AN IDENTIFICATION OF MUSICAL ABILITY, ACADEMIC ACHIEVEMENT AND ENVIRONMENTAL INFLUENCES OF CULTURALLY DISADVANTAGED THIRD-GRADE PUPILS

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN MUSIC EDUCATION IN THE GRADUATE SCHOOL OF THE TEXAS WOMAN'S UNIVERSITY

COLLEGE OF FINE ARTS

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We hereby recommend that the THESIS prepared under our supervision by BENNIE JEAN ADKINS entitled An Identification of Musical Ability, Academic Achievement and Environmental Influences of Culturally Disadvantaged Third-Grade Pupils

be accepted as fulfilling this part of the requirements for the Degree of MASTER OF ARTS

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CHAPTER I

THE PROBLEM

Statement of the Problem

It will be the purpose of this study to identify musical ability and academic achievement of Culturally Disadvantaged Third-Grade Pupils, and to show musical growth and development as a result of participation in an experimental study to develop Melodic Memory.

Justification of the Problem

The culturally disadvantaged often come from low-income, low-educated families with limited cultural experiences. Their aspirations are low, often because they receive the minimum of parental affection and attention. The children are not encouraged to excel and many parents show little or no concern for their children's interests, talents, and progress.

Title 1 of the Elementary-Secondary Education Act has made possible special programs, including music, to become a part of the curricula of many schools which ordinarily could not have or could not support such programs. Financial aid to schools located in poverty areas, with a large percentage of children from low-income homes, enabled school systems to provide enriching experiences for their pupils.

With such aid, provisions can be made for hiring of full-time music teachers and the purchasing of special music equipment and teaching aids. A long-range program in music under the Title 1 program may result in the upgrading of the cultural level as well as the educational level of the school and community.[1]

It is hoped that this study will provide the teacher with useful suggestions, based upon experience, that lead to the selection of specific activities appropriate for children of a particular age or level of achievement.

PROCEDURE

In this study, Bentley's Measures of Musical Abilities Test was used to identify musical ability.[2] The California Comprehensive Test of Basic Skills, Level III, Form S, Grade Placement score was recorded in order to establish the level of academic achievement.[3] A Questionnaire was constructed by the experimenter in an attempt to evaluate the effect of home musical environment on interest and ability. Form A of Drake's Musical Memory

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[1]Lawanna M. Thomas, "Music for the Disadvantaged," Music Educator's Journal, LVI (January, 1970), 28.

[2]Arnold Bentley, Measures of Musical Abilities Tests George G. Harrap and Company. L.T.D. London.

[3]Willis W. Clark and Ernest W. Tiegs, California Test of Basic Skills, McGraw-Hill DelMonte Research Park, Monterey, California.

Test was given at the beginning of a four week experimental study, developed by the experimenter, to determine the current musical ability of the children.[1] Form B of Drake's Melodic Memory Test was given as a post test to determine musical growth and development. Conclusions drawn from information gained from the comparative data and the Questionnaire were reviewed and summarized.

DESCRIPTION OF THE EXPERIMENTAL COURSE OF STUDY

The four-week experimental study to develop Melodic Memory for selected third grade culturally disadvantaged children, presented materials from familiar songs which emphasized repeated tones, ascending and descending melodic movement, change of key and change in rhythm.

To develop the concept that tones in a melody repeat or change, the children had an opportunity to:

Draw a line through either S or D

Sing or play repeated tones on melodic instruments

To develop the concept that tones in a melody move up or down, the children had an opportunity to:

Identify high and low tones by raising and lowering the hand

Draw a line through either U or D to indicate whether a succession of melodic tones moved up or down

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[1]Raleigh M. Drake, Drake Musical Aptitude Tests, Science Research Associates, Inc., Chicago, Illinois.

To develop the concept that a melody may be repeated with a change of key, the children had an opportunity to:

Identify the melodies as same or different

Determine the melodic direction of a repeated melody as higher or lower

To develop the concept that the character of a melodic pattern changes when the rhythm is changed, the children had an opportunity to:

Identify repeated rhythmic patterns in familiar songs

Identify changing rhythms in familiar songs

ORGANIZATION OF THE THESIS

Chapter I of this study consists of the introduction, statement of the problem, limitations and procedures.

Chapter II will present selected studies of environmental factors in musical ability.

Chapter III will include a description of the pre- and post-test, and selected materials and methods for presenting effective melodic memory activities and experiences.

Chapter IV will contain conclusions from the information gained from the Questionnaire and test scores.

Chapter V will include a summary and conclusions from the experimental data.

CHAPTER II

ENVIRONMENTAL FACTORS AND MUSICAL ABILITY

A review of research related to the education of socially disadvantaged children reveals that the home environment has received considerable attention from investigations concerned with the identification or confirmation of those behaviors or circumstances which are assumed to set these children apart from their more privileged peers. These investigations have focused on home environment and family status, on language, cognition and intelligence, on perceptual styles and patterns of intellectual function, and on motivation and aspirations.

Keller (1963) describes the lower class Negro homes in her study, as more crowded than homes of similar white families. She found that one out of every six breadwinners was currently unemployed, and she reported that only half of the children in this study regularly ate a meal with their parents. Fifty percent of the Negro parents and all the white parents of a similar socio-economic status were satisfied with their children's progress in school.[1]

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[1] Suzanne Keller, "The Social World of the Urban Slum Child: Some Early Findings," American Journal of Orthopsychiatry, XXXIII (October, 1963), 823-831.

Reissman (1963) pointed out the crowded conditions in lower class homes but stressed also the more positive aspects of such environments. These included cooperativeness and mutual aid of extended families; lack of strain accompanying competition, individualism, and equalitarianism; lessened sibling rivalry; and the security of a large family.[1]

MacDonald, McGuire, and Havighurst (1949) found systematic differences in leisure-time family activity according to social class, with the higher socioeconomic strata participating most frequently in family activity.[2]

Milner (1951) found the environment of lower class homes to be much less verbal than that of the upper class homes. Not only were there fewer books in lower class homes, but children from lower class homes were read to less frequently, and spoke less with their parents.[3]

Tanner and Tanner reviewed a comprehensive national study, the "The Plowden Report," conducted by England's Central Advisory Council of Education. They concluded that:

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[1]Frank Reissman, The Culturally Deprived Child (New York: Harper and Row, 1962), p. 27.

[2]Margherita MacDonald, Carson McGuire, and Robert J. Havighurst, "Leisure Activities and the Socioeconomic Status of Children," Americal Journal of Sociology, LIV (May, 1949), 505-519.

[3]Esther Milner, "A Study of the Relationship Between Reading Readiness in Grade One School Children and Patterns of Parent-Child Interaction," Child Development, XXII (June, 1951), 95-112.

> Economic level and social class are much less important than the aspects of parental attitude, attitude to education, and attitude to books and reading, as determinants to the achievement and educational progress of primary school children.

As pointed out by John Blackie, former Chief Inspector for Primary Education in England, this research suggests that increasing emphasis will have to be placed on the education of parents and perhaps a little less on the importance of socioeconomic classes.[1]

The Plowden Report notes that "literate homes with good parental attitude toward school are found in the slums as well as in the surburbs." American school administrators who have been forced to use level of income as an index of education deprivation in their school districts have been made uncomfortably aware of this fact. The cultural bent for schooling tends to be as high, if not higher, in these homes as in the homes of upper-income families who reside in other sections of the city, even in its surburbs.[2]

Gordon's Characteristics of Socially Disadvantaged Children, include several environmental studies describing the home experiences of disadvantaged children.

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[1]David Tanner and Laurel N. Tanner, "Parent Education and Cultural Inheritance," School and Society, XCIX (January, 1971), 21-24.

[2]Bridget Plowden, "Children and Their Primary Schools," A Report of the Control Advisory Council for Education, II 381-382.

> The home environment has received considerable attention from investigators concerned with identifying characteristics of the socially disadvantaged child. This environment has been described as noisy, disorganized, overcrowded, and austere. It has generally been seen as lacking many of the cultural artifacts often associated with the development of school readiness, such as books, art work, variety of toys, and self-instructional equippment. Adult models in the environment have been seen as being incongruous with the demands of the school or the broader community, and the parents of these children often have been reported as failing to support their children's academic pursuits.[1]

This environment has been described largely in negative terms, and little attention has been directed toward those aspects of the environment which have positive implications or which could be utilized to the educational advantage of these children. These environmental studies provide some insight into the home experiences of disadvantaged children, but few represent systematic long-term investigations conducted in naturalistic settings. The findings, nontheless, point to the importance of enviromental studies.

Benjamin Bloom presented evidence that indicates the intelligence level (potential) is well defined before a child enters school. He found a high correlation between scores earned by these same individuals as adults. His con-

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[1]Edmund W. Gordon, "Characteristics of Socially Disadvantaged Children," Review of Educational Research, XXXV(December, 1965), 377-385.

clusion that "the influence of pre-school training is of great importance to the development and ultimate level of intelligence is supported by such authorities as Bruner, Piaget and Montessori." This is also suggested in regard to musical aptitude.[1]

Shuter quotes Teaching Music in the Schools (Ministry of Education 1960).

> When a child comes to school he normally brings with him a considerable variety of musical experience. Much of this will doubtless have come from radio and television programmes ranging in suitability from such series as Listen with Mother, to material of a more sophisticated character preferred by the older members of the family.[2]

Wing states, that if the homes where parents of musical background are to be considered in connection with the effects of environment on children's performance in the tests, some account must be taken on the effect of heredity on musical capacity.[3]

Wing refers to his own work that involved a satisfactory series of tests.

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[1]Benjamin Bloom, Stability and Change in Human Characteristics (New York: John Wiley and Sons, 1964), p. 110.

[2]Rosamund Shuter, The Psychology of Musical Ability (London: Menthuen and Company, LTD, 1968), p. 142.

[3]Herbert Wing, Tests of Musical Ability and Appreciation (Cambridge: University Press, 1970), p. 80.

> It has been shown that reasonable opportunity to hear music at home, while affecting the interest, does not appear to affect the ability to do the tests, provided parental playing be excluded from the calculations. Parental playing, although only roughly equivalent to any other playing in the home in the awakening of interest, does seem to be linked with the child's performance in the tests. If one parent played, the child seemed to have a greater chance of being in the above-average group, while if both parents played, his chances were very much higher.[1]

Such evidence as is available in Wing's work, seems to point in the direction of the inheritance of musical capacity rather than inculcation of musical capacity by the more favorable environment.

Stanton investigated six family trees by actually assessing the musical capacity of their members. She used the Seashore Measures of Musical Talent with persons who were known to be good musicians. She concluded that musical ability is inherited. Stanton came to a similar conclusion as a result of working with eighty-five members of families in which at least one member was a professional musician. Their higher scores on the Seashore test, when compared to those of members of families that did not have talented relatives, gave rise to the supposition that innate potential is a more potent factor than environmental influence.[2]

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[1] Ibid., p. 82.

[2] Hazel Stanton, "The Inheritance of Specific Music Capacities," Psychological Monographs, XXXI (March, 1970), 157-162.

If this be true, it would by itself be sufficient to lead one to expect a close association between musical ability, however judged, and parental performance. The child of musical parents is then likely to have innate capacity, to grow up in an atmosphere of interest, and also have opportunities provided for his own development in the direction of his interests.

Gordon, in The Source of Musical Aptitude, summarizes the findings of some contemporary researchers on musical achievement characteristics. Through questionnaire and interview techniques on V. Haechet and T. Ziehen, Hans Koch and Fridjof Mjoen and Oswald Feis, Gordon made these conclusions: If both parents were talented, their children would very likely be talented; if only one parent was talented, their children would usually be talented; and if neither parent was talented, the children would be less talented than their parents.[1]

Gordon found that Musical Aptitude Profile scores of both fourth grade students and older students remained stable with musical training and practicing intervening.

Charles Harrington's data, to the contrary, supports the notion that on an adapted primary level version of this battery, scores of second and third grade students would be

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[1]Edwin Gordon, "The Source of Musical Aptitude," MusicEducators Journal, LVIII (April, 1971), 35-37.

comparatively unstable.[1]

These results may be attributed to the fact that the level of musical aptitude is influenced greatly by early exposure to music, but after the fourth grade, ultimate musical aptitude is well defined and impervious to practice and training.

Schienfeld investigated contemporary musicians for the first edition of the New Heredity and You. His virtuoso group included such outstanding performers as Yehudi Menuhin and Arthur Rubinstein.

> An analysis of the incidence of talent in the three groups, including opera singers, and students of music, showed that where parents had musical talent, more than 70 percent of the brothers and sisters also had talent. Where only one parent was talented, there was talent in 60 percent of the siblings. When neither parent was talented, only 15 percent of the brothers and sisters had talent.[2]

Shuter reviewed an interesting study by Winifred Graves, on parental attitudes of their children having music lessons. Graves compared two groups of children aged between nine and seventeen, differing only in that one group was taking music lessons. Of the twenty-five children of the

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[1] Charles Harrington, "An Investigation of the Primary Level Musical Aptitude Profile for Use with Second and Third Grade Students," Journal of Research in Music Education, XVII (Winter, 1969), 359-368.

[2] Anran Scheinfeld, The New Heredity and You (London: Chatto and Windus, 1956), pp. 63-67.

experimental group where data was collected from both parents, only three fathers had not received musical training. Seventeen of the fathers of the children in the control group had not received musical training. The parents whose children were learning to play musical instruments, estimated the children's joy in playing. Their estimation was much greater than the estimation made by the parents of the children in the control group.[1]

Wing refers to several scientific studies of family trees of persons known to be musical. These studies were carried out by the use of questionnaire, biographies, and musical history. Wing states:

> This method, too, cannot be regarded as entirely satisfactory, for musical capacity might occur in cases where both parents were unmusical and so lie unnoticed and undeveloped. Also, the persons considered were designated musical or unmusical, with no graded method of assessing musical ability; finally, the estimates of ability are based on reputation, and so are rather unreliable.[2]

An investigation into the literature on the persons known to be musical, shows that there is very little definite evidence on the matter. The popular assumption is that musical capacity is inherited. This is largely based on the fact that many of the best performers come from parents who are themselves musicians. This, of course does not explain

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[1] Shuter, op. cit., p. 144.

[2] Wing, op. cit., p. 80.

the whole position, for there may be highly musical parents whose children are not musical and are therefore forgotten.

To what extent any ability shown by an individual is innate, and to what extent it is acquired from the environment is difficult ot decide. Yet, the question is not a purely academic one. It underlies what Ralph Smith in Patterns of Meaning in Aesthetic Education, called the 'aristocratic' and the 'democratic' attitudes to music education.[1]

Even the democrat who believes that every child can profit from instruction in music has to admit that pupils vary markedly in motivation and capacity to learn.

> If musical aptitude is largely innate, ought the schools to spend too much time on the unmusical? So long as the supply of good music teachers remain inadequate, shouldn't their efforts be mainly directed toward discovering and fostering the talents of the gifted?[2]

Most earlier studies of the heritability of musical talent have been based on the family trees of musicians or on the assessment of musical ability from questionnaire data. These include the interesting inquiry by Scheinfeld into the incidence of musical talent among the relatives of profession-

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[1] Ralph Smith, "Patterns of Meaning in Aesthetic Education: With Special Reference to the Teaching of Music and Art at the Secondary Level (7-12)," Bulletin of the Council for Research in Music Education (Spring, 1965), 1-12.

[2] Rosamund Shuter, "Some Problems in Psychology of Musical Ability," Journal of Research in Music Education, XIII (Spring, 1965), 90-93.

al musicians and music students.

In several recent reports, Gordon, Holmstrom, and Rainbow have provided evidence that various environmental factors show a low, but in some cases significant, association with musical aptitude. Hereditary factors cannot be separated from environmental ones in these studies, since it is often the parents who are talented themselves, that provide the best musical environment for their children.[1]

It is known, however, that coaching can improve the tonality of most out-of-tune singers. To what extent such changes could lead to overall improvements in musical ability is not yet determined. Marked differences in ability exist among individuals even after long periods of similar training. How much less than maximum achievement is reached in an unstimulating environment is difficult to determine.[2]

The influence on musical ability of a child's home environment is almost literally 'incalculable.' Some estimate can, however, be made by comparing children from homes where both parents are performers and where good music is listened to frequently with those who come from homes where the only music to be heard is 'pop.' The child whose parents set an example of good listening is likely to value music.

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[1]Gordon, op. cit., p. 36.

[2]Lars Gunnar Holmstrom, "Intelligence vs. Progress in Music Education," Journal of Research in Music Education, XVI, No. 1, (1969), 77.

However, if the child's interest in music can be awakened at school or by private music lessons, the radio and the record-player can provide great opportunities for its development.

Kirkpatrick found a strong relationship between the singing ability of over 100 five-year old children and their home environment. Few non-singers came from homes classified as having an excellent or good musical home environment. None of the singers came from musically poor homes. A significant relationship existed between singing ability and environmental factors, such as: mothers who sang to and with their children, family singing and playing, and parents with a musical background.[1]

Holmstrom compared scores made on Wing's tests 1 to 3, by children from musically good homes with those from musically poor environments. The differences in scores remained statistically significant in favour of the children from the musical homes even when the effects of interest in music and intelligence had been removed by statistical procedures. In this study the 'good' home was characterized by having a radio and one or more musical instruments. At least one member of the family played an instrument daily, and listened frequently on the wireless. The musically 'poor' home did not have musical instruments, none of the members of the fam-

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[1]William C. Kirkpatrick, Jr., "Relationships Between the Singing Ability of Pre-Kindergarten Children and Their Home Musical Environment," XXIII (Dissertation Abstracts 613, No. 3-4, 1962-63), 886.

ily played an instrument, nor did they participate in vocal musical activities.[1]

In an attempt to evaluate the effect of home music on interest and ability of children, Wing reveals the results of an investigation:

> The children were asked to fill up a questionnaire, on the extent of their playing and training, what music they heard, and who were the players. A major objective of the questionnaire was an attempt to estimate the importance of the association between the child's ability as measured by his test score, and his opportunities to hear music at home.[2]

The results showed that a favorable environment is likely to generate an interest in music in the child. This appears to be reasonable when it is remembered that children are very imitative and tend to develop the interests of those in their immediate circle. In dealing with the problem further, Wing describes another survey that omitted those cases in which the music was played by the parents.

> The first analysis was therefore concerned with children who heard instrumental music played at home by persons other than the parents. The group of 333 boys was divided into three groups on their ability to perform tests, the above average (AB), the average (C), and the below average (DE). The percentages of each of the groups who had players, other than the parents in the household were calculated as thus: AB, 84 boys-

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[1]Holmstrom, op. cit., pp. 77-81.

[2]Wing, op. cit., p. 78.

28%; C, 139 boys-22%; DE, 110 boys-27%.[1]

These calculations showed no great differences in the three percentages. It may therefore be reasonably assumed that opportunities (of the limited kind here investigated) to hear music do not greatly affect the child's ability to perform the tests.

In the results of a recent study, which supports the role of heredity in musical aptitude, Scheinfeld indirectly suggested that innate qualities might not be the sole basis of musical aptitude. He states that the many exceptions to the rule, such as Toscanini, Rubenstein, and Schnabel, whose parents were found to be by definition, untalented, could be interpreted to fit the environmental theory. Further, the fact that the offspring of some talented parents were found to possess only little talent does not particularly favor either theory.[2]

Therefore, it is reasonable to assume that musical aptitude is a product of both innate potential and musical exposure.

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[1]Wing, op. cit., p. 80.

[2]Scheinfeld, op. cit., p. 72.

CHAPTER III

COURSE FOR THE DEVELOPMENT OF MELODIC MEMORY

In order to determine whether the pupil's musical ability could be associated in any way with their home musical environment, the parents were asked to respond to a Questionnaire, which was of simple detail. The extent of their playing and training, what music they listened to at home, the musical activities the family attended in the community, the instruments played by members of the family, were included in the items on the Questionnaire.

It was possible to make a score of 100 on the Questionnaire. The number of points per item is listed below:

Item	Points	Item	Points
1.	20	7.	10
2.	15	8.	10
3.	10	9.	4
4.	4	10.	12
5.	4	11.	5
6.	4	12.	2

Data was collected and tabulated. The findings, classified the home environment into three catagories. The Musically 'Good' Home, the Musically 'Average' Home, and the Musically 'Poor' Home.

A copy of this data is found in Table VII and Appendix A.

The Drake Musical Memory Test, developed by Raleigh M. Drake, is accompanied by a Microgroove Phonograph Record, with all practice exercises and test items for Form A and Form B.[1]

This test consists of original two bar melodies which were to be remembered and compared to possible changes with respect to time, key, or note.

The melodies were especially composed for the test, a "cultural-free" measure of memory for musical talent. Form A, was used as a pre-test and Form B was used as a post-test, at the end of a four-week experimental activity on melodic memory.

On each test the pupils were instructed to:

1. Listen to a series of melodies played on the piano.
2. Determine whether each melody was:
   exactly the same as the first
   a change of key
   a change of time
   a change of notes

There were twelve trials of entirely different melodies in each test. Each trial was announced by number.

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[1] Raleigh M. Drake, Drake Musical Aptitude Tests, (Chicago: Science Research Associates Inc., 1957).

A copy of this data is found in Appendix B.

The Bentley Measures of Musical Abilities Test,[1] developed by Arnold Bentley, was used as a basis for selecting the Upper-Third and Lower-Third groups. The four tests contained on the record consist of Pitch Discrimination, Tonal Memory, Chord Analysis, and Rhythmic Memory. The recorded instructions and presentation of the tests are such as will easily be understood by most seven-year old children. The tests are virtually self-administering and no musical performance is necessary in working them, the children merely have to listen to each item and to write down a single letter or number by way of answer. The tests are short and the whole operation can be completed within half an hour, although it is not essential that all four tests of the battery should be given at one session.

The tests have been standardized on large numbers of children in the age range of 7 to 14 years of age. A table of norms is given in the notes for the teacher, included with the record.

The pupils were instructed to write:

S for a tone sounding the same as the first tone

U for a tone moving up from the first tone

D for a tone moving down from the first tone

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[1]Arnold Bentley, Measures of Musical Abilities (London: George C. Harrap and Company, 1966).

The number of notes heard in each chord

The number of the beat that is changed in a melody

EXPERIMENTAL COURSE OF STUDY

The four-week experimental course of study to develop Melodic Memory for selected third-grade culturally disadvantaged children of C. F. Carr School in Dallas, Texas, presented materials from familiar songs emphasizing, Repeated Tones, Ascending and Descending Melodic Movement, Change of Key, and Change in Rhythm. The grouping of the Upper-Third and Lower-Third groups, were amde on the basis of the highest and lowest raw scores, on the Bentley Musical Abilities Test.

FIRST WEEK: REPEATED TONES

Concept to be taught:

Tones in a melody repeat or change.

Behavioral Objective:

When the teacher sings or plays two tones, or a melody of five tones, from a familiar song, the third-grade pupils should be able to identify the repeated tones.

Materials:

Text:

EXPLORING MUSIC Book 2

"Skip to My Lou" p. 10

"The Animal Fair" p. 16

Recordings:

EXPLORING MUSIC Book 2

Record 1 Side A Band 6

Record 1 Side B Band 2

Text:

THE MAGIC OF MUSIC Book 3

"We Thank Thee" p. 30

"America" p. 145

"Row, Row, Row Your Boat" p. 112

"American the Beautiful" p. 114

"In the Easter Parade" p. 110

"If You're Happy" p. 150

EXPLORING MUSIC Book 3

"Love Somebody" p. 116

GROWING WITH MUSIC Book 3

"How Many?" p. 20

Recording:

GROWING WITH MUSIC Book 3

Record 2 Side A

Instruments:

Resonator Bells

Flutophone

Class Activities:

Pupils should have an opportunity to:

Draw a line through either S or D to indicate whether a second tone is the same or different than the first tone.

Sing or play repeated tones on melodic instruments. Tell which note of the tune is repeated.

Select bells or use the voice to reproduce tones in familiar songs or melodies.

SECOND WEEK: ASCENDING AND DESCENDING TONES

Concept to be taught:

Tones in a melody may go up or down, moving by skips, by scale or by step.

Behavioral Objective:

After listening to the teacher sing or play a short familiar melody on melodic instruments totally in one direction, up or down, the third-grade general music student should be able to identify ascending and descending melodic movement.

Materials:

Text:

GROWING WITH MUSIC Book 3

"On St. Paul's Steeple" p. 89

"To London Town" p. 90

"The Bells" p. 88

"Are You Sleeping? p. 87

"Come, Little Leaves" p. 67

"Now the Day is Over" p. 65

"In Our Rocket" p. 67

"She'll Be Comin' Round the Mountain" p.120

Recording:

GROWING WITH MUSIC Book 3

Record 6 Side A

Record 5 Side A

Record 7 Side A

Text:

THE MAGIC OF MUSIC Book 3

"I Can Play and Sing" p. 22

THE MAGIC OF MUSIC Book 1

"In Autumn" p. 22

EXPLORING MUSIC Book 3

"For Health and Stength" p. 5

Recording:

EXPLORING MUSIC Book 3

Record 1 Side A Band 3

Text:

EXPLORING MUSIC Book 2

"Carrousel" p. 50

"Scotland's Burning" p. 38

Recordings:

EXPLORING MUSIC Book 2

Record 2 Side B Band 5

Record 2 Side A Band 6

Instruments:

Melody Bells

Rhythm Instruments

Class Activities:

Pupils should have an opportunity to:

Draw a line through U or D to indicate whether a succession of melodic tones are going up or down

Identify high and low tones by raising or lowering the hand and by use of bodily movements

Identify the high and low notes in familiar songs or melodies, through listening experiences by matching the voice with pitch producing instruments

Play melodic patterns on the instruments

Place cut-out figures of Jack and Jill, Jack, A Fireman (storybook characters)

in the appropriate position on the beanstalk, pole, hill and ladder, according to the movement of the melody

Suggest familiar songs and identify the phrases that are predominately ascending and predominately descending

THIRD WEEK: CHANGE OF KEY

Concept to be taught:

A melodic pattern may be repeated at a pitch higher or lower than its first appearance.

Behavioral Objective:

After listening to the teacher sing or play on a melodic instrument, a portion of a melody from a familiar song, at a pitch higher or lower than its first appearance, pupils should be able to identify the melodies as same or different and higher or lower.

Materials:

Text:

EXPLORING MUSIC Book 3

"Sandy Land" p. 32

"The Wise Old Owl" p. 134

"Jig Along Home" p. 158

"Oh, Dear! What Can The Matter Be" p. 112

Recordings:

EXPLORING MUSIC Book 3

Record 2 Side A Band 5

Record 6 Side A Band 1

Record 6 Side B Band 6

Text:

EXPLORING MUSIC Book 2

"Bluebird, Bluebird" p. 138

"Go Tell Aunt Rhodie" p. 105

Recordings:

EXPLORING MUSIC Book 2

Record 6 Side A Band 3

Record 5 Side A Band 2

Text:

GROWING WITH MUSIC Book 3

"I Can't Spell Hippopotamus" p. 132

Recording:

GROWING WITH MUSIC Book 3

Record 7 Side B

Text:

MAKING MUSIC YOUR OWN Book 3

"Marching to Pretoria" p. 12

"Bingo" p. 138

THE MAGIC OF MUSIC Book 3

"How Do You Do Today?" p. 6

Class Activities:

Pupils should have an opportunity to:

Determine the melodic direction of a melody repeated, with change of key

Identify the melodies as same or different

Experiment with change of key in a familiar melody by reproducing it at a pitch higher and lower

FOURTH WEEK: CHANGE IN RHYTHM

Concept to be taught:

The character of a melodic pattern changes when the rhythm is changed.

Behavioral Objective:

After listening to the teacher repeat on melodic instruments a line of a familiar tune with changes in the rhythm, pupils should be able to identify melodies as same or different.

Materials:

Text:

GROWING WITH MUSIC Book 3

"Tick Tock" p. 91

THE MAGIC OF MUSIC Book 3

"French Cradle Song" p. 28

"Susie, Little Susie"

EXPLORING MUSIC Book 2

"Here, Close to My Fair-One p. 72

Recording:

EXPLORING MUSIC Book 2

Record 3 Side B Band 3

Class Activities

Pupils should have the opportunity to:

Experiment with changing rhythms of a familiar melody to show that the character of a melody changes when the rhythm is changed

Identify repeated rhythmic patterns in familiar songs

Use melodic instruments to reproduce changing rhythms in familiar songs

CHAPTER IV

EXPERIMENTAL DATA

The results of the tabulation of scores from which the following conclusions were drawn, are shown in Table I.

The grouping of the Upper-Third group and the Lower-Third group was made on the basis of the highest and lowest raw scores on the Bentley Musical Abilities Test.

It was possible to make a score of 60 on the preceeding test. The experimenter found that the range of scores achieved by the Upper-Third group was wider than the range of scores achieved by the Lower-Third group, 18 to 41 and 2 to 12 respectively. Of the fifty-two pupils in the upper-group, fifty-two scored between the 18 to 41 score range, whereas no pupils in the lower-group scored in this range. Of the fifty-two pupils in the lower-group, twelve pupils scored between the 12 to 17 score range, thirty four pupils scored between the 6 to 11 score range, and six pupils scored between the 1 to 5 score range.

In terms of total scores, the Upper-Third group had a high score of 38 and a low score of 18. The Lower-Third group had a high score of 12 and a low score of 2.

In terms of mean and median scores, the Upper-Third group scored higher than the Lower-Third group. The mean

TABLE I

SCORES MADE ON BENTLEY MUSICAL ABILITIES TEST

Scores	Number of Upper-Third Pupils	Number of Lower-Third Pupils
36-41	1	0
30-35	1	0
24-29	9	0
18-23	41	0
12-17	0	12
6-11	0	34
1-5	0	6
High Score	38	12
Q3	21.7	10.2
Mean	21.7	9.3
Median Q2	19.7	9.0
Mode	19, 22	12
Q1	18.3	7.0
Low Score	18	2

being at 21.7 and 9.3, and the median being at 19.7 and 9.0 respectively.

The results of the tabulation of scores from which the following conclusions were drawn, are shown in Table II.

The Grade-Placement level recorded from the California Comprehensive Test of Basic Skills, was higher in the Upper-Third group than that of the Lower-Third group, except on the level of 1.8 to 2.1, 1.4 to 1.7, and 1.0 to 1.3. The Lower-Third group was larger by ten pupils on the 1.8 to 2.1 grade-placement level, by three pupils on the 1.4 to 1.7 grade-placement level and by four pupils on the 1.0 to 1.3 grade placement level. The Upper-Third group was higher than the Lower-Third group on the 3.4 to 3.7 grade placement level by one pupil, on the 3.0 to 3.3 grade=placement level by four pupils, on the 2.6 to 2.9 grade-placement level by five pupils, and on the 2.2 to 2.5 grade placement level by seven pupils.

In terms of high and low grade-placement levels, the upper-group had a high grade-placement of 3.5, and a low grade-placement level of 1.0. The lower-group had a high grade-placement level of 3.2 and a low grade-placement level of 1.0.

In terms of mean and median scores, the upper-group achieved a mean of 2.0 and a median of 1.82. The lower-group achieved a mean of 1.8 and a median of 1.6.

The results of the tabulation of scores from which the following conclusions were drawn, are shown in Table III.

TABLE II

GRADE-PLACEMENT LEVEL

CALIFORNIA COMPREHENSIVE TEST OF BASIC SKILLS

Level	Number of Upper-Third Pupils	Number of Lower-Third Pupils
3.4-3.7	1	0
3.0-3.3	5	1
2.6-2.9	8	3
2.2-2.5	8	1
1.8-2.1	8	18
1.4-1.7	17	20
1.0-1.3	5	9
High Score	3.5	3.2
Q3	2.58	1.8
Mean	2.0	1.8
Median Q2	1.82	1.6
Mode	1.7	1.7
Q1	1.5	1.4
Low Score	1.0	1.0

TABLE III

SCORES MADE ON DRAKE MUSICAL MEMORY TEST FORM A

Scores	Number of Upper-Third Pupils	Number of Lower-Third Pupils
47-51	0	0
42-46	12	14
37-41	28	11
32-36	10	17
27-31	2	8
22-26	0	2
High Score	46	45
Q3	40.4	41.7
Mean	39.2	36.6
Median Q2	39.0	36.0
Mode	41.0	43.36
Q1	36.5	32.5
Low Score	28	26

Form A of the Drake Musical Memory Test was used as a pre-test to determine the current musical ability of the children. It was possible to make a score of fifty-four on this test. The Upper-Third group proved to be slightly superior to the Lower-Third group. No pupil scored on the 47-51 score range. The lower-group scored above the upper-group on the 42-46 score range by two pupils, on the 32-36 score range by seven pupils, on the 27-31 score range by six pupils and on the 22-26 score range by two pupils. The upper-group scored above the lower-group on the 37-41 range by seventeen pupils.

In terms of total scores, the Upper-Third group scored a high of 46 and a low of 28. The Lower-Third scored a high of 45 and a low of 26.

In terms of mean and median scores, the upper group achieved a mean score of 39.2 and a median of 39.0, while the mean for the lower-group was 36.6 and the median was 36.0 The Upper-Third group scored higher than the Lower-Third group.

The results of the tabulation of scores from which the following conclusions were drawn, are shown in Table IV.

Form B of the Drake Musical Memory Test was used as a post-test to determine musical growth and development. The Upper-Third group and the Lower-Third group showed considerable improvement in the score ranges. The upper-group scored above the lower group in the 47-51 score range by one pupil, in the 42-46 score range by eight pupils, and in the 32-36 score range by one pupil. The lower-group scored above the

TABLE IV

SCORES MADE ON DRAKE MUSICAL MEMORY TEST FORM B

Scores	Number of Upper-Third Pupils	Number of Lower-Third Pupils
47-51	5	4
42-46	20	12
37-41	17	24
32-36	10	9
27-31	0	3
22-26	0	0
High Score	51	48
Q3	43.6	41.0
Mean	41.2	39.9
Median Q2	40.1	39.3
Mode	41.0	41.42
Q1	37.8	36.5
Low Score	32	30

upper-group in the 37-41 score range by seven pupils, and in the 27-31 score range by three pupils. No pupils scored in the 22-26 score range.

In terms of total scores, the Upper-Third group had a high score of 51, and a low score of 32. The Lower-Third group had a high score of 48, and a low score of 30.

In terms of mean and median scores, the upper-group scored higher than the lower-group. The mean computed for the upper group was at 41.2 and the median at 40.1. The means computed for the lower-group was at 39.9 and the median at 39.3. The mode for the lower-group was higher than that of the upper-group, at 41, 42, and 41.0 respectively. This is a result of 24 pupils scoring in the 37-41 score range in the lower-group.

The results of the tabulation of scores from which the following conclusions were drawn, are shown in Table V.

A Questionnaire was used to identify third-grade pupils with more or less home-musical experience. The three classifications into which the musical background was divided were defined as follows:

(1) The musically 'good' home was composed of subjects that possessed a radio, record-player, and a piano. The majority of the family members played an instrument and indicated an interest in musical activities.

(2) The musically 'average' home was composed of subjects who owned either a radio, record-

TABLE V

SCORES MADE ON QUESTIONNAIRE

Scores	Number of Upper-Third Pupils	Number of Lower-Third Pupils
77-87	0	1
66-76	4	0
55-65	8	6
44-54	10	7
33-43	14	21
22-32	10	9
11-21	3	5
0-10	3	3
High Score	74	77
Q3	48.5	42.5
Mean	39.9	35.3
Median Q2	38.8	35.5
Mode	46	38
Q1	27.5	27.7
Low Score	10	5

player, or a piano. These subjects were members of families in which several of the members played an instrument, and participated in singing activities.

(3) The musically 'poor' home was composed of subjects that showed little or no sign of inclination toward music. These homes did not own a musical instrument, none of the members of the families played a musical instrument, nor did anyone receive private musical training. The radio, and record-player were found in most of these homes and 'pop' music was listed as a favorite choice by the majority of the family members.

Home-musical experience was found to be higher in the Upper-Third group than in the Lower-Third group. It was possible to make a score of 100 on the Questionnaire. The method used for scoring the Questionnaire is shown in Chapter III.

Four pupils scored in the 66-76 score range in the upper-group, whereas no pupils scored in this range in the lower-group. The lower-group scored above the upper-group in the 34-44 range by seven pupils. There was no significant difference in the remaining score ranges, except that, one pupil in the lower-group scoring in the 77-87 score range.

In terms of total scores, the Upper-Third group had a high score of 74 and low score of 10. The Lower-Third group had a high score of 77 and a low score of 5.

In terms of the mean and median scores, the upper-group scored higher than the lower-group. The upper-group achieved a mean score of 39.9 and a median score of 38.8. The mean and median scores for the lower-group were 35.3 and 35.5 respectively.

Table VI represents the home-musical environmental classification from the Questionnaire response. On the 50-77 score range, the Upper-Third group scored above the Lower-Third group by nine pupils. On the score range of 25-49, the Lower-Third group scored above the Upper-Third by nine pupils. On the 0-24 score range, the number of pupils (8) were the same for both groups.

The method used in selecting the home-musical environmental catagories is given in the explanation of the following conclusions. The Upper-Third group showed 14 pupils from musically 'good' homes, score range 50-77, while the Lower-Third group showed 5 pupils. Of the musically 'average' home the score range was 25-49. The upper group showed 30 pupils and the lower group showed 39 pupils. The musically 'poor' home score range was 0-24. Each group showed 8 pupils in this score range.

The calculations of four questions selected as specific items from the Questionnaire, are shown in Table VII. The response revealed the following conclusions.

TABLE VI

MUSICAL ENVIRONMENTAL CATAGORIES

FROM QUESTIONNAIRE RESPONSE

Musically 'Good' Home	Upper-Third Group		Lower-Third Group	
Score	Number of Pupils	Percentage	Number of Pupils	Percentage
50-77	14	27%	5	10%
Musically 'Average' Home	**Upper-Third Group**		**Lower-Third Group**	
Score	Number of Pupils	Percentage	Number of Pupils	Percentage
25-49	30	58%	39	75%
Musically 'Poor' Home	**Upper-Third Group**		**Lower-Third Group**	
Score	Number of Pupils	Percentage	Number of Pupils	Percentage
0-24	8	15%	8	15%

Item 3: List the instruments that you (parents) were trained to play by private lessons, in the home or in school. Include vocal training and your age at the time you received this musical training.

Of the Upper-Third and Lower-Third groups of the Musically 'Good' Home Environment, 17 parents received musical training at ages of seven to fifteen. These parents received Piano, Drum, Clarinet, Guitar, and Vocal training.

Of the Upper-Third and Lower-Third groups of the Musically 'Average' Home Environment, 10 parents received private musical training at ages ranging from ten to fifteen. These parents received Vocal, Cornet, Piano, and Tuba training by private instruction. (Table VII)

Of the Upper-Third and Lower-Third groups of the Musically 'Poor' Home Environment, no parents received musical training during their childhood, or at no other time.

Twenty-seven parents did not respond to Item 3.

Item 4: Did you enjoy your musical experiences or were you forced to study by your parents?

Of the Upper-Third and Lower-Third groups of the Musically 'Good' Home Environment, two out of seventeen parents stated "they were forced to study music by private instruction." (Table VIII)

Of the Upper-Third and Lower-Third groups of the Musically 'Average' Home Environment, eight out of sixty-nine parents stated, "they were forced to receive musical training by private instruction.

TABLE VII

QUESTIONNAIRE RESPONSE ON ITEM 3

CATAGORIES	UPPER-THIRD			LOWER-THIRD		
	yes	no	no response	yes	no	no response
Musically 'Good' Home	14 1.00%	--	--	3 .60%	--	2 .40%
Musically 'Average' Home	6 .20%	14 .46%	10 .34%	4 .10%	20 .51%	15 .38%
Musically 'Poor' Home	--	8 1.00%	--	--	8 1.00%	--

TABLE VIII

QUESTIONNAIRE RESPONSE ON ITEM 4

CATAGORIED	UPPER-THIRD			LOWER-THIRD		
	yes	no	no response	yes	no	no response
Musically 'Good' Home	14 1.00%	--	--	1 .20%	2 .40%	2 .40%
Musically 'Average' Home	6 .20%	--	24 .80%	2 .05%	2 .05%	35 .89%
Musically 'Poor' Home	--	--	8 1.00%	--	--	8 1.00%

Of the Upper-Third and Lower-Third groups of the Musically 'Poor' Home Environment, no parent received musical training during their childhood or at any other time. There were sixteen parents in this catagory.

Forty-five parents did not respond to Item 4.

Item 9: Does your child take private music lessons at home or through school organizations? List instruments, including vocal training.

Of the Upper-Third and Lower-Third groups of the Musically 'Good' Home Environment, the parents stated that none of the children received musical training by private instruction. (Table IX)

Of the Upper-Third and Lower-Third groups of the Musically 'Average' Home Environment, one parent indicated that the child received musical training by private instruction on the Clarinet.

Of the Upper-Third and Lower-Third groups of the Musically 'Poor' Home Environment, none of the children received musical training by private instruction.

Twenty-six parents did not respond to Item 9.

Item 12: What is your opinion of music as a part of the Elementary School Curriculum?

Of the Upper-Third and Lower-Third groups of the Musically 'Good' Home Environment, 17 parents were in favour of the school music program. (Table X)

Of the Upper-Third and Lower-Third groups of the Musically 'Average' Home Environment, 42 parents responded favorably to the school music program. One parent responded

TABLE IX

QUESTIONNAIRE RESPONSE ON ITEM 9

CATAGORIES	UPPER-THIRD yes	no	no response	LOWER-THIRD yes	no	no response
Musically 'Good' Home	--	14 1.00%	--	--	5 1.00%	--
Musically 'Average' Home	1 .03%	26 .86%	3 .10%	--	25 .64%	35 .35%
Musically 'Poor' Home	--	4 .50%	4 .50%	--	3 .37%	5 .62%

TABLE X

QUESTIONNAIRE RESPONSE ON ITEM 12

CATAGORIES	UPPER-THIRD yes	no	no response	LOWER-THIRD yes	no	no response
Musically 'Good' Home	14 1.00%	--	--	5 1.00%	--	--
Musically 'Average' Home	23 .76%	--	7 .23%	24 .61%	1 .02%	14 .35%
Musically 'Poor' Home	1 .12%	2 .25%	5 .62%	--	2 .25%	6 .75%

against it. The remaining parents did not respond to this question.

Of the Upper-Third and Lower-Third groups of the Musically 'Poor' Home Environment, 1 parent responded favourably to the school music program, 4 parents responded against it, and 11 parents did not respond to this question.

Twenty-seven parents did not respond to item 12.

CHAPTER V

SUMMARY AND CONCLUSIONS

It was the purpose of this study to identify musical ability and academic achievement of one group of third-grade pupils in C. F. Carr School, an compared with a corresponding group in grade and number in the same school.

The method used in selecting the number of Lower-Third pupils to correspond with the Upper-Third group, was determined from the scores on the Bentley Musical Abilities Test.

Since there are other factors constituting musical talent, in addition to the capacities measured by the tests, constructors of the tests emphasize the fact that scores made should not be interpreted as being conclusive in themselves.

Information regarding the economic, social, musical, and educational background of the 104 pupils tested, obtained through questionnaire response from each subject, led to the following conclusions. First, that musical, social, economic, and educational background of the Upper-Third group is superior to that of the Lower-Third group. Second, that, although the Lower-Third group scored higher in certain score ranges, than the Upper-Third group, the Upper-Third group is superior as far as actual musical experience and ability is concerned.

The home environment of these pupils has received considerable attention from investigators concerned with identifying characteristics of the culturally disadvantaged child. These investigations focused on home environment and family status and on motivation and aspiration. The environment has been described largely in negative terms, and little attention has been directed toward these aspects of the environment which have positive implications, or which could be utilized to the educational advantage of these children.

An attempt was made to find some relationship between the parents' present interest in music and their experiences with music during the time they attended school. Factors taken into account were:

(a) home environment during parents' childhood

(b) private musical training

(c) participation in school performance organizations and music classes

(d) participation in community musical activities while in school

(e) the effect of the community musical activities on the child's present musical ability and interest

More parents of the musically 'good' homes, owned their own instruments while in school, remained active in community cultural activities, regularly attended musical activities, and listened to music at home, than the parents of the musically 'average' and 'poor' homes.

The parents whose instruments were selected according to the needs of the band or orchestra director, for balanced

instrumentation, were found to have little involvement with music as adults. These parents had no active interest in community music and only occasional listening experiences at home.

The method used in selecting the home musical environmental classifications is given in Chapter IV. Information regarding the musical background of the 104 pupils tested, was obtained by means of a Questionnaire response from each family. The responses of the questionnaire are included in this thesis.

APPENDIX A

QUESTIONNAIRE

C. F. Carr School February 10, 1972

Dear Parent (s):

Your response to this Questionnaire will help me as a teacher to better understand the individual child through knowledge of his/her musical experience.

Please answer these questions and return this form immediately.

Thanks for your cooperation,

Primary Music Teacher

1. Check the instruments that are found in your home.

___Radio ___Record Player ___Others (list)

___Television ___Piano

2. List the instruments that you (parent) were trained to play by private instruction in the home or through school organizations. Include vocal training.

1. 2. 3. 4.

3. List instruments and your ability of performance (how well you play each). At what age did you receive this musical training?

		Ability of Performance		
AGE	INSTRUMENT	GOOD	AVERAGE	POOR

4. Did you enjoy your musical experiences or were you forced to study by your parents?

Enjoyed_____ Forced_____

5. Name the family's favorite radio station and television programs?

6. List the cultural activities (Musicals, Plays, Exhibits, Guest Artists, Speakers, etc.) sponsored by the community in your neighborhood.

7. Name the activities (from the list above) that your family attended.

8. Do you permit your child to attend the Youth Concerts scheduled for school children?

Yes_____ No_____

9. Does your child receive private music lessons at home or through school organizations? List instruments below. Include vocal training.

10. State the number of times you have attended the following musical activities.

_____Operas _____Musicals _____Symphony Concerts

_____School Programs _____Rock Musicals

_____Jazz Concerts

11. From the above list, number in the order that you enjoy most (eg., 1, 2, 3, etc.).

12. What is your opinion of music as a part of the elementary school curriculum?

Note: If you desire to make additional comments on any question please indicate the question number and continue on the back of this form.

APPENDIX B

SCORES OF EXPERIMENTAL POPULATION

* Upper-Third Group **Lower-Third Group

GROUPS SECTIONS	NAMES	SEX	BENTLEY MAT	GRADE PLACE-MENT	QUESTION-NAIRE	DRAKE A	DRAKE B
* 3A.	1.	F	22	1.5	31	44	40
* 3B.	2.	F	29	3.5	58	42	40
* 3A.	3.	M	20	1.9	39	40	40
* 3C.	4.	M	21	2.2	73	43	40
* 3E.	5.	F	26	1.9	60	46	39
* 3C.	6.	M	18	1.5	10	41	46
* 3C.	7.	F	28	2.4	68	41	39
** 3E.	8.	M	11	1.9	35	43	43
* 3B.	9.	F	22	1.7	28	42	41
* 3B.	10.	F	19	1.5	32	41	42
* 3F.	11.	M	22	2.3	56	40	40
* 3F.	12.	F	23	1.9	36	43	33
** 3A.	13.	F	10	1.5	12	31	34
* 3F.	14.	F	38	3.1	46	41	42
** 3E.	15.	M	10	1.8	44	36	40
** 3A.	16.	M	9	1.7	21	36	42
** 3E.	17.	M	10	1.8	38	32	38
** 3B.	18.	M	5	1.0	34	40	37

* Upper-Third Group **Lower-Third Group

*	3B.	19.	M	23	2.2	23	40	44
**	3E.	20.	F	12	1.7	19	36	41
*	3A,	21.	F	22	1.0	15	41	46
*	3B.	22.	M	24	2.8	25	39	41
*	3C.	23.	M	19	1.7	45	34	41
**	3E.	24.	F	7	1.7	45	37	47
**	3E.	25.	M	12	1.9	29	38	30
**	3C.	26.	F	10	1.8	52	26	32
*	3F.	27.	F	19	2.7	38	35	45
*	3E.	28.	F	8	1.1	57	40	46
**	3F.	29.	M	10	1.5	44	32	41
*	3C.	30.	F	22	2.9	33	45	45
**	3B.	31.	M	12	1.8	21	34	39
*	3E.	32.	F	21	1.9	15	36	47
*	3B.	33.	M	20	2.3	56	41	34
**	3E.	34.	M	11	1.5	33	36	42
**	3B.	35.	M	12	1.5	37	43	40
**	3B.	36.	M	10	1.5	36	39	47
**	3A.	37.	M	6	1.9	39	38	40
**	3A.	38.	F	12	1.0	31	35	40
**	3D.	39.	M	9	1.2	41	45	46
*	3B.	40.	F	19	1.7	74	40	32
**	3D.	41.	M	11	2.0	38	39	44
*	3E.	42.	F	25	1.8	43	45	45
*	3D.	43.	M	18	1.7	42	38	51
**	3C.	44.	M	2	2.7	27	37	44

* Upper-Third Group **Lower-Third Group

*	3E.	45.	M	22	2.6	39	36	49
**	3A.	46.	F	12	1.6	46	36	44
**	3F.	47.	M	12	1.4	19	41	46
**	3C.	48.	M	4	1.7	47	29	36
*	3F.	49.	F	21	2.9	23	39	41
**	3D.	50.	F	10	1.7	35	42	39
**	3C.	51.	M	6	1.0	49	36	42
*	3D.	52.	F	24	2.9	55	38	42
**	3D.	53.	F	12	2.0	54	32	36
**	3B.	54.	M	27	1.2	31	40	45
**	3D.	55.	F	8	1.7	28	35	41
*	3C.	56.	F	20	1.7	66	38	40
*	3C.	57.	M	20	3.0	56	34	45
**	3C.	58.	F	9	2.7	33	38	41
**	3F.	59.	M	12	1.7	53	30	31
*	3E.	60.	M	23	1.4	37	39	35
**	3A.	61.	F	12	2.4	37	30	39
**	3F.	62.	M	10	1.9	30	44	36
**	3A.	63.	F	10	2.1	43	45	47
**	3B.	64.	M	10	1.0	26	41	48
**	3B.	65.	F	11	2.6	38	36	41
**	3D.	66.	M	7	1.6	36	34	40
*	3D.	67.	F	22	2.7	57	28	32
**	3A.	68.	M	5	1.0	60	43	39
*	3F.	69.	M	18	1.3	0	39	41
**	3D.	70.	M	8	1.9	38	43	41

* Upper-Third Group ** Lower-Third Group

*3B.	71.	M	24	2.1	51	33	39
**3C.	72.	M	20	1.6	25	42	36
**3E.	73.	M	11	1.3	45	34	39
*3F.	74.	F	19	1.6	41	34	41
**3C.	75.	M	2	2.1	34	28	35
**3F.	76.	F	11	1.7	10	26	32
*3F.	77.	F	20	1.6	46	38	43
*3A.	78.	M	22	1.3	15	41	41
*3A.	79.	M	19	2.6	28	42	37
*3A.	80.	M	18	1.8	50	38	35
**3F.	81.	M	11	1.8	25	42	38
**3A.	82.	F	7	1.5	5	43	42
*3A.	83.	M	22	3.0	28	41	45
**3D.	84.	F	9	1.0	42	45	47
**3A.	85.	M	11	2.1	10	35	41
*3A.	86.	M	30	2.5	40	43	46
*3E.	87.	F	19	2.6	26	30	36
**3D.	88.	M	11	1.4	49	43	42
*3F.	89.	M	20	1.5	46	39	34
*3E.	90.	F	22	1.7	48	37	43
*3E.	91.	F	28	3.1	49	39	42
**3D.	92.	M	10	1.8	35	29	33
*3F.	93.	F	23	3.1	45	36	41
**3B.	94.	F	12	1.7	43	30	34
*3B.	95.	M	19	1.5	33	41	47
*3D.	96.	M	19	2.3	46	34	41
**3C.	97.	F	9	1.5	47	43	38

* Upper-Third Group ** Lower-Third Group

*3B.	98.	M	19	1.7	38	45	42
**3C.	99.	M	7	3.2	37	36	42
*3A.	100.	M	21	1.6	39	46	50
*3B.	101.	M	20	2.4	40	34	33
**3F.	102.	M	9	1.9	29	43	42
**3F.	103.	F	3	1.1	25	37	37
**3E.	104.	M	12	1.9	77	42	40

APPENDIX C

SUMMARY OF EXPERIMENTAL DATA

	Bentley Test		Grade Placement		Questionnaire		Drake Form A		Drake Form B	
	Upper Third	Lower Third	Upper Third	Lower Third	Upper Third	Lower Third	Upper Third	Lower Third	Upper Third	Lower Third
90%	25.3	11.0	2.9	2.0	56.9	48.3	43.3	42.3	45.4	44.3
80%	22.7	10.6	2.6	1.8	55.1	44.3	41.0	41.7	44.2	41.4
Q3 70%	21.4	10.1	2.4	1.7	45.7	41.9	40.1	39.7	42.9	40.8
60%	20.9	9.5	2.1	1.67	44.9	37.2	39.5	36.9	41.2	40.1
Q2 50%	19.7	9.0	1.8	1.60	38.8	35.5	38.7	35.1	40.3	39.3
40%	19.2	8.5	1.6	1.59	37.3	34.3	37.9	34.7	39.8	38.4
30%	18.5	7.7	1.5	1.58	30.8	28.8	37.0	32.3	38.9	37.4
Q1 20%	18.0	6.1	1.3	1.3	26.3	27.7	34.9	31.4	35.9	35.9
10%	17.5	4.1	1.1	.8	9.9	19.9	32.9	29.2	33.1	33.

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