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## Construction of a music attitude scale.

Louise H. Holmquist

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CONSTRUCTION OF A MUSIC ATTITUDE SCALE

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A Thesis

Presented to

the Faculty of the Department of Psychology  
University of Omaha

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In Partial Fulfillment

of the Requirements for the Degree  
Master of Arts

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by

Louise H. Holmquist

August 1960

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## TABLE OF CONTENTS

CHAPTER	PAGE
I. THE PROBLEM . . . . .	1
Introduction . . . . .	1
Preliminary Survey of Literature . . . . .	2
Theoretical Background of the Problem . . . . .	5
Summary . . . . .	9
Statement of the Problem . . . . .	9
II. SURVEY OF RELATED RESEARCH . . . . .	10
Summary . . . . .	25
III. PROCEDURE . . . . .	27
Construction of the Attitude Scale . . . . .	27
Administration of the Scale . . . . .	38
Statistical Procedure . . . . .	39
IV. REPORT AND DISCUSSION OF FINDINGS . . . . .	41
Report of Findings . . . . .	41
Discussion of Findings . . . . .	47
V. SUMMARY AND CONCLUSIONS . . . . .	53
Summary . . . . .	53
Conclusions . . . . .	54
Suggestions for Further Study . . . . .	55
BIBLIOGRAPHY . . . . .	57
APPENDIX A . . . . .	60
APPENDIX B . . . . .	65

## LIST OF TABLES

TABLE	PAGE
I. Inter-correlations Obtained Between Scores on the General, Singing, Listening and Instrumental Scales for School A Seventh and Eighth Grade Students . . . . .	41
II. Norms for Seventh and Eighth Grade Students of School A, Seventh and Eighth Grade Students of School B, Ninth Chorus of School A and Ninth Chorus of School B . . . . .	42
III. Comparison of Norms for Seventh and Eighth Grades of School A and Seventh and Eighth Grades of School B . . . . .	44
IV. Comparison of Norms for Seventh and Eighth Grades of School A and Ninth Chorus of School A . . . . .	45
V. Comparison of Norms for Seventh and Eighth Grades of School B and Ninth Chorus of School B . . . . .	46
VI. Scale Scores of the Seventh and Eighth Grade Students of School A . . . . .	65
VII. Scale Scores of the Seventh and Eighth Grade Students of School B . . . . .	68

LIST OF TABLES (continued)

TABLE	PAGE
VIII. Scale Scores of School A Ninth Grade	
Chorus . . . . .	71
IX. Scale Scores of School B Ninth Grade	
Chorus . . . . .	72

## CHAPTER I

### THE PROBLEM

#### Introduction

The Junior High program in the Omaha Public Schools has finally developed from dream to reality. This development has necessitated a drastic change in the duties of special music teachers. It has also created many new problems in teaching techniques and scheduling of classes.

The past year the investigator was assigned to School A as a special music teacher. School A is a junior high school on the south central limits of Omaha. The enrollment of the school was small enough to permit a music teacher to spend only two and one half days per week there and still provide the desired time allotment for seventh and eighth grade general music classes. The time also allowed for teaching a ninth grade chorus.

The school had been in operation as a complete seventh through ninth grade junior high for one year. The principal, herself a music lover, was concerned over the apparent apathy of her students toward the music program as it had been conducted in the first year. This program had followed an accepted plan of procedure in junior high schools with emphasis on listening and studying composers.



Because of the principal's concern, the music supervisor and the teacher decided to try a more active program with an accent on singing.

As the year progressed, it became evident that the students needed to develop a feeling of accomplishment along with the active program. Several opportunities for public performance were arranged. The year culminated in a music festival in which every child participated.

It seemed apparent that interest in music was increasing. The realization came that it would be a great advantage to have a specific way of measuring this supposedly increasing interest. Thus an inquiry into procedures for measuring attitudes was instituted.

#### Preliminary Survey of Literature

A preliminary survey of literature in the fields of educational psychology and music education proved that authorities writing in these areas agree upon the importance of considering attitudes when teaching. Henry Lindgren says "we cannot teach successfully if we divorce the intellectual from the emotional side of life."<sup>1</sup> He

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<sup>1</sup>Henry Clay Lindgren, Educational Psychology in the Classroom (New York: John Wiley and Sons, Inc., 1956), p. 231.

continues this line of thought by suggesting that educators look upon learning as attitude formation as well as concept formation.

Lindgren gives another valid reason for attitude study in this paragraph.

Individual children tend to use the classroom group as a reference point in developing their attitudes toward education. If the group is favorable to classroom learning, the way is cleared for a fruitful relationship between teacher and students, but if the group is hostile or apathetic, there is much preliminary work for the teacher to do before he can even begin to create a situation in which positive learning will occur.<sup>2</sup>

The fact that class leaders often set the tone of favorable or unfavorable reaction to music is generally recognized by music teachers. This is especially true among boys. It should also be remembered that music is largely group effort and thus group attitudes are important to a music class.

Cyril R. Mill also stresses the effect of attitudes on climate in the classroom. He says "the immediate concern within the scope of each individual educator is to look at his own attitudes and those of his pupils so that classroom atmosphere is such that learning can take place."<sup>3</sup>

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<sup>2</sup>Ibid., p. 234.

<sup>3</sup>Cyril R. Mill, "Attitudes Affect Pupils' Learning," Educational Leadership, XLVI, 4, (January, 1960), p. 216.

Mill also recognized the importance of "set" or attitude in deciding to what elements of a learning situation children will respond. He suggests that "a child's attitude toward subject matter often sets up a process of selective attention. What he will learn is determined in part by his readiness to receive."<sup>4</sup>

Charles Leonhard mentions attitudes as they influence music education:

Attitudes are defined as general emotionalized reactions for or against things. Not only are attitudes an outcome of education but they also affect the efficiency of learning. Thus, it is important for the music educator to be able to appraise the attitudes which his students bring to his instruction and the attitudes they develop as a result of his instruction.<sup>5</sup>

James L. Mursell makes a noteworthy point concerning the relation of attitude and proficiency in singing:

Let us remember that singing is a highly personal act, involving not only the use of the vocal mechanism, but the whole physical, mental and emotional make-up of the personality. . . . And if we have hostile attitudes, lack of confidence, lack of desire, and will, the very instrument of song itself is affected, and probably reduced to impotence.<sup>6</sup>

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<sup>4</sup>Ibid., p. 213.

<sup>5</sup>Charles Leonhard, "Evaluation in Music Education," Basic Concepts in Music Education, Fifty-seventh Yearbook of the National Society for the Study of Education (Chicago: University of Chicago Press, 1958), p. 320.

<sup>6</sup>James L. Mursell, Music Education-Principles and Programs (Morristown, N. J.: Silver Burdett, 1956), p. 207.

Jenkins and Wood discuss the necessity of studying children's feelings and attitudes in a paragraph which also seemed appropriate as a conclusion for this preliminary survey.

As each teacher builds into his thinking the attitude of inquiry, he learns to accept children for themselves and thus changes his own attitude toward them. This is the essence of creative teaching and of the scientific method which is fundamental to any profession.<sup>7</sup>

### Theoretical Background of the Problem

A thorough understanding of the meaning of the term "attitude" was needed to conduct this study effectively. H. H. Remmers has defined attitude as an "affectively toned idea or group of ideas predisposing the organism to action."<sup>8</sup> This definition was adequate only as a starting point for understanding the intricacies of the concept of attitude. Reading in social psychology offered many additional insights into the nature of attitudes. A synthesis of this reading was made to amplify Remmers' definition. The following paragraphs contain what was judged to be a consensus of authorities.

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<sup>7</sup>Marion Jenkins and Gertrude Wood, "Seeking Clues to Children's Feelings and Attitudes," Childhood Education, 35:258, February, 1959.

<sup>8</sup>H. L. Remmers, Introduction to Opinion and Attitude Measurement (New York: Harper and Brothers, 1954), p. 3.

Attitudes are a result of experience and also determine subsequent experience. The complex interactions of an individual's "life space" make it very difficult to trace the historical development of an attitude. This activity is the chief concern of the psychiatrist not the educator. The attitude as it exists now in the immediate psychological field will most likely determine behavior.

Authorities agree that the most distinguishing feature of attitudes is their affective nature. Because feelings and emotions are involved, attitudes have a dynamic quality which impels an individual to action. It naturally follows that attitudes influence motivation.

Attitudes also have a perceptive aspect. Each individual perceives a situation differently. He concentrates on some aspects of the field and ignores others completely. This selection of perceptions is determined by the individual's beliefs and attitudes.

Attitudes also acquire a cognitive aspect. They determine the meanings which one attaches to one's perceptions. Thus it is evident that attitudes not only influence how an individual feels, but also how one sees, thinks and acts.

Attitudes are directed toward some object. This object, called a referent, may be an institution, person, symbol, slogan, ideal, activity--in fact any part of one's

environment. A favorable attitude directed toward an activity is usually thought of as an interest.

Opinions, beliefs, and attitudes are interrelated expressions. There are subtle differences between the three terms which most psychologists recognize. Beliefs are usually considered to be more neutral than attitudes. They are not necessarily "pro" or "con". However, a neutral attitude may well be classified as a belief. Opinions are verbal revelations of attitude. They often represent the interaction of several attitudes.

Since this study was also oriented toward attitude change, it was advisable to gain insight into accepted psychological theory regarding this area. It is important to note that attitudes are determined by the culture in which an individual lives. They are also determined by an individual's needs. Culturally approved attitudes are difficult to change in an individual who has an overwhelming need for social approval.

Foshay and his associates list some very practical ways of changing attitudes in a school situation.

They are:

1. Adding new and desirable experiences with a referent.
2. Offering appropriate associations with a referent.

3. Offering a ready-made attitude toward a referent.
4. Providing for vicarious experience with a referent.
5. Arranging a very dramatic experience with a referent.<sup>9</sup>

The next area of investigation was that of attitude measurement. Psychological measurement cannot be an absolute process when there is no physical continuum which can be related to the psychological continuum. Guilford presents an excellent rationale relating physical and psychological measurement. He points out that additivity and order are two of the basic properties of numbers. In psychology, both can be accomplished by use of a scale. The type of scale used in the social sciences is usually called an ordinal scale.<sup>10</sup>

Conrad and McNemar agree that attitude measurement consists of arranging individuals (or groups of individuals) in rank-order by means of a scale.<sup>11</sup>

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<sup>9</sup>Arthur W. Foshay, Kenneth Wann and associates, Children's Social Values (New York: Teachers' College, Columbia University Bureau of Publications, 1954), p. 25.

<sup>10</sup>J. P. Guilford, Psychometric Methods (New York: McGraw-Hill Book Co., 1954), pp. 1-16.

<sup>11</sup>Herbert S. Conrad, "Some Principles of Attitude Measurement: A Reply to Opinion Attitude Methodology," Psychological Bulletin 43:579 (November, 1946); and Quinn McNemar, "Opinion-Attitude Methodology," Psychological Bulletin 43:289 (July, 1946).

With this foundation in psychological theory, it was possible to formulate the problem and enter into the investigation without reservations.

### Summary

Teaching experience in a new junior high situation in the Omaha schools resulted in a desire to measure students' attitude toward music. A preliminary survey of educational psychology and music education literature indicated that attitudes were a valid concern for teachers. The psychological concept of attitude was explored and found to be well defined. Psychometric methodology suggested that attitude measurement was best accomplished by means of a scale.

### Statement of the Problem

Therefore the problem for this study was stated:  
To construct a scale which will measure Junior High School students' attitude toward music.



## CHAPTER II

### SURVEY OF RELATED RESEARCH

Exploration of existing research in the field of attitude study revealed many additional insights which gave a clearer picture of the possibilities and limitations of an attitude scale. They also helped to formulate the procedure used in constructing the scale. Research authorities were also consulted. The theories advanced as a result of their experience were most helpful.

Arthur W. Foshay and his associates have made an intensive study of the social values of children. Foshay relied principally upon observing children's behavior and inferring attitude from the observations. He stresses the fact that the situation plays a part in determining what attitudes will influence behavior and how the behavior will be influenced. He also makes the suggestion that the situation must be viewed through the eyes of the perceiver if valid appraisal is possible.<sup>1</sup>

Observation of behavior is not the only method of discovering attitudes. McNemar stresses this point in the following quotation:

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<sup>1</sup>Arthur W. Foshay, Kenneth Wann and associates, Children's Social Values (New York: Teachers' College, Columbia University Bureau of Publications, 1954), p. 25.

No one has ever seen an attitude; an attitude however real to its possessor, is an abstraction the existence of which is inferred either from nonverbal, overt behavior or from verbal or symbolic behavior. The term opinion is frequently defined as the verbal expression of an attitude.<sup>2</sup>

Clyde Coombs advances an interesting theory which consolidates the non-verbal and verbal facets of attitude measurement. He concludes that the endorsement of an opinion can be interpreted as manifest behavior. A statement of opinion may be considered as typifying a certain degree of attitude and perhaps different degrees on different attitudes. At a given time, an individual will endorse a statement which comes close to his own attitude "ideal" and will reject items representing a different "ideal" than his own. Coombs concludes by saying "manifest behavior permits inferences to be made about the relationships of the genotypic magnitudes of the stimuli to those of the individuals."<sup>3</sup>

Hartley and Hartley have conducted much research in attitudes as applied to social psychology. These authorities analyze attitudes in terms of four major

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<sup>2</sup>Quinn McNemar, "Opinion-Attitude Methodology," Psychological Bulletin 43:289 (July, 1946).

<sup>3</sup>Clyde Coombs, "Theory and Methods of Social Measurement," Research Methods in the Behavioral Sciences (New York: The Dryden Press, 1953), p. 490.

dimensions-direction, degree, intensity and salience. Direction is the term used for the concept of "for" or "against." It can be expressed also as "value" or "aversion." Degree implies the extent of favorableness or unfavorableness. Intensity denotes the strength of feeling involved. Salience refers to the importance of the attitude as a determinant of behavior. One may have an intense aversion to snakes, but if one is not likely to come in contact with a snake, the attitude possesses little salience. All authorities who have advanced models for attitude scale construction have attempted to measure direction and degree. Degree and intensity are closely related. The more extremely favorable or unfavorable an attitude, the more intense it is likely to be.<sup>4</sup>

Numerous other researchers have supported the Hartleys' contention that intensity and degree are related. This is called the phenomenon of the "U" or "J" curve.

A caution regarding scale construction was found in the problem of dimensionality. Psychologists are well aware that behavior is largely a result of many interacting attitudes. Opinions also represent the interaction of attitudes. Great care must be exercised to avoid such

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<sup>4</sup>Eugene L. Hartley and Ruth E. Hartley, Fundamentals of Social Psychology (New York: Alfred A. Knopf, 1952), pp. 654-658.

generalized scales that the attitudes tapped are not closely related. Thurstone's studies of factor analysis have caused psychologists to be painfully conscious of dimensionality in all areas of testing.

Conrad makes a valuable contribution to this line of thought:

From the complex origins and complicated nature of many opinions and most attitudes, we should judge that strictly uni-dimensional scales in the realms of opinions and attitudes may be virtually impossible to construct-except possibly for issues which are indeed quite narrow and simple.<sup>5</sup>

Krech and Crutchfield have an observation to make along the same vein:

It should be understood, however, that there is nothing intrinsically improper in having an attitude test cover several different aspects of the attitude or belief providing these aspects are part of a constellation making up the belief or attitude.<sup>6</sup>

The same authorities continue their discussion with a suggestion which was thought to be particularly worthy of emulation. They advocated a "careful, preliminary analysis of the psychological object as it exists for the

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<sup>5</sup>Herbert S. Conrad, "Some Principles of Attitude Measurement: A Reply to Opinion-Attitude Methodology," Psychological Bulletin 43:571 (November, 1946).

<sup>6</sup>David Krech and Richard S. Crutchfield, Theory and Problems of Social Psychology (New York: McGraw-Hill Book Company, Inc., 1948), p. 231.

people to be measured" as a means of constructing a simplified, purified scale.<sup>7</sup>

Krech and Crutchfield also make a most searching exposition of the practices desirable in interpreting the results of attitude studies. As stated before, there is a dynamic relation between needs and beliefs (or attitudes). Research workers err when they try to change attitudes without taking into account the service performed by the beliefs and attitudes in meeting an individual's needs. They also err when they try to discover an underlying need which is universal for all people holding the same attitude or belief. Another mistake in interpretation occurs when workers content themselves with accounting for the history of the attitude rather than concerning themselves with treating it as it exists in the present.<sup>8</sup>

Robert MacLeod presents another consideration which demands caution in attitude study. His approach concerns the "structuring" of an attitude. He suggests that the ideas involved may be very vague. The attitude may not be functioning as a regulator of behavior at all. Under these conditions, care in testing is necessary for the attitude may be structured for the first time when the subject is asked to respond to questions. To avoid unfavorable

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<sup>7</sup>Ibid., p. 232.

<sup>8</sup>Ibid., p. 196.

structuring of an attitude, MacLeod suggests use of the free-interview method of assessment so leading questions will not influence the subject.<sup>9</sup>

The question of unstructured attitudes leads logically into another recent criticism of attitude study. Many recent publications of research are most concerned with unconscious attitudes. Many writers hold these to be the real determiners of behavior. Since they are not a part of the conscious content of the individual's mind they will not appear in opinion scale appraisal. Cattell seems to be the leading exponent of the crusade. His recent book is most contemptuous of studies which do not take unconscious motives and attitudes into account.<sup>10</sup> Nevertheless it was felt that projective techniques, the method used to measure these attitudes, were too complex and too controversial to be attempted in this study.

The preceding discussion of research in attitudes stemmed principally from social psychology. It was

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<sup>9</sup>Robert B. MacLeod, "The Phenomenological Approach to Social Psychology," Person Perception and Interpersonal Behavior, Renato Taguiri and Luigi Petrullo, editors (Palo Alto, California: Stanford University Press, 1958), p. 43.

<sup>10</sup>R. B. Cattell, Personality and Motivation Structure and Measurement (Yonkers-on-Hudson, N. Y.: World Book Company, 1957).

advisable to investigate educational testing fields to discover if any suitable measuring instrument for music attitudes had already been devised. The Education Index revealed no accounts of music attitude scales.

The February, 1960, issue of the Nebraska Music Educator carried an advertisement of a "Test of Musicality." This test has been compiled by Dr. E. Thayer Gaston, Chairman of the Department of Music Education at the University of Kansas. The test was designed to evaluate musical attitudes and aptitudes.<sup>11</sup> Since the present study was designed to concentrate upon attitudes only, this test did not seem useable.

H. L. Remmers has designed an attitude scale which is supposed to be useful for measuring attitudes toward any school subject. The consensus of evaluations of this scale was that the items are too general to give a valid indication of attitude toward specific school subjects.

Wrightstone and his associates have summarized the situation in regard to attitude scales for use in the schools with this statement.

Anyone who consults available sources of information concerning published test materials such as the Mental Measurements Yearbooks will be struck by the paucity

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<sup>11</sup>The Nebraska Music Educator, XVIII, (Number 4, February, 1960), p. 4.

of published instruments in the area of attitudes which are suitable for use below the college level.<sup>12</sup>

All vocational interest inventories contain measures of musical interest. Many educators suggest the adaptation of such inventories for attitude appraisal. Interest is defined as a favorable attitude toward an activity, but does not include the whole gamut of feelings about music. This suggestion was accordingly rejected for this study.

Many teachers have designed informal interest measures as teaching aids. Their value should not be discounted. Arthur Jersild, a prominent educational psychologist has developed the Springfield Interest Finder in cooperation with staff members of the Springfield, Missouri Schools. This instrument is mentioned many times in the literature. Again the narrow limit of interest was rejected.

Since no music attitude scale suitable for use in the present study was found, one last area of investigation was pursued before a scale was constructed. Several research accounts were examined to determine common procedures used in formulating scales.

Gough described construction of a scale used to

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<sup>12</sup>J. Wayne Wrightstone, Joseph Justmann and Irving Robbins, Evaluation in Modern Education (New York: American Book Co., 1956), p. 358.



measure attitude of grade school children toward Negroes. One hundred fifty statements covering the universe of statements relevant to the subject were formulated. Judges were asked to sort them into five piles according to the degree of favorableness or unfavorableness expressed by each statement. Seventy-five statements were retained and made into a scale which was given to a number of children. The highest and lowest twenty-five per cent of the papers were chosen to conduct an item analysis. Thirty statements were left from this process. These statements were again analyzed for ambiguity and the eighteen most differentiating statements were used in the final form of the scale.<sup>13</sup>

McGue reported on making a scale for evaluating attitude toward intensive competition in team games. The procedure was similar to the study mentioned above. One hundred forty-five statements were used. These were formulated by interviewing thirty-five experts in physical education. The items were classified into seven areas.<sup>14</sup>

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<sup>13</sup>Harrison Gough and others, "Children's Ethnic Attitudes: Relationship to Certain Personality Factors," Readings in Educational Psychology (Boston: Houghton Mifflin Co., 1955), pp. 241-247.

<sup>14</sup>Betty Foster McGue, "Constructing an Instrument for Evaluating Attitudes Toward Intensive Competition in Team Games," Research Quarterly 24:205-209 (May, 1953).

Kaywood reported upon an experiment using the Siebricht Driver Attitude Scale. In this scale the subjects were asked to respond to a series of items by checking one of five categories. These Categories were: strongly agree, agree, undecided, disagree, strongly disagree. The responses of the subjects were scored by comparing them with the responses of 125 experts in driver education. This was a most unusual device. Kaywood also introduced a weighting system which gave higher scores to favorable replies. Kaywood felt that this system gave a better picture of the true feelings of the subjects taking the test.<sup>15</sup>

Carter made a most interesting report of a study concerning the prediction of school achievement by scores on attitude items rather than scores on intelligence tests. The attitude measure used was the California Study Methods Survey. This device measured four areas: (1) Morale and personal adjustment (2) Scholarly drives and values (3) Mechanics of study procedures (4) Systematic working habits. The results of the attitude test were correlated with results of the ACE Intelligence Test and with grade point averages. Carter found that these four factors

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<sup>15</sup>Richard Kaywood, "Interpreting Attitude Scales," Safety Education 35:22-25 (March, 1956).

predict school achievement as well as intelligence tests do. Carter also mentioned a study by Krumboltz which concluded that self-report inventories were more promising appraisal measures than reports based upon projective techniques.<sup>16</sup>

Costin described a study made with a Parental Attitude Research Instrument which was developed by the National Institute of Mental Health. This instrument consists of thirty-two scales. Each scale contains five to ten items. The scales measure parental attitudes toward aspects of child rearing and family life. The scales were developed by factor analysis.<sup>17</sup>

Kamenetzky and his associates described a very pertinent study. Four tests were constructed each along a different theoretical line but essentially the same in content. The first test employed a projective approach. The second was a Likert type scale. The third was constructed by Guttman's method of scalogram analysis. The fourth was a modification of Stouffer's scalogram analysis.

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<sup>16</sup>Harold G. Carter, "Improving the Prediction of School Achievement by Use of the California Study Methods Survey," Educational Administration and Supervision 45:255-260 (September, 1959).

<sup>17</sup>Frank Costin, "Measuring Attitudinal Outcomes of Child Psychology with the Parental Attitude Research Instrument," Journal of Educational Research 53:287-294 (April, 1960).

All four tests were used to predict willingness of college students to sign a petition in favor of Fair Employment Practices legislation. Kamenetzky concluded that all four tests predicted equally as well.<sup>18</sup>

Evaluation of the research articles just described indicated that the selection of items for the attitude scale was not a standard procedure. This process appeared to be left to the discretion of the investigator. The question of dimensionality also seemed to be one that must be decided by the person constructing the scale. A great deal of latitude in scoring procedure was also evident. The remainder of the processes involved were found to follow either the method initiated by Thurstone or that advanced by Likert.

Guilford lists the following steps in scaling procedure according to the Thurstone technique. One to two hundred statements should be selected to cover the whole range of feeling from unfavorable to favorable rather evenly. The statements should be short and to the point. Acceptance or rejection must mean something about the attitude to be measured. "Double barreled" statements

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<sup>18</sup>Joseph Kamenetzky, George Burgess and Thomas Rowan, "The Relative Effectiveness of Four Attitude Assessment Techniques in Predicting a Criterion," Educational and Psychological Measurement 16:187-194, 2, 1956.

should be excluded. Each statement should be typed on a separate card. The cards should then be sorted by judges into piles. The highest and lowest piles might be represented with "anchoring" statements. The middle pile is neutral. After sorting by judges, the median value given to each statement is computed. The quartile deviations are also computed. Since low deviation values indicate higher agreement by judges on scale values, the best items selected should fall below the median quartile deviation. Subjects are asked to respond to the scale by checking the items with which they agree. Guilford suggests that the number of checks be limited so that the response might be nearer the average held by the respondee. A mean or median of the scale values is taken as the score. Ease of scoring is the chief asset of this scale. Lack of checks on the discrimination power of items is the chief criticism.<sup>19</sup>

The Likert method as described by Guilford is more like ordinary test development. A number of favorable items and a nearly equal number of unfavorable items are selected by the tester. Subjects are asked to respond by checking one of three to five categories. Usually these

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<sup>19</sup>J. P. Guilford, Psychometric Methods (New York: McGraw-Hill Book Company, Inc., 1954), pp. 457-460.

categories are anchored by such words as agree, disagree and undecided. The responses are weighted and the score is the sum of weights. Every item must be checked in some category. Usually the test is subjected to some form of item analysis and only the most discriminating statements are retained in the scale. This is an advantage for this scale. The chief disadvantage is the scoring labor. Guilford states that it is a "common finding that the Likert method leads to scores with higher reliabilities with fewer items than does the Thurstone method."<sup>20</sup>

Guilford also discusses the Guttman method of scale analysis. This method is based on the idea that a good scale should be homogeneous. If an individual checks an item on a Guttman scale, he will check every other item below it in value, or vice versa. This is called "reproducibility." The drawback to this method is that the attitude area tapped is so narrow that often it is only possible to include statements that are a rewording of the same thought. Guilford concludes that the choice of method therefore lies between Thurstone and Likert.<sup>21</sup>

Edwards has made an extensive survey of research involving comparison of the two methods. He concludes, on the basis of his survey, that the "relative ordering of

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<sup>20</sup>ibid., p. 460.    <sup>21</sup>ibid., p. 462.

subjects would be essentially the same on both scales."<sup>22</sup>

Edwards also concludes as a result of his survey that the number of judges for a Thurstone scale need not be excessively large. Reliable scale values may be secured from a smaller number and thus cut down the time and labor in making the scale.<sup>23</sup>

Edwards also suggests a simple discrimination technique for choosing items for a Likert scale. He says "we might use the difference between the means of the high and low groups on the individual statements as a basis for selecting the 20 to 25 items desired for the scale."<sup>24</sup>

Edwards also raises a question about Thurstone's neutral attitudes. Edwards suggests that the category is a catch-all for ambiguous and irrelevant statements. He concludes "thus the probability of endorsement of a Thurstone statement with a neutral scale value would seem to be much the same for those with attitudes properly scaled at both extremes of the psychological continuum."<sup>25</sup>

Torgerson has made a very recent compilation of techniques used in attitude scale construction. In his discussion of the method originated by Thurstone he makes

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<sup>22</sup>Allen L. Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century-Crofts, Inc., 1957), p. 168.

<sup>23</sup>Ibid., p. 169.

<sup>24</sup>Ibid., p. 155.

<sup>25</sup>Ibid., p. 206.

the suggestion that the mean be used to compute scale values. The logical measure of dispersion (agreement of judges) would then be the standard deviation.<sup>26</sup>

Torgerson also suggests that the final scale will represent a compromise between choosing items with the least dispersion and items that spread evenly over the continuum. It may be necessary to sacrifice one for the other.<sup>27</sup>

### Summary

The discussion of related research contained in this chapter was quite detailed because it seemed logical that a wide background in testing practices would result in construction of a more effective scale. The suggestions of research authorities coupled with the accounts of actual field studies were most valuable guides in determining appropriate procedures.

A good starting point was found in Krech and Crutchfield's suggestion to make a careful preliminary analysis of the psychological object as it exists for the subjects examined. Foshay's idea of viewing the situation

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<sup>26</sup>Warren S. Torgerson, Theory and Methods of Scaling (New York: John Wiley and Sons, Inc., 1958), p. 72.

<sup>27</sup>Ibid., p. 88.



through the eyes of the perceiver followed the same line of approach. MacLeod's caution about careless structuring of attitudes was also a worthwhile consideration for initiating the study.

Guilford, Edwards and Torgerson each contributed significant guides to method at vital decision points in the study. The concepts of dimensionality advanced by Conrad and Krech and Crutchfield were also employed in constructing the scale.

The Hartley's discussion of direction, degree, intensity and salience was vital for complete understanding of the problem of attitude measurement. Krech and Crutchfield's stipulations about interpreting the results of attitude studies was also important.

Research accounts demonstrated the variety of ways that the basic techniques of Thurstone and Likert could be adjusted to fit specific situations. Kamenetzky's findings tended to justify the rejection of projective techniques.

Since research described in this chapter revealed no suitable music attitude scale presently available, the way was now clear to proceed with scale construction.

## CHAPTER III

### PROCEDURE

#### Construction of the Attitude Scale

Because of the age of the children involved, much careful thought was given to initiating the study. There seemed to be some possibility that attitudes toward music were not sufficiently structured to measure. It was not desirable to ask leading questions which might tend to crystallize a negative attitude unnecessarily.

Finally it was decided to ask the children four open-end questions:

1. How do you feel about music in school?
2. How do you feel about music outside of school?
3. How does your family feel about music?
4. How do your friends feel about music?

Four hundred fifty children in the four schools taught by the investigator were asked to write on these questions. In addition, the two teachers in the junior high adjacent to School A were asked to obtain answers from four hundred fifty of their students. This neighboring junior high, hereafter called School B was in a slightly more favorable socio-economic residential district. It was thought that slightly different replies might be

received there.

The children in all schools were told to keep their replies anonymous. They were also urged to be perfectly frank in expressing themselves.

It was hoped that these papers would provide an opportunity for a "careful, preliminary analysis of the psychological object" as advocated by Krech and Crutchfield.<sup>1</sup> It was also hoped that the papers would provide items for the scale stated in language readily understandable by junior high children.

Reading these papers was a revelation in itself. The fear that attitudes toward music were not structured appeared to be unfounded. The great amount of listening to music which took place in the home was also a surprising discovery. An immediate change in teaching technique was instituted as a result of the unfavorable comments about the type of songs sung in school.

Analysis of replies seemed to indicate that attitude toward music might possibly be multidimensional. Many children professed liking for singing activities only. Many stated that they did not like to sing but enjoyed listening. Still others stated a preference for playing an instrument. A few children mentioned dancing to music.

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<sup>1</sup>Cf. ante, p. 13.

In the Omaha schools, this activity is stressed in the physical education department therefore the dancing references were minimized.

It was finally decided to attempt to differentiate in the scale between listening, singing and playing instruments. Since music education also recognizes these three activities as major parts of the music teaching program, it seemed a logical thing to do. It was also decided to attempt to discover some general items which might apply in all areas.

One hundred fifty statements were selected. The wording used by the children was sometimes different than the way an adult would phrase the same thought. In spite of this difference, the original wording was retained in hopes of achieving better peer understanding. The statements were chosen to cover the range of feeling from very favorable to very unfavorable. Items representing the range of feeling about each of the three activities were included. In addition items which were thought to be general in application were included.

It was hoped that these statements could eventually be developed into a Thurstone type scale because of the ease of scoring it afforded. The Thurstone scale requires a subject to check only those items with which he agrees. It would be a simple matter to compute a mean score from

a few check marks. The type of scale desired justified the inclusion of statements representing the "pro" and "con" of the same activity.

Each of the one hundred fifty statements was typed on an individual card. The cards were to be sorted into five piles numbered from one to five. Pile One was designated as "Highly Unfavorable." Pile Three was designated as "Neutral." Pile Five was designated as "Highly Favorable." The two intervening piles carried numbers only.

Ten music teachers in the Omaha schools were asked to act as judges. Each of the teachers was experienced in teaching junior high children. The teachers were asked to make four sorts. The directions for the first sort were to judge each item in terms of degree of favorableness or unfavorableness toward music in general. They were also asked to sort in such a way that all piles would have some cards on them when the sort was finished. The results of this process were recorded on the back of each card.

The cards were shuffled and the teachers were asked to judge the same items in terms of favorableness or unfavorableness toward singing. A pile labeled "Discard" was provided for items which did not fit this category. Again the results were recorded. The same procedure was repeated for listening and playing instruments.

After the judging process was completed, the cards were turned over and the pattern of judgments was examined. It was decided that it would require the agreement of nine or more judges to place a statement in the singing, listening or instrumental scale. Two statements were eliminated because only eight judges agreed upon their disposition. It was also decided that items universally placed in two scales would be eliminated. This caused the discard of three statements.

Placement in the singing or instrumental scale demanded the agreement of nine or more judges. One statement had the required number of judgments for the singing scale but also had four judgments for the listening scale. This item was also eliminated.

The listening scale required slightly different treatment. No item was accepted unless nine or more judges agreed that it belonged there. However since one might listen either to vocal or instrumental music, a scattering of votes in these two areas was allowed.

The general scale also required different treatment. Items for this scale were chosen when they received but a scattering of votes in one or more areas. This seemed a reasonable solution of a difficult problem. Only one general statement had no votes in another column.

The final analysis of statements at this point showed the following distribution:

Statements eliminated because of pattern	6
Statements retained in the general scale	60
Statements retained in the singing scale	35
Statements retained in the listening scale	23
Statements retained in the instrumental scale	<u>26</u>
Total	150

The next procedure involved computing scale values for the remaining items. Torgerson's formula for computing the mean scale value was used. It is as follows:

$$S_j = \frac{1}{N} \sum_{g=1}^{m+1} c_g f_{jg}$$

where  $S_j$  = observed mean scale value of stimulus  $j$   
 $N$  = number of ratings of stimulus  $j$   
 $m + 1$  = number of categories  
 $c_g$  = value of category  $g$   
 $f_{jg}$  = number of times stimulus  $j$  is sorted into category  $g$ <sup>2</sup>

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<sup>2</sup>Warren S. Torgerson, Theory and Methods of Scaling (New York: John Wiley and Sons, Inc., 1958), p. 72.

The next step was to evaluate the statements in terms of agreement of judges. Where there was wide disagreement, the items naturally would be too ambiguous for use regardless of the scale value. Since the mean scale value had been used, the standard deviation was used as an index of dispersion. This was also according to Torgerson.<sup>3</sup> However, Torgerson did not give a specific formula for the purpose. The method used for calculating a standard deviation from an assumed mean proved to lend itself to the situation. This formula was conceived thus:

$$\sigma = \sqrt{\frac{\sum fx^2}{N} - \left(\frac{\sum fx}{N}\right)^2}$$

where  $\sigma$  = standard deviation or index of dispersion  
 $f$  = number of judgments in each category  
 $X$  = scale value assigned to each category  
 $N$  = total number of judgments

The mean dispersion of all statements in each scale was then calculated. Using the mean dispersion only would result in the discard of a great many statements. Again Torgerson<sup>4</sup> was used as an authority and a compromise was

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<sup>3</sup>Ibid., p. 75.    <sup>4</sup>Cf. ante, p. 24.



effected. The dispersion used as a criterion of rejection was arbitrarily raised a few points in each scale. The mean dispersion and the dispersion value retained in the scale are represented below:

General scale	mean dispersion .66	used .78
Singing scale	mean dispersion .58	used .67
Listening scale	mean dispersion .68	used .77
Instrumental scale	mean dispersion .41	used .50

Nineteen items were discarded from the general scale because the dispersion index was too high. Nine statements were eliminated from the singing scale, six from the listening scale and four from the instrumental scale for the same reason. This left the following distribution in each scale:

Scale	Favorable Items	Unfavorable Items	Neutral Items
General	20	20	1
Singing	11	14	1
Listening	6	11	0
Instrumental	11	11	0

A major decision was now required. Only two neutral statements were left, one in the singing scale and one in the general scale. The scale values, while evenly divided between favorable and unfavorable categories tended to concentrate at the extreme ends of the continuum.

The obvious solution seemed to be to eliminate the two neutral items and develop a Likert scale.

It was realized that technically much of the work done in computing scale values and dispersions was not a part of the Likert process. Nevertheless it was felt that greater confidence in the remaining items could be assumed because of the process.

Edwards gives a detailed account of the Likert method scale development. His suggestions were used to complete the scale building process.<sup>4</sup>

A certain amount of editing was necessary to convert the listening and instrumental statements into Likert items. Five unfavorable statements in the listening scale were found to have the opposite thought expressed by a favorable statement. This was needed for a Thurstone scale but was not necessary in a Likert scale. These five statements were eliminated leaving six favorable and six unfavorable statements.

Four statements in the instrumental scale were in a similar situation. Since the balance between favorable and unfavorable statements was even, two each of these were dropped. This left a total of eighteen items with no

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<sup>4</sup>Allen L. Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century-Crofts, Inc., 1957), pp. 149-159.

repetition of thought.

The four scales were now made ready for administration. Favorable and unfavorable items were shuffled together to eliminate response set. Provision was made under each item to check one of five response categories. These categories were labeled (1) Strongly agree (2) Mildly agree (3) Undecided (4) Mildly disagree (5) Strongly disagree. The separate scales were given to one hundred children. Thirty-five of these children were from School A. Sixty-five children were from other schools taught by the investigator.

The tests were scored in accepted Likert fashion. Responses to favorable items were weighted 4, 3, 2, 1, 0 respectively. The weights were reversed for unfavorable statements. The score was a summation of weights.

The twenty-five highest scoring papers and the twenty-five lowest scoring papers on each scale were subjected to an item analysis. This was necessary to determine the consistency or discriminatory power of each item. Obviously an item checked indiscriminantly by high scorers and by low scorers was not a good attitude measure. The mean "low" score of each item was subtracted from the mean "high" score. This gave a figure which might be called an index of consistency. The higher this figure was, the more valuable the item.

The statements in each scale were then arranged in rank order according to the size of this index. Again a compromise between quantity and quality was instituted, and the final statements were chosen with the best discriminatory power possible. The range of indices of consistency, the number of items chosen for each scale and the lowest index used is represented below:

Scale	Range of Indices of Consistency	Minimum Index Chosen	Number of Items Chosen
General	2.60 to .60	1.24	25
Singing	2.28 to .64	1.28	18
Listening	1.88 to .62	1.32	8
Instrumental	2.00 to 1.04	1.24	12

A complete list of final scale items together with all statistics concerning them appears in Appendix A.

The final test was constructed in booklet form. The students did not know where one scale ended and the other began, but provision was made to keep the items from each scale in order so that four separate scores might be computed. A separate answer sheet was provided to facilitate scoring. This sheet gave the number of each statement and provided space for a check to be made in front of each response category. The response categories were the same as those in the preliminary test.

### Administration of the Scale

The final form of the test was not completed soon enough in the school year to measure attitude change on a test, re-test basis. The next best procedure was to use it as a basis of comparison between two schools.

Because of its previous involvement, School B was the logical choice for this comparison. School B has a much larger seventh and eighth grade enrollment than School A. Since the total seventh and eighth grade population in School A was approximately two hundred twenty students, a like number of students were tested in School B. The final count was two hundred twenty-four for School A and two hundred twenty-one for School B. These numbers represent an almost equal division between seventh and eighth grades respectively. This fact was not considered too pertinent since music is required in both grades, and the music situation is virtually the same.

In addition, sixty-three members of the ninth grade chorus in School A responded to the scale. Seventy-one members of the ninth grade chorus in School B responded also. These members represented essentially the total enrollment of both groups. Chorus is an elective subject at this level.

The completed tests were scored as before.

Responses to favorable items were weighted thus: Strongly agree 4, Mildly agree 3, Undecided 2, Mildly disagree 1, Strongly disagree 0. Unfavorable items received reverse weights in this manner: Strongly agree 0, Mildly agree 1, Undecided 2, Mildly disagree 3, Strongly disagree 4. Each child received a summation score on each of the four scales. These scores were placed in Appendix B.

### Statistical Procedure

After scoring the four scales, the results from the total seventh and eighth grade classes of School A numbering 224 children were used for correlation. Scores on each scale were correlated with scores on every other scale. The Pearson Product Moment correlation formula was used. These results were put into a correlation matrix to determine the relationship between scales.

Norms consisting of the mean and standard deviation for the seventh and eighth grades of School A, seventh and eighth grades of School B, ninth grade chorus of School A, and ninth grade chorus of School B were computed.

The variances were compared by means of an F ratio. The comparisons were made on each scale between the ninth grade chorus and seventh and eighth grades of School A, between the ninth grade chorus and seventh and eighth

grades of School B and between the seventh and eighth grades of School A and School B.

The formula used was:

$$F = \frac{\sigma_1^2}{\sigma_2^2} \cdot \frac{n_1 (n_2 - 1)}{n_2 (n_1 - 1)}$$

where  $\sigma_1 > \sigma_2^5$

The significance of the difference between the means,  $t$ , was computed by the following formula:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\sigma_1^2}{n_1 - 1} + \frac{\sigma_2^2}{n_2 - 1}}}$$

The correlation matrix and the comparison of norms will be presented and discussed in the next chapter.

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<sup>5</sup>Henry E. Garrett, Statistics in Psychology and Education (New York: Longmans, Green and Company, 1958), p. 303. (Formula evaluated in terms of df by Dr. William E. Jaynes).

<sup>6</sup>Quinn McNemar, Psychological Statistics (New York: John Wiley and Sons, Inc., 1949), p. 223. (Formula also evaluated in terms of df by Dr. William E. Jaynes).

## CHAPTER IV

### REPORT AND DISCUSSION OF FINDINGS

#### Report of Findings

The scores of the seventh and eighth grade students of School A were computed for each scale. The results were compared by means of Pearson product moment correlation coefficients. The correlation matrix is shown in Table I. It will be noted that the singing scale correlated highest with the general scale and lowest with the listening scale. The listening scale also correlated highest with the general scale and lowest with the instrumental scale. The instrumental scale correlated highest with the singing scale and lowest with the listening scale.

TABLE I

INTER-CORRELATIONS OBTAINED BETWEEN SCORES ON THE GENERAL, SINGING, LISTENING AND INSTRUMENTAL SCALES FOR SCHOOL A SEVENTH AND EIGHTH GRADE STUDENTS

	(1) G	(2) S	(3) L	(4) I
(1) General	1.000	.760	.575	.508
(2) Singing	.760	1.000	.552	.579
(3) Listening	.575	.552	1.000	.447
(4) Instrumental	.508	.579	.447	1.000



The norms, consisting of mean and standard deviation for each scale were computed for each group taking the tests. These are represented in Table II.

TABLE II

NORMS FOR SEVENTH AND EIGHTH GRADE STUDENTS OF SCHOOL A,  
SEVENTH AND EIGHTH GRADE STUDENTS OF SCHOOL B,  
NINTH CHORUS OF SCHOOL A AND  
NINTH CHORUS OF SCHOOL B

Scale Norms	A 7 & 8	B 7 & 8	A 9	B 9
<b>General</b>				
Mean	66.38	61.55	69.75	73.34
Standard deviation	17.39	19.59	17.88	12.49
<b>Singing</b>				
Mean	49.05	46.57	49.79	54.68
Standard deviation	11.75	13.66	11.74	7.94
<b>Listening</b>				
Mean	19.87	20.60	21.05	23.17
Standard deviation	5.47	6.54	5.34	6.32
<b>Instrumental</b>				
Mean	28.22	26.19	25.48	28.69
Standard deviation	9.30	7.84	7.57	6.78

The norms of seventh and eighth grade students in School A were compared with those of seventh and eighth grade students in School B. Variances were compared by means of an F ratio. The "t" test was used to compute the significance of the difference between means. The results of this procedure are recorded in Table III. It will be noted that the differences between means were significant in all scales except the listening scale. School A norms were higher in all three instances.

A similar comparison was made between norms of the ninth grade chorus in School A and the seventh and eighth grades of the same school. Results are recorded in Table IV. The only significant difference between these groups was in the instrumental scale. The seventh and eighth grades were higher in this area.

The final comparison was made between norms of the ninth grade chorus of School B and the seventh and eighth grades of the same school. This comparison is tabulated in Table V. These groups showed the widest differences between means. The ninth chorus was significantly higher on all scales.

TABLE III

COMPARISON OF NORMS FOR SEVENTH AND EIGHTH GRADES OF  
SCHOOL A AND SEVENTH AND EIGHTH GRADES OF SCHOOL B

Norms	G	S	L	I
School A Standard Deviation	17.39	11.75	5.47	9.30
School B Standard Deviation	19.59	13.66	6.54	7.84
F Score	1.27	1.35	1.42*	1.39
School A Mean	66.38	49.05	19.87	28.22
School B Mean	61.55	46.57	20.60	26.19
t Score	2.76*	2.05*	1.30	2.47*

\*Significant at or beyond the 5% level

TABLE IV

COMPARISON OF NORMS FOR SEVENTH AND EIGHTH GRADES  
OF SCHOOL A AND NINTH GRADE CHORUS OF SCHOOL A

Norms	G	S	L	I
School A, 7 & 8 Standard Deviation	17.39	11.75	5.47	9.30
School A, 9 Chorus Standard Deviation	17.88	11.74	5.34	7.57
F Score	1.06	.99	1.04	1.49
School A, 7 & 8 Mean	66.38	49.05	19.87	28.22
School A, 9 Chorus Mean	69.75	49.79	21.05	25.48
t Score	1.32	.44	1.55	2.38*

\*Significant at or beyond the 5% level

TABLE V

COMPARISON OF NORMS FOR SEVENTH AND EIGHTH GRADES  
OF SCHOOL B AND NINTH GRADE CHORUS OF SCHOOL B

Norms	G	S	L	I
School B, 7 & 8 Standard Deviation	19.59	13.66	6.54	7.84
School B, 9 Chorus Standard Deviation	12.49	7.94	6.32	6.78
F Score	2.43*	2.96*	1.06	1.33
School B, 7 & 8 Mean	61.55	46.57	20.60	26.19
School B, 9 Chorus Mean	73.34	54.68	23.17	28.69
t Score	5.92*	4.66*	2.99*	2.58*

\*Significant at or beyond the 5% level

### Discussion of Findings

The correlation coefficients represented in Table I, page 41 were thought to be rather high throughout. The fact that 224 subjects were involved in the correlation seemed to make their size more impressive. With two variables and 200 degrees of freedom, a coefficient need be only .138 to be significant.<sup>1</sup> The high correlations seemed to indicate the possibility that a general attitude toward music was being measured. Guilford terms this "common factor variance" and relates it to validity.<sup>2</sup>

The pattern of intercorrelations as revealed in Table I, page 41 indicated that the instrumental scale correlated more highly with the singing scale than with the other two scales. This suggested the possibility of a common element being measured in these scales which might be called attitude toward performance.

Since the singing scale correlated highly with the general scale and well with the other two scales, it might be used alone in a general music class as a measure of attitude. However, examination of the "t" scores shown in Table III, page 44 and Table V, page 46 indicated that

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<sup>1</sup>J. P. Guilford, Psychometric Methods (second edition; Boston: McGraw-Hill Book Company, Inc., 1954), p. 563.

<sup>2</sup>Ibid., p. 398.

the most significant differences between groups occurred in the general scale. This might be a reason for choosing the general scale to represent the whole battery.

The fact that comparison of norms resulted in differences between schools seemed to make establishment of local norms more desirable than inter-school norms. The use of the scales to measure attitude change or to compare classes would also justify local norms.

It should be recalled from Chapter Three that items in the scale were taken directly from junior high school students statements of how they felt about music. These statements were judged by music teachers and tested for ambiguity and discrimination before they were included in the scale.<sup>3</sup> It seemed possible that these procedures could be considered contributions to the validity of the scale.

Before discussing the implications for further study contained in the comparisons of norms, it was advisable to mention briefly some important differences in the music teaching situations in School A and School B. School A, a small junior high school, was served by a traveling instrumental teacher. All children in the seventh and eighth grades took general music. Those who played

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<sup>3</sup>Cf. ante, p. 28ff.

instruments were also able to play in the instrumental groups. School B had a resident instrumental teacher. Children in the seventh and eighth grades went either to general music class or to instrumental class, they did not take both.

School B was a new school this year. The ninth grade chorus was involved in many dramatic performances incident to the opening of a new school. They sang for the first P.T.A. meeting, the first all school program, the dedication of the new building, the first school variety review. All of these events were highly successful. As a result of this schedule, the chorus concentrated on singing to the exclusion of other musical activities. The teachers had to eliminate from the chorus those children who could not, or would not keep up with the group.

Because of scheduling difficulties, the seventh and eighth grades of School B had no opportunities to perform outside of their classroom. They followed a general music program which included listening to records and keeping notebooks as well as singing.

As mentioned in the introduction of this thesis children in School A were also given several opportunities to perform. These were not concentrated in any one group. A group of seventh grade boys gave a demonstration for Open House. A group of seventh grade girls sang for the



Christmas program. A special choir composed of the best singers from the eighth and ninth grades also sang for the Christmas program. This group was so successful it appeared several times later. Every child appeared in the Spring Music Festival.

The ninth grade chorus of School A also contained some children who could not keep up with the group. They were allowed to remain in the group all year.

The pattern of significant means revealed by Table III, page 44; Table IV, page 45 and Table V, page 46 was most interesting when viewed in light of teaching differences between the schools. Comparison of seventh and eighth grade groups showed that School A students recorded higher mean scores on both the general and singing attitude scales. It could be guessed that these children achieved a greater feeling of success and pleasure from their music experiences because they had equal chances to perform. School A children also registered a higher mean score on the instrumental scale. This could possibly reflect the presence of instrumentally oriented children in the School A general music classes while the same children in School B were in instrumental classes and thus did not respond to the scale.

The ninth grade chorus of School A showed no significant differences in means on the first three scales

when compared with the seventh and eighth grade groups in the same school. This might be a reflection of the fact that the chorus experiences had been essentially the same as the general music class experiences. The chorus might well have been called a general music class for no effort had been made to insure homogeneity. Since their attitude was at least as high as the attitude of the lower grades, it might be considered an argument for the inclusion of a ninth grade general music class in junior high schools in addition to a chorus.

The ninth grade chorus of School B showed unusually high significant differences in means when compared with the seventh and eighth grades of School B. The singing and general scores were especially noticeable. This again might be a result of the feeling of success they achieved as a result of their experiences. The dramatic quality of the success might also have played a part. The fact that they were generally higher in all four scales, might be a reflection of their homogeneity. Their standard deviation scores on the first two scales were also significantly smaller than the seventh and eighth grade group, another possible indication of homogeneity.

It was interesting to note that the chorus of School B, when compared with the seventh and eighth grades of School B, recorded the only significantly higher mean

attained by any group on this scale. Yet they received no formal listening experience in school during the year.

In conclusion, it might be noted that the results of the administration of this scale when interpreted in the light of teaching differences within the two schools seemed to contain many possibilities for further investigation.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### I. SUMMARY

An experience teaching music in a junior high school resulted in the desire to measure students' attitude toward music. Because no suitable measuring instrument was found, it was decided to construct a music attitude scale. After investigating children's feelings about music, the scale was formulated by consulting authorities in attitude test construction. Because there appeared to be a possibility that attitude toward music was multidimensional, the scale was divided into four parts: general, singing, listening and playing instruments.

The scales were administered to seventh and eighth grade students in two Omaha junior high schools. They were also given to the ninth grade choruses in the same schools. After scoring, results of one seventh and eighth grade group were intercorrelated to determine the relationship between the scales.

Norms were also computed for each group. Variances were compared between groups within the schools and also between the seventh and eighth grade groups of the two schools. The same comparisons were made between the means.

A "t" test was made to determine significant differences in the means. Significant differences were found between the two groups in each school and between the groups in the two schools.

## II. CONCLUSIONS

After the findings of the study had been recorded and analyzed the following conclusions were made regarding the scale constructed in this study:

1. The intercorrelations between scales indicated a possibility that a general attitude toward music was being measured.

2. The pattern of intercorrelation of scales also suggested a possibility that the singing and instrumental scales measured a slight degree of a common element which might be called attitude toward performance.

3. The method of choosing items for the scale, the method of judging the items, and the method of constructing the scale might contribute a certain amount of validity to the scale.

4. Comparison of norms between groups in two schools and between two groups in each school revealed significant differences.

5. Because of the differences observed between schools, it was not thought practical to establish common

norms. It also seemed desirable to establish local school norms, because the scale was intended for local use.

### Suggestions for Further Study

The progress of this study presented many other insights relating to music teaching practices and attitude change. These areas should be investigated in further research.

1. Comparison of significant differences indicated that singing experience coupled with group performance opportunities was an effective way of developing a good attitude toward music. Since some music education theory tends to discount this approach, further investigations should be made.

2. The preliminary analysis of children's expressed feelings about music indicated that a great deal of listening to music occurred in the home. Comparison of norms on the listening scale revealed only one significant difference in this area. This difference could not be related to listening experience in school but seemed to stem from a generally good attitude toward music engendered by pleasant performance experiences. These facts appeared to contain a strong suggestion that cultural influences in the home are more likely to influence attitude in this area than school influences. This was thought worthy of more

study.

3. Since the instrumentally oriented children in the seventh and eighth grades of School A responded well to the singing scale, there appeared to be a possibility that exclusion of these children from a singing program would be contrary to their best interests. Further study in this area should be made.

4. Comparisons of teaching practices in relation to the ninth grade choruses implied that a ninth grade general music class would be a desirable addition to the Omaha junior high music program. This should also receive more investigation.

5. The psychological theories regarding attitude change appeared to be applicable to creating a better attitude toward music. Further research in this field might result in the reappraisal of some music teaching practices.

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**APPENDIX A**

## A MUSIC ATTITUDE SCALE

Items used in the attitude scale with (S) the original scale value (D) the index of dispersion (C) the index of consistency.

## General Scale

1. Music gives me pep and makes me happy. S 4.8, D .4, C 1.40.
2. Music is boring and a waste of time. S 1.0, D .0, C 1.24.
3. I do not think it is necessary to learn to read music. S 1.9, D .7, C 1.24.
4. Music makes me forget my troubles. S 4.5, D .67, C 1.32.
5. The only time I enjoy records is at a dancing party. S 1.9, D .53, C 1.36.
6. It makes me proud to take part in a music program. S 4.8, D .4, C 1.36.
7. I do not like to study foreign music. S 1.8, D .74, C 1.76.
8. I think music is the most beautiful thing in the world. S 4.9, D .3, C 1.80.
9. I like musical shows in the movies. S 4.1, D .7, C 1.40.
10. I do not like old-fashioned music. S 1.8, D .6, C 1.80.
11. I think music is fun. S 4.7, D .45, C 1.56.
12. It is interesting to learn more about notes, flats, sharps, measures and time. S 4.0, D .63, C 1.6.
13. I feel that music is something I need in my everyday life. S 4.6, D .66, C 1.60.

14. I have always loved music from the time I was in Kindergarten. S 4.9, D .3, C 1.84.

15. My musical experiences in school have been helpful to me and I enjoy them. S 4.6, D .49 C 1.88.

16. It is a waste of time to study composers and learn about the music they have written. S 1.5, D .67, C 1.64.

17. I like music best of all my subjects. S 4.8, D .4, C 2.12.

18. I guess music is alright but I don't like it as well as I do some of my other classes. S 2.3, D .78, C 2.16.

19. Music in school is important to me. S 4.8, D .4, C 2.16.

20. I don't dislike music but I don't have a real liking for it either. S 2.4, D .66, C 2.60.

21. I do not like to learn note patterns and difficult terms. S 1.9, D .53, C 1.68.

22. My experience in school music makes me feel more interested in the music world. S 4.5, D .5, C 1.68.

23. I don't like to be in musical programs. S 1.7, D .78, C 1.72.

24. I like music if there is not too much of it. S 2.2, D .6, C 1.76.

25. I feel that music is not necessary as a regular school subject. S 1.6, D .66, C 1.96.

#### Singing Scale

1. I enjoy singing in large groups and hearing the harmony that comes out. S 4.7, D .45, C 1.56.

2. I'm always nervous and self-conscious when I sing at school because I think I sound awful. S 2.1, D .53, C 1.60.

3. Singing in a group makes me feel more like part of the group. S 4.8, D .4, C 1.60.

4. I don't think part singing is as much fun as singing in unison. S 2.2, D .6, C 1.64.
5. I don't like to sing but I like to dance to music. S 1.6, D .66, C 1.68.
6. It makes you feel good to sing. S 4.8, D .5, C 1.68.
7. I liked music in the lower grades, but in the upper grades I have to sing a harmony part and I don't like it. S 1.6, D .64, C 1.72.
8. I can't sing so I just keep quiet. S 1.5, D .67, C 1.28.
9. I do not like to sing by myself. S 1.8, D .4, C 1.32.
10. I would like to learn how to be a better singer. S 4.4, D .48, C 1.32.
11. I used to sing in the church choir but I lost interest and quit. S 1.5, D .67, C 1.4.
12. I dislike vocal music. S 1.0, D .0, C 1.44.
13. It is a real joy to be able to sing in the church choir. S 4.9, D .3, C 1.56.
14. It is fun to sing alone. S 4.8, D .4, C 1.72.
15. I enjoy singing in parts a lot. S 4.8, D .4, C 1.88.
16. It is useless to try to sing when you know you can't. S 1.1, D .03, C 1.96.
17. I don't see any reason for being asked to sing alone. S 1.7, D .33, C 2.00.
18. My friends and I sing songs learned in music class when we walk home from school. S 4.8, D .4, C 2.28.

## Listening Scale

1. I like to listen to musical programs on TV.  
S 4.3, D .64, C 1.88.
2. I do not like to hear records of big orchestras.  
S 1.4, D .60, C 1.84.
3. I like to listen to classical music. S 4.5,  
D .5, C 1.72.
4. "Rock and Roll" is the only kind of music I  
like to listen to. S 2.0, D .70, C 1.72.
5. I do not like to go to symphony concerts.  
S 1.5, D .5, C 1.56.
6. I like to listen to semi-classical music.  
S 4.0, D .77, C 1.56.
7. I like to listen to ballads. S 4.0, D .77,  
C 1.44.
8. I do not like to hear choruses sing. S 1.4,  
D .6, C 1.32.

## Instrumental Scale

1. I enjoyed playing the song flute. S 4.5, D .5,  
C 2.00.
2. I like to play in a band or orchestra. S 4.7,  
D .45, C 1.88.
3. Playing an instrument has helped me to read  
notes, flats, and sharps. S 4.5, D .5, C 1.88.
4. In school I play an instrument and I enjoy it  
very much. S 5.0, D .0, C 1.72.
5. It is fun to play tambourines, castanets, claves  
when the class sings. S 4.6, D .49, C 1.72.
6. I take piano lessons and I like it very much.  
S 4.9, D .03, C 1.52.



7. My folks make me take lessons on an instrument but I don't like it. S 1.1, D .03, C 1.48.

8. My folks would like me to play an instrument but I won't do it. S 1.0, D .0, C 1.48.

9. I used to play an instrument but I didn't like to practice. S 1.6, D .48, C 1.44.

10. I do not like to play the song bells. S 1.5, D .5, C 1.40.

11. I like to play in recitals. S 4.6, D .49, C 1.34.

12. I started to take lessons on an instrument but it was too hard and I quit. S 1.4, D .48, C 1.24.

**APPENDIX B**

TABLE VI

SCALE SCORES OF THE SEVENTH AND EIGHTH  
GRADE STUDENTS OF SCHOOL A

Subject	G	S	L	I	Subject	G	S	L	I
1	48	20	16	4	41	65	43	20	22
2	43	35	14	6	42	79	47	20	22
3	26	41	18	9	43	59	45	20	22
4	22	23	22	10	44	29	32	1	22
5	37	25	19	13	45	84	70	31	23
6	15	36	12	13	46	52	45	17	23
7	39	31	8	13	47	64	43	24	23
8	82	54	29	13	48	58	45	13	23
9	71	40	22	14	49	48	27	12	23
10	48	46	22	16	50	57	22	7	23
11	60	26	15	16	51	59	39	17	24
12	66	44	15	16	52	61	34	16	24
13	55	42	14	16	53	59	49	20	24
14	41	46	9	16	54	87	64	25	24
15	58	46	10	17	55	78	60	24	24
16	68	52	10	17	56	48	35	16	24
17	59	34	10	18	57	69	45	16	24
18	63	50	20	19	58	80	43	18	24
19	94	59	25	19	59	61	49	18	24
20	48	54	17	19	60	57	32	20	24
21	44	28	22	20	61	82	50	22	24
22	54	47	21	20	62	93	59	23	24
23	51	36	17	20	63	82	70	24	24
24	69	57	24	20	64	74	52	22	24
25	65	41	16	20	65	29	38	26	24
26	53	43	17	21	66	49	38	21	24
27	74	53	20	21	67	59	37	20	24
28	69	56	16	21	68	67	62	20	24
29	40	19	15	21	69	73	53	18	24
30	54	32	15	21	70	65	54	16	24
31	67	50	15	21	71	63	54	19	24
32	35	36	11	21	72	63	31	14	24
33	25	31	16	22	73	44	33	14	24
34	69	55	16	22	74	26	18	14	24
35	55	41	15	22	75	63	51	14	24
36	62	49	14	22	76	49	35	12	24
37	48	37	11	22	77	78	39	12	24
38	59	30	10	22	78	54	44	9	24
39	63	38	21	22	79	42	36	17	25
40	30	31	20	22	80	76	57	25	25

TABLE VI (continued)

Subject	G	S	L	I	Subject	G	S	L	I
81	74	62	20	25	121	65	57	21	28
82	86	59	23	25	122	57	61	21	28
83	78	58	22	25	123	53	55	18	28
84	35	30	10	25	124	57	47	25	28
85	67	61	19	25	125	97	72	24	28
86	22	30	19	25	126	92	51	28	28
87	57	55	10	25	127	51	46	15	28
88	21	42	21	26	128	53	35	17	29
89	48	41	18	26	129	44	45	13	29
90	57	41	17	26	130	76	52	12	29
91	64	46	17	26	131	56	55	22	29
92	59	57	17	26	132	71	54	21	29
93	71	47	21	26	133	52	35	22	29
94	97	57	27	26	134	36	32	23	29
95	74	53	22	26	135	73	51	24	29
96	73	51	26	26	136	56	47	25	29
97	76	44	16	26	137	60	44	26	29
98	31	47	14	26	138	74	56	30	29
99	62	50	19	26	139	46	40	10	30
100	53	36	13	26	140	58	38	14	30
101	46	43	13	26	141	58	46	15	30
102	72	58	16	27	142	61	43	19	30
103	87	43	25	27	143	69	52	20	30
104	92	64	26	27	144	62	44	22	30
105	65	53	21	27	145	65	44	22	30
106	55	59	25	27	146	71	51	23	30
107	62	43	15	27	147	90	65	27	30
108	78	48	15	27	148	82	54	28	30
109	51	34	13	27	149	63	53	19	31
110	71	38	13	27	150	71	52	18	31
111	48	39	8	27	151	70	50	18	31
112	73	62	17	28	152	85	53	17	31
113	72	52	17	28	153	60	46	18	31
114	79	53	19	28	154	82	64	20	31
115	96	59	19	28	155	82	54	21	31
116	66	53	16	28	156	84	58	26	31
117	62	49	18	28	157	76	54	26	31
118	94	61	24	28	158	85	47	29	31
119	84	55	22	28	159	76	51	30	31
120	86	60	32	28	160	84	58	17	32

TABLE VI (continued)

Subject	G	S	L	I	Subject	G	S	L	I
161	66	42	20	32	193	79	56	18	38
162	73	61	28	32	194	71	56	18	38
163	78	63	23	32	195	91	65	27	38
164	72	41	19	32	196	73	62	20	39
165	79	44	25	32	197	78	54	22	39
166	58	33	23	32	198	82	66	27	39
167	89	57	25	32	199	87	62	28	40
168	95	71	26	32	200	81	56	26	40
169	58	48	25	32	201	78	55	17	40
170	73	46	14	33	202	79	64	19	40
171	82	66	20	33	203	75	32	22	40
172	65	62	22	33	204	95	58	25	40
173	95	66	26	33	205	80	66	23	40
174	58	32	26	33	206	95	69	31	40
175	59	51	17	33	207	86	70	21	41
176	70	51	20	33	208	89	66	30	41
177	46	33	18	34	209	82	60	28	41
178	70	44	20	34	210	91	61	26	41
179	72	54	15	35	211	97	68	32	41
180	89	70	27	35	212	69	54	23	42
181	50	37	21	35	213	88	65	31	42
182	82	59	29	35	214	88	67	38	42
183	68	47	15	36	215	71	49	24	42
184	67	51	19	36	216	86	62	24	42
185	78	60	24	36	217	88	65	28	42
186	78	51	24	36	218	88	65	25	43
187	94	69	29	36	219	61	63	19	44
188	51	44	22	37	220	91	54	25	44
189	86	69	23	38	221	83	56	14	44
190	58	40	24	38	222	84	50	26	44
191	73	61	21	38	223	69	56	22	46
192	41	30	20	38	224	90	70	27	48

TABLE VII  
SCALE SCORES OF THE SEVENTH AND EIGHTH  
GRADE STUDENTS OF SCHOOL B

Subject	G	S	L	I	Subject	G	S	L	I
1	83	40	23	4	41	39	29	13	20
2	29	21	21	6	42	60	32	12	20
3	7	14	4	8	43	29	31	9	20
4	53	54	22	8	44	17	13	9	20
5	76	54	30	9	45	35	34	4	20
6	22	17	11	9	46	67	68	29	21
7	37	28	6	11	47	42	44	28	21
8	45	29	15	11	48	62	52	26	21
9	70	59	23	12	49	65	44	23	21
10	34	45	12	13	50	66	44	21	21
11	58	39	17	14	51	75	55	21	21
12	24	22	15	14	52	51	29	20	21
13	59	42	20	15	53	38	33	18	21
14	30	19	12	15	54	56	48	16	21
15	32	42	12	16	55	50	31	16	21
16	46	41	20	16	56	41	26	14	21
17	45	26	17	16	57	51	35	13	21
18	49	40	17	16	58	49	45	11	21
19	27	32	10	16	59	92	71	32	22
20	93	69	28	17	60	55	57	23	22
21	44	35	23	17	61	61	43	19	22
22	44	41	12	17	62	48	36	19	22
23	68	62	25	18	63	56	51	16	22
24	55	33	21	18	64	41	50	15	22
25	50	60	22	18	65	15	12	11	22
26	83	54	22	18	66	60	32	10	22
27	69	45	20	18	67	61	43	32	23
28	58	36	15	18	68	43	22	28	23
29	10	16	3	18	69	52	54	26	23
30	68	33	23	19	70	56	42	23	23
31	28	21	15	19	71	55	58	20	23
32	48	35	12	19	72	61	39	17	23
33	56	36	12	19	73	76	43	16	23
34	58	51	30	20	74	27	13	10	23
35	71	54	22	20	75	63	48	27	24
36	55	43	21	20	76	62	35	25	24
37	42	49	20	20	77	70	37	25	24
38	48	43	17	20	78	57	56	23	24
39	51	31	15	20	79	46	41	22	24
40	46	43	15	20	80	69	45	22	24

TABLE VII (continued)

Subject	G	S	L	I	Subject	G	S	L	I
81	53	31	22	24	121	69	55	19	26
82	29	22	18	24	122	68	38	17	26
83	34	32	18	24	123	58	48	15	26
84	68	46	18	24	124	52	29	12	26
85	52	50	18	24	125	58	60	8	26
86	56	34	17	24	126	84	58	30	27
87	56	37	17	24	127	71	52	27	27
88	31	28	16	24	128	74	56	23	27
89	58	44	15	24	129	67	51	21	27
90	56	39	13	24	130	64	56	21	27
91	41	34	9	24	131	43	45	19	27
92	13	19	7	24	132	66	49	19	27
93	56	37	31	25	133	62	40	16	27
94	81	60	30	25	134	62	50	16	27
95	45	32	28	25	135	32	35	14	27
96	68	52	28	25	136	28	23	13	27
97	54	54	28	25	137	64	50	30	28
98	76	62	24	25	138	79	60	30	28
99	64	45	23	25	139	73	63	29	28
100	48	33	22	25	140	54	56	28	28
101	52	38	21	25	141	80	61	27	28
102	79	63	21	25	142	82	62	24	28
103	68	46	20	25	143	87	74	24	28
104	68	56	20	25	144	73	44	22	28
105	50	36	18	25	145	83	64	20	28
106	40	29	11	25	146	68	51	20	28
107	51	30	10	25	147	65	35	17	28
108	73	58	31	26	148	45	59	17	28
109	78	55	29	26	149	47	60	11	28
110	79	61	29	26	150	82	41	25	29
111	64	62	27	26	151	70	62	22	29
112	79	55	26	26	152	37	54	18	29
113	73	64	25	26	153	48	46	11	29
114	79	57	24	26	154	28	32	9	29
115	72	39	23	26	155	65	43	11	30
116	66	45	22	26	156	57	41	17	30
117	76	57	22	26	157	54	27	20	30
118	56	53	20	26	158	81	60	20	30
119	46	39	19	26	159	70	57	21	30
120	83	55	19	26	160	80	64	23	30

TABLE VII (continued)

Subject	G	S	L	I	Subject	G	S	L	I
161	90	63	26	30	192	71	63	31	36
162	78	57	27	30	193	79	48	24	37
163	84	62	30	30	194	81	58	25	37
164	68	55	14	31	195	98	53	32	37
165	60	44	17	31	196	95	75	32	37
166	67	44	24	31	197	81	49	24	38
167	72	62	25	31	198	71	52	26	38
168	94	72	28	31	199	64	53	26	39
169	83	54	29	31	200	66	56	23	39
170	62	58	12	32	201	89	54	27	39
171	56	40	13	32	202	87	56	29	39
172	49	52	14	32	203	89	48	20	40
173	45	25	19	32	204	88	62	28	40
174	55	38	22	32	205	86	61	29	40
175	84	49	24	32	206	91	71	30	40
176	90	60	31	32	207	94	64	32	40
177	88	59	32	32	208	56	45	13	41
178	89	66	24	33	209	82	44	15	41
179	96	62	25	33	210	78	54	20	41
180	66	63	27	33	211	78	54	21	42
181	41	28	13	34	212	98	71	32	42
182	73	63	27	34	213	68	49	27	43
183	63	49	32	34	214	93	65	30	43
184	59	45	21	35	215	92	59	31	43
185	77	68	23	35	216	90	62	25	45
186	85	57	23	35	217	88	64	23	45
187	73	61	25	35	218	99	62	31	45
188	88	57	26	35	219	87	55	27	46
189	63	49	18	36	220	91	60	30	47
190	59	54	20	36	221	82	64	22	48
191	72	61	27	36					



TABLE VIII  
SCALE SCORES OF SCHOOL A NINTH GRADE CHORUS

Subject	G	S	L	I	Subject	G	S	L	I
1	68	69	25	12	33	80	51	21	25
2	45	25	11	12	34	44	25	24	25
3	38	29	4	14	35	55	38	16	26
4	81	25	11	14	36	82	57	19	26
5	71	55	17	14	37	79	63	20	26
6	47	36	18	14	38	83	57	24	26
7	47	31	8	16	39	73	52	26	26
8	40	47	15	16	40	74	55	30	26
9	42	43	24	16	41	68	48	20	27
10	62	52	15	18	42	88	67	30	27
11	16	12	3	19	43	83	54	26	28
12	44	54	9	20	44	87	64	22	28
13	55	39	12	20	45	72	46	24	28
14	88	50	30	20	46	79	54	20	29
15	56	37	16	20	47	74	61	22	29
16	91	60	29	20	48	72	44	15	30
17	83	66	32	20	49	61	41	18	30
18	67	39	19	22	50	77	52	18	30
19	80	50	22	22	51	67	67	22	30
20	78	57	23	22	52	54	47	20	31
21	72	47	27	22	53	77	42	22	32
22	74	58	22	23	54	91	50	19	33
23	83	56	23	23	55	73	58	23	33
24	44	37	10	24	56	75	54	26	33
25	73	51	20	24	57	73	58	28	35
26	70	51	22	24	58	55	64	29	39
27	41	46	24	24	59	86	51	20	40
28	74	37	25	24	60	83	67	25	40
29	74	46	25	24	61	92	60	28	42
30	88	59	25	24	62	99	58	28	44
31	76	55	27	24	63	85	55	20	46
32	85	58	28	24					

TABLE IX  
SCALE SCORES OF SCHOOL B NINTH GRADE CHORUS

Subject	G	S	L	I	Subject	G	S	L	I
1	81	65	13	14	37	74	61	28	28
2	76	51	20	18	38	87	66	32	28
3	59	34	11	18	39	55	54	20	29
4	60	56	14	20	40	55	55	20	29
5	40	43	17	20	41	74	63	27	29
6	82	49	20	20	42	68	53	30	29
7	83	68	29	20	43	81	59	32	29
8	54	44	30	20	44	61	47	19	30
9	77	64	20	21	45	86	58	30	30
10	91	63	26	21	46	73	51	32	31
11	65	47	15	22	47	89	59	29	31
12	62	55	22	22	48	69	47	22	31
13	69	45	24	22	49	71	64	18	32
14	83	64	25	22	50	51	53	18	32
15	74	59	28	22	51	62	50	24	32
16	52	44	17	23	52	90	56	13	33
17	64	66	16	24	53	72	57	18	33
18	62	43	17	24	54	80	54	27	33
19	59	40	20	24	55	90	51	30	34
20	63	54	25	24	56	74	46	17	34
21	94	63	29	24	57	86	46	24	34
22	55	54	8	24	58	65	52	21	35
23	71	60	20	25	59	68	53	24	35
24	62	62	21	25	60	89	68	26	35
25	59	53	22	25	61	82	60	28	35
26	78	59	27	25	62	82	46	25	36
27	59	35	26	26	63	81	60	25	37
28	91	58	26	26	64	70	61	24	38
29	70	44	15	27	65	66	55	27	38
30	75	49	22	27	66	68	52	26	39
31	68	52	25	27	67	94	62	28	41
32	84	59	25	27	68	97	65	29	42
33	80	52	22	28	69	85	68	23	44
34	85	54	23	28	70	83	66	28	44
35	65	48	27	28	71	95	70	26	46
36	82	48	28	28					