.2</td>
</tr>
<tr>
<td>Community relations</td>
<td>27</td>
<td>27.9</td>
</tr>
<tr>
<td><strong>TOTAL ADJUSTMENT</strong></td>
<td><strong>26.2</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>
Though the music and control groups differ on various items, yet they consistently follow the same pattern, as indicated in Table 6, rating highest in self-reliance, feeling of belonging and family relations, lowest in sense of personal worth, social standards and occupational relations.

**TABLE 6**

PERCENTILE RANKING OF TOTAL GROUPS ON PERSONALITY TEST

<table>
<thead>
<tr>
<th>Items of Test</th>
<th>1</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self adjustment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self reliance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal worth</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pers. freedom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belonging</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withdrawing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nervousness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social adjustment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social stand.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-social t.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family rel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation rel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community rel.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL ADJUSTMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Music Group ■ Total Control Group ■
In the comparison between solo and ensemble performers within the music group, the total adjustment varied only three points (see Table 7), yet wider differences might be noted within the various divisions of the profile.

**Table 7**

**Mean Percentile Scores of Solo and Ensemble Musicians on Personality Test**

<table>
<thead>
<tr>
<th>Items of Test</th>
<th>Solo Group</th>
<th>Ensemble Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self adjustment</td>
<td>34.2</td>
<td>31.9</td>
</tr>
<tr>
<td>Self reliance</td>
<td>58.8</td>
<td>42.8</td>
</tr>
<tr>
<td>Personal worth</td>
<td>21.9</td>
<td>21.3</td>
</tr>
<tr>
<td>Personal freedom</td>
<td>31.4</td>
<td>29.5</td>
</tr>
<tr>
<td>Feeling of belonging</td>
<td>48.1</td>
<td>47</td>
</tr>
<tr>
<td>Withdrawing tendencies</td>
<td>35.3</td>
<td>39.6</td>
</tr>
<tr>
<td>Nervous tendencies</td>
<td>46.1</td>
<td>34.8</td>
</tr>
<tr>
<td>Social adjustment</td>
<td>21.1</td>
<td>18.2</td>
</tr>
<tr>
<td>Social standards</td>
<td>16.1</td>
<td>13.6</td>
</tr>
<tr>
<td>Social skills</td>
<td>26.1</td>
<td>19</td>
</tr>
<tr>
<td>Anti-social tend.</td>
<td>39.7</td>
<td>38.8</td>
</tr>
<tr>
<td>Family relations</td>
<td>56.8</td>
<td>39.6</td>
</tr>
<tr>
<td>Occupations relations</td>
<td>26.6</td>
<td>20</td>
</tr>
<tr>
<td>Community relations</td>
<td>28.8</td>
<td>25.2</td>
</tr>
<tr>
<td><strong>Total Adjustment</strong></td>
<td>27.8</td>
<td>24.8</td>
</tr>
</tbody>
</table>
In every instance except one, the solo musicians made a higher rating. Especially significant were the fourteen point superiority which they evidenced in self reliance and their twelve point advantage in freedom from nervous symptoms. They were also many points higher than the ensemble group in social skills, in family relations and in occupation relations. The ensemble musicians held a few points lead in the item of freedom from withdrawing symptoms.

In determining differences between the men and women studied, little variation was apparent in the total scores of the two sexes. The men musicians rated a few points higher in feeling of belonging, freedom from withdrawing tendencies and family relations. The women excelled in freedom from nervous symptoms, social standards, social skills and community relations. Within the groups, however, significant differences were found. The solo men were especially high in family relations and low in social standards. The group men excelled in feeling of belonging and freedom from withdrawing tendencies. The solo women rated highest of all in total adjustment; the control men were lowest of all.

In studying the profile as a whole, it is evident that all scores are fairly low, and that the social adjustment of the students of all groups is lower than their self adjustment.
### Table 8

**Mean Percentile Scores of Men and Women on Personality Test**

<table>
<thead>
<tr>
<th>Items of Test</th>
<th>Men</th>
<th>Women</th>
<th>Men</th>
<th>Women</th>
<th>Men</th>
<th>Women</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Music</td>
<td>Music</td>
<td>Control</td>
<td>Control</td>
<td>Solo</td>
<td>Solo</td>
<td>Ensemble</td>
<td>Ensemble</td>
</tr>
<tr>
<td>Self adjust.</td>
<td>33.1</td>
<td>33.1</td>
<td>18.9</td>
<td>25.1</td>
<td>31.7</td>
<td>36.8</td>
<td>34.6</td>
<td>29.3</td>
</tr>
<tr>
<td>Self reliance</td>
<td>50.5</td>
<td>51.1</td>
<td>43.3</td>
<td>37.7</td>
<td>58.0</td>
<td>59.6</td>
<td>43.0</td>
<td>42.7</td>
</tr>
<tr>
<td>Personal worth</td>
<td>20.6</td>
<td>22.6</td>
<td>12.0</td>
<td>14.9</td>
<td>19.3</td>
<td>24.6</td>
<td>22.0</td>
<td>20.6</td>
</tr>
<tr>
<td>Personal freedom</td>
<td>30.6</td>
<td>30.3</td>
<td>12.8</td>
<td>34.3</td>
<td>29.2</td>
<td>33.6</td>
<td>32.0</td>
<td>27.0</td>
</tr>
<tr>
<td>Belonging</td>
<td>52.7</td>
<td>42.4</td>
<td>32.2</td>
<td>43.0</td>
<td>50.0</td>
<td>46.2</td>
<td>55.5</td>
<td>38.6</td>
</tr>
<tr>
<td>Freedom from withdrawing</td>
<td>41.6</td>
<td>33.3</td>
<td>20.8</td>
<td>29.4</td>
<td>39.9</td>
<td>30.8</td>
<td>43.3</td>
<td>35.9</td>
</tr>
<tr>
<td>Freedom from nervousness</td>
<td>38.1</td>
<td>42.7</td>
<td>27.9</td>
<td>31.4</td>
<td>43.7</td>
<td>48.5</td>
<td>32.6</td>
<td>37.0</td>
</tr>
<tr>
<td>Social adjust.</td>
<td>20.2</td>
<td>19.1</td>
<td>11.4</td>
<td>20.6</td>
<td>19.5</td>
<td>22.8</td>
<td>21.0</td>
<td>15.4</td>
</tr>
<tr>
<td>Social stand.</td>
<td>12.7</td>
<td>17.2</td>
<td>18.6</td>
<td>16.0</td>
<td>12.8</td>
<td>19.5</td>
<td>12.7</td>
<td>14.6</td>
</tr>
<tr>
<td>Social skills</td>
<td>19.5</td>
<td>25.6</td>
<td>13.2</td>
<td>14.3</td>
<td>18.5</td>
<td>33.8</td>
<td>20.6</td>
<td>17.5</td>
</tr>
<tr>
<td>Freedom from anti-social</td>
<td>41.3</td>
<td>37.3</td>
<td>22.6</td>
<td>39.8</td>
<td>42.9</td>
<td>36.6</td>
<td>39.7</td>
<td>38.0</td>
</tr>
<tr>
<td>tendencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family rel.</td>
<td>49.0</td>
<td>42.4</td>
<td>36.6</td>
<td>41.7</td>
<td>60.7</td>
<td>43.0</td>
<td>37.4</td>
<td>41.9</td>
</tr>
<tr>
<td>Occupation rel.</td>
<td>23.0</td>
<td>23.7</td>
<td>11.0</td>
<td>27.5</td>
<td>23.6</td>
<td>29.7</td>
<td>22.4</td>
<td>17.7</td>
</tr>
<tr>
<td>Community rel.</td>
<td>24.8</td>
<td>29.2</td>
<td>20.0</td>
<td>35.8</td>
<td>22.7</td>
<td>35.0</td>
<td>27.0</td>
<td>23.4</td>
</tr>
<tr>
<td>TOTAL ADJUST.</td>
<td>26.5</td>
<td>26.1</td>
<td>14.0</td>
<td>22.0</td>
<td>26.0</td>
<td>29.6</td>
<td>27.0</td>
<td>22.6</td>
</tr>
</tbody>
</table>
As a matter of mere interest, it is pointed out that of the one hundred and forty students tested, two from the music group and three from the control group had a percentile score of "1" on the personality test. This indicates that these students rate lower than 99% of the students used by Tiegs, Clark and Thorpe to standardize the test. On the other hand, two of the music group scored "90" and "95", which makes the range of scores from the lowest possible to the highest possible.

These data are to be interpreted for the differentiation of groups only, and then with the realization that self-rating tests are not exempt from the human tendency to falsify. Since the subjects were assured of a confidential treatment of the data, it is to be hoped that this tendency was checked by such precautions.

Correlations of Data

Coefficients of correlation were found between the intelligence quotients and the three principle phases of personality. The results from the entire music group and the entire control group were used in this procedure in the attempt to see what relationship, if any, exists between the degree of intelligence and the degree of total adjustment, self-adjustment and social adjustment. Coefficients of correlation indicating relationship between intelligence and personality traits are presented in Table 9.
TABLE 9

COEFFICIENTS OF CORRELATION BETWEEN I.Q.'S AND PHASES OF PERSONALITY

<table>
<thead>
<tr>
<th>Total Adjustment</th>
<th>Self Adjustment</th>
<th>Social Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence Scores</td>
<td>.17</td>
<td>.13</td>
</tr>
</tbody>
</table>

The coefficients of correlation are all positive, but so low that very little relation is indicated between the Intelligence Quotient and those specific personality adjustments tested. The significance of this low correlation is probably in line with the theories of Tyler and of Hartson, both of whom agree that people of lower intelligence may successfully use non-intellectual factors, such as an aggressive personality, to compensate for lack of mental ability.

The ages of the students and their intelligence and personality scores were also correlated in an effort to determine what, if any, effect the two might receive from increased age and experience. Table 10 shows the distribution of ages found in the students tested.

A majority of the students were grouped from the ages

---

3. H.T. Tyler, Bearing of Certain Personality Factors Other than Intelligence on Academic Success, p. 85.

of twenty to thirty, with the youngest and oldest subjects tested ranging from eighteen to sixty-five. As was mentioned before, the prevalence of teachers in the summer classes will explain the unusually wide range of scores.

**TABLE 10**

**AGE DISTRIBUTIONS OF STUDENTS TESTED**

<table>
<thead>
<tr>
<th>Age Groupings</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>9</td>
</tr>
<tr>
<td>20-24</td>
<td>48</td>
</tr>
<tr>
<td>25-29</td>
<td>40</td>
</tr>
<tr>
<td>30-34</td>
<td>18</td>
</tr>
<tr>
<td>35-39</td>
<td>12</td>
</tr>
<tr>
<td>40-44</td>
<td>6</td>
</tr>
<tr>
<td>45-49</td>
<td>4</td>
</tr>
<tr>
<td>55-65</td>
<td>1</td>
</tr>
</tbody>
</table>

The uneven distributions of ages made it impossible to determine results accurately by mean or median scores, but coefficients of correlation reveal a much higher relationship between age and personality adjustment than between intelligence and personality adjustment.

As Table 11 reveals, the older students tended to rate highest of all in self adjustment, and maintained a substantial lead in social adjustment and total adjustment over the younger students.
TABLE II

COEFFICIENTS OF CORRELATION BETWEEN AGES AND PHASES OF PERSONALITY

<table>
<thead>
<tr>
<th></th>
<th>Total Adjustment</th>
<th>Self Adjustment</th>
<th>Social Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.41</td>
<td>.44</td>
<td>.38</td>
</tr>
</tbody>
</table>

On the other hand, the correlation between age and intelligence quotients is slightly negative (.06), bearing out the already well-proved theory that intelligence, after reaching the adult level, does not increase with age.
CHAPTER V

SUMMARY AND CONCLUSIONS

The present study was undertaken in an effort to determine what types of young men and women are entering the profession of music as compared with those who are choosing other fields of specialization. The group of subjects for the investigation was comprised of one hundred and forty students of the North Texas State Teachers College, ninety music students and fifty students who were not enrolled in any music class. The music and non-music students have been compared in terms of coefficients of correlation and the differences of their mean scores, with respect to their intelligence quotients and their degree of personality adjustment. Comparisons have been made with reference to the total music and non-music groups, and to the following divisions of these groups: first, solo and ensemble musicians; second, men and women musicians and non-musicians. Table 12 summarizes the comparisons which are disclosed through the study.

Summary of Results

In this investigation, the music group as a whole surpassed the control group in intelligence quotients as measured
by the Otis test by a mean score of 7.3 points. While the control group as a whole falls in the upper limit of the scores classified by Otis as "normal", the music group as a whole is found at the upper limit of the "superior" classification.

TABLE 12
TOTAL RESULTS OF PERSONALITY AND INTELLIGENCE TESTS

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean Total</th>
<th>Mean Self</th>
<th>Mean Social</th>
<th>Mean I.Q.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Adjustment</td>
<td>Adjustment</td>
<td>Adjustment</td>
<td></td>
</tr>
<tr>
<td>Total music</td>
<td>26.2</td>
<td>33</td>
<td>19.6</td>
<td>118.8</td>
</tr>
<tr>
<td>Total control</td>
<td>18</td>
<td>22</td>
<td>16</td>
<td>111.5</td>
</tr>
<tr>
<td>Men music</td>
<td>26.5</td>
<td>33.1</td>
<td>20.2</td>
<td>121</td>
</tr>
<tr>
<td>Women music</td>
<td>26</td>
<td>33</td>
<td>19.1</td>
<td>116.8</td>
</tr>
<tr>
<td>Men control</td>
<td>14</td>
<td>18.9</td>
<td>11.4</td>
<td>109.4</td>
</tr>
<tr>
<td>Women control</td>
<td>22</td>
<td>25</td>
<td>20.6</td>
<td>113.5</td>
</tr>
<tr>
<td>Solo music</td>
<td>27.8</td>
<td>34.2</td>
<td>21.1</td>
<td>119.9</td>
</tr>
<tr>
<td>Ensemble music</td>
<td>24.8</td>
<td>31.9</td>
<td>18.2</td>
<td>117</td>
</tr>
</tbody>
</table>

When the musicians were divided into groups, the differences were even higher. The men musicians who chose solo work ranked highest of all in intelligence scores, with an advantage over the men in the control group of 14 points. The solo musicians rated slightly higher than the group
musicians, the men musicians several points higher than the women musicians.

With respect to personality, members of the music group ranked considerably higher in total adjustment and in all but one of the personality components which are included in the California Personality Test. Only in social standards did the control group rate a few points higher.

Scoring highest of all in total personality were the women soloists, with the men control group rating lowest. However, the men musicians as a whole slightly out-ranked the women musicians as a whole, and the solo group were somewhat better adjusted than the ensemble group. All of the smaller music groups, in personality as in intelligence, ranked higher than the control groups.

Correlations between intelligence scores and personality scores were found to be very low, though higher with relation to social adjustment than with either self adjustment or total adjustment.

When the ages of the students were correlated with their personality scores, however, a more definite relationship was found to exist, highest this time in self adjustment, and slightly lower in social adjustment and total adjustment.

The correlation between ages and intelligence quotients was slightly negative, indicating no connection between the two.
Conclusions

The educational implications of the results of this investigation are particularly significant with reference to the type of students preparing to enter the field of music and music teaching.

The music group which was studied in this investigation was made up of students who had all attained to junior, senior, or graduate standing. They reveal that the musician who has advanced thus far is superior in both intelligence and in personality adjustment to an equally advanced student preparing for some other field.

Since music is a comparatively expensive college course, and one requiring rather special talents to master, it is especially gratifying to realize that the students who were able to pass these requirements are also, as revealed in this study, the possessors of adequate and even superior intelligence and personality in relation to the control students with whom they were compared.

Differences within the music group, showing that the men rate slightly higher in intelligence quotients than the women, are also borne out by the control group and by previous studies of college groups. Personality ratings show little variations between the sexes.

The higher ratings on certain components of personality made by those musicians who chose to do solo work reveal that
they have much more self reliance, more social skills, better family and occupational relations, and less nervous symptoms, than do those who prefer to work in ensembles. The prevalence of such independent traits probably has a causative relation with their desires to perform alone, to take, as it were, the center of the stage. In the same way, the ensemble players are persuaded by their own timidities and lack of assurance into playing or singing with a group, where they will have others to form a background -- to lend moral support to their efforts.

The correlation of personality adjustment with age indicates that while intelligence cannot be appreciably increased, personality is molded and developed by experience and by circumstances; in the case of the subjects of this investigation, improved with the years. This is encouraging in the present study, since the music students, though superior to the control students, nevertheless have a rather low average according to the ratings which have been standardized by the authors of the California test. The music students especially need to be developed socially, for their low rating here indicates that they must learn to adapt themselves more readily to the many varied situations which they are likely to encounter in their profession.

Unfortunate and rather depressing are the low scoring and the pessimistic point of view revealed in the components
of personal freedom and occupational relations and shared by music and control groups alike. The almost total agreement on restricted freedom and lack of security in their teaching positions may perhaps be a personality expression, but more than likely it is a general fault of the profession which will be remedied in time.

The data and the number of subjects of this study are necessarily so restricted that the validity of the study is rather limited. There is also the difficulty of working with subjective factors for which no really scientific method of evaluation has yet been evolved.

Recognizing this difficulty, it probably would be wise for educators to use subjective judgment as well as the best tests available in the determining of personality factors.

Nevertheless, it is believed that objective tests such as those used in this study offer distinct possibilities for advancing our ability to measure present and future probabilities of success, and our consequent knowledge and understanding of that most intricate of problems -- human behavior.
BIBLIOGRAPHY

Books


Odenweller, A. L., Predicting the Quality of Teaching, New York, Bureau of Publications, Teachers College, Columbia University, 1936.


Tiegs, E. W., Clark, W. W., and Thorpe, L. F., California Test of Personality, Manual of Directions, California Test Bureau, 1940.

Tyler, Henry T., Bearing of Certain Personality Factors Other than Intelligence on Academic Success, New York, Bureau of Publications, Teachers College, Columbia University, 1931.


BIBLIOGRAPHY
(cont.)

Articles


Watson, Goodwin, "Professor Watson Sums Up the Good and Bad in Intelligence Tests," Teachers College Record, 1930.

Unpublished Material
