

AN ANALYTICAL STUDY OF THE INTELLIGENCE QUOTIENT, PERSONALITY
ADJUSTMENT AND PARENTS' OCCUPATIONS OF THE SEVENTH
EIGHTH AND NINTH GRADE GIRLS ENROLLED IN THE
JUNIOR HIGH SCHOOL, GREENVILLE, TEXAS, AND
ON THE BASIS OF THE FINDINGS, TO MAKE
RECOMMENDATIONS FOR THE CONDUCT OF
THE PHYSICAL EDUCATION PROGRAM
DIRECTED TOWARD PERSONALITY
ADJUSTMENT

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF ARTS IN HEALTH, PHYSICAL,
EDUCATION AND RECREATION OF THE GRADUATE
DIVISION OF THE TEXAS WOMAN'S
UNIVERSITY

COLLEGE OF
HEALTH, PHYSICAL EDUCATION AND RECREATION

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DENTON, TEXAS

AUGUST, 1957

ACKNOWLEDGMENT

In making this study, the writer is indebted to several people, notably to Dr. Mary Agnes Murphy, under whose inspiration, guidance, many hours of untiring help and suggestions, for her interest and encouragement in the progress of the study and the many valuable criticisms; to the other instructors in the College of Health, Physical Education and Recreation for their kind assistance and cooperation.

To all those who have helped in the preparation of this study, the writer expresses sincere gratitude.

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CHAPTER I

INTRODUCTION

Intelligence Quotient

Early in the twentieth century Binet, a French psychologist was asked to pick out the feeble-minded children in the schools of Paris, France. However, Binet desired to do more than pick out the feeble-minded children; he was interested in studying the mental ability of all children. As a result of his interest Binet developed a series of studies in which he used the ranges obtained from the administration of mental tests and produced a yardstick that measured mental ability of every child "as with a ruler."¹

In 1908, Binet and Simon published a complete scale for scoring mental ability from the ages of three to thirteen years. The Binet and Simon scoring method of mental ability was improved by Stern, a German psychologist, in 1914 by developing a ratio between age and mental scores.² Later, Terman of Stanford University revised the ratio method of scoring by Stern by use of statistics and this is known as the Stanford revision of the Binet-Simon scale.³ Stern, in

¹Compton's Pictured Encyclopedia and Fact-Index, "Intelligence", (Chicago: F. E. Compton and Company, 1948), vol. 7, p. 96a.

²Ibid.

³Ibid.

1914, entitled his new scoring measure the Mental Age Quotient, however, Terman after making the revision of Stern's ratio scoring method, renamed the Mental Age Quotient the Intelligence Quotient or I. Q.¹

A quotient is the answer obtained when one number is divided by another. The intelligence quotient or I. Q. is obtained by dividing the mental age by the chronological age and multiplying by 100. According to this method, 100 is "normal" intelligence for a person of any age. Mental ability is often stated in terms of the intelligence quotient or I. Q.²

The mental quality of an individual has two aspects; one is the degree of Mental Ability and the other the degree of Brightness. Mental ability refers to the ability to grow mentally or to grow in thinking power, while brightness determines the rate of growth of the mental ability and the degree or intellectual power an individual will eventually reach. Mental ability is measured in terms of a score obtained from a mental ability test, while brightness is measured by the intelligence quotient.³

¹Ibid., p. 96b

²Ibid.

³Arthur S. Otis, Otis Group Intelligence Scale, Manual of Directions for Advanced Examination, (New York: World Book Company, 1929), p. 9.

The aim in mental testing is to measure the individual's ability to perform intellectual tasks successfully.¹ Colvin, in an article published by the National Society for the Study of Education, states:

. . . . intelligence itself is not inborn, only the capacity to become intelligent. For this reason some writers prefer the term "mental tests" or "mentality test" to the term "intelligence tests," since these writers mean by mentality the inborn capacity of the individual to become intelligent, provided he has the proper environment in which his mentality can develop into genuine intelligence. General intelligence or mentality, then is to be understood as a native endowment which makes it possible for the individual to become more or less intelligent on the basis of this endowment.¹

According to Thorndike, in an article published by the National Society for the Study of Education, general intelligence is a term applied to the possession of a large number of innate abilities that may be classified or arranged into pigeon holes for purposes of convenience, as all the abilities so arranged are likely to be in some kind of agreement. Thorndike believes there are three main types of innate intelligence, namely, intelligence for words and abstract ideas; motor intelligence, or skill with the use of the hands and social intelligence, or the ability to get on well with one's fellows.²

¹Gay Montrose Whipple, The Twenty-First Yearbook of the National Society for the Study of Education, (Bloomington, Illinois: Public School Publishing Company, 1922), pp. 11, 12.

²Ibid., p. 13.

Stoddard objected to the use of the I. Q. as a criterion for genius and he defined intelligence as:

... the ability to understand activities that are characterized by (1) difficulty, (2) complexity, (3) abstractness, (4) economy, (5) adaptiveness to a goal, (6) social value and (7) the emergence of originals and to maintain such activities under conditions that demand a concentration of energy and a resistance to emotional forces.¹

Perhaps the trend in the ordinary usage of the word intelligence as consisting of the ability to employ the right means in order to achieve the various ends pursued.²

Intelligence varies in two respect, namely, in degree and in range, or in intensity and in extensity. The intelligence test is an instrument used to measure both the intensity and extensity or the amount of intelligence possessed by an individual.³

The difference between high and low mental ability is differentiated largely by the speed with which a person learns. Psychologists have developed tests that measure, to some degree, the speed with which people think, how well they memorise and how accurately they reason or solve problems. These are called test of general intelligence since they include

¹George D. Stoddard, "On the Meaning of Intelligence," Psychological Review, vol. 48, (1941), pp. 250-260.

²Encyclopaedia Britannica, "Intelligence Test," (Chicago, Illinois: Encyclopaedia Britannica, Inc., 1953), vol. 12, p. 458.

³Ibid., p. 459.

many types of questions, although individuals usually do better in one area than in another. Actually, the tests measure how a person has used his ability rather than the capacity itself, since reading experience influences performance on the test.¹

Individual differences in the intelligence quotients appear to be associated with many possible causes including types of environment, opportunities for the development of language and number skills and for successful experiences. "The limits of the I. Q. may be set by heredity, but experience can account for a wide variations within those limits."²

In a review of the history of the existing instruments used in measuring intelligence, the authors of the Encyclopaedia Britannica state that the word intelligence was derived from three sources encompassing a wide range of experiences. The three sources are:

... the tests of sensory acuity, memory, attention, and the like devised in the early history of psychology; the interview, as of physician with patient or employer with candidate for employment and the school examination.³

Perhaps the chief value of intelligence measurement,

¹Evelyn G. Jones, Enjoying Health, (New York: J. B. Lippincott Company, 1952), p. 208.

²Edwin R. Guthrie and Francis F. Powers, Educational Psychology, (New York: The Ronald Press Company, 1950), p. 39.

³Encyclopaedia Britannica, op. cit., p. 462.

is the scientific (as well as rapid and accurate) classification of pupils in regard to their mental ability to learn for the purposes of teaching pupils who differ markedly in ability to progress in school."¹ The outstanding characteristics of the junior high school is undoubtedly its sensitiveness to individual differences in pupils."²

Personality Adjustment

Investigators have found that intelligence plays an important part in the kind and amount of social and recreational activities in which the individual may engage satisfactorily. There is a difference of opinion concerning the effect of superior mentality upon the social adjustment of the youth. Some contend that low intelligence is associated with social maladjustment. Marshall discovered such a relationship between low intelligence and faulty social adjustment and is of the opinion that:

. . . . "the greatest problem of maladjustment is among the dull-normals, the children with I. Q.'s from 75 to 90. The maladjustment may arise directly from low ability which makes them awkward and uncertain in contests with others and thus lessen their chances of being selected for leadership in sports and recreational games."³

¹Lotie, op. cit., 1929, p. 11.

²Whipple, op. cit., p. 169.

³E. G. Williamson, How to Counsel Students, (New York: McGraw-Hill Book Company, 1939), p. 193.

Various attempts have been made to correlate the child's school grades and the scores made on various kinds of trait tests. It was found that grades are not directly determined by personality, but on the other hand, evidence has been reported that personality may have a marked effect upon the student's use of his ability.¹

Tests cannot predict very accurately what a person will do in different, difficult, or trying situations. There are no reliable tests for measuring originality, or the ability and willingness to concentrate for a long time on a single line of thought.

School success cannot always be predicted from intelligence scores as it is a common observation that a few students make higher marks than their mental ability scores indicates.

Stagner states:

. . . . it has long been observed that intelligence scores alone do not predict school success. Some students work harder, persevere, concentrate more effectively and achieve relatively higher marks than their ability scores indicate. There are, apparently, personality factors involved in schoolwork.²

Personality is a composite made up of many different traits such as; dominance or submissiveness, self-sufficiency

¹Ross Stagner, Psychology of Personality, (New York: McGraw-Hill Book Company, Inc., 1937), p. 366.

²Ibid.

or dependence, sociability of shyness.¹ In modern years it has come to be used more and more to describe the effects which a person's traits produce on others. Personality refers to the social stimulus of a person, as distinct from his own individual methods of thinking, feeling and acting.²

The guidance of the whole individual represents a major contribution to the modern movement in education. Personality tests are designed to indentify and reveal the status of certain highly important factors in personal and social adjustments, which are usually considered intangible. An example is the California Test of Personality-Intermediate Series, Form A," devised by Thorpe, Clark and Tiegs which was prepared for the instructors's use in the guidance of students in maintaining or developing a normal balance between personal and social adjustment as a member of a group.³

Occupations of the Parents

Children's intellectual differences may result from differences in cultural backgrounds. One child may come from an environment where manipulating concrete objects are more

¹Compton's op. cit. "Character and Personality," vol. 13, p. 97.

²Ibid., p. 141.

³Louis P. Thorpe, Willis W. Clark and Ernest W. Tiegs, Manual, California Test of Personality, (Los Angeles, 28: California Test Bureau,)(Revision, 1953), p. 2.

important than handling symbols. Another child may have been reared in surroundings where abstract thinking is greatly valued. Many students go through school with the ability to handle symbols, but lack the skill in connecting the meaning of symbols with reality.¹ Intelligence tests tend to favor the child who can do abstract thinking as well as connect the meanings of symbols. Other type of tests have been developed to measure the experiences that result from differences in cultural backgrounds and in turn personality.

Factors in the cultural background that affect the personality of children include the status of the parents in the community, the occupations of the parents and the relationships in the home. Stagner² found that the economic factors exert influence upon the individual in many different ways.³ He attempted to show how the economic conditions of the family affected the personality of the parents and the child. He found that the conditions of work, poverty, unemployment and relief were connected with emotional upsets of the parents and in turn visited upon the child.

Stagner states:

. . . . the irritability of the adult as a result of

¹Edith W. Joolson, "Kinds of Intelligence Differ, Too," National Educational Journal, (Washington, D.C.: Educational Press Association of America, October, 1955), vol. 44, pp. 420-421.

²Stagner, op. cit.

³Ibid., pp. 382-383.

economic worry and insecurity is visited upon the child in excessive discipline, nagging and criticism.¹

Williamson made a study of the reports of investigators concerning social adjustment and found that experts considered inferiority to be one of the main factors in the causes of social maladjustment. They found that the attitudes of the students were expressed in undesirable reactions.

Williamson concludes from the study of the reports that:

Some of the basic causes of social maladjustment (due to feelings of inferiority and inadequacy) are found in parent's and school relationships, financial insecurity, and marked deviations from other students in dress, speech, popularity and success.²

In a study made by Fenlason in relationship to the feeling of inferiority and income of the parents he showed that as the income of the parents declined the intensity of feelings of the child's inferiority increased. He states:

. . . . it is not the money itself which counts but the things for which the money stands and which it could purchase that makes its possession so necessary to the happiness and satisfaction of high-school and college students. Consciousness of homemade or bargain-basement clothing has made some students develop feelings of inferiority which prevented them from enjoying their social contacts.³

Social relationships fail to satisfy the student, when

¹Ibid.

²Williamson, op. cit., p. 191.

³Ibid., pp. 192-193.

he does not feel he belongs to the group because of his parent's status in the community.

Another factor of great importance in the cultural background of the student is the relationship in the home. Frequently, family conflicts have a serious detrimental effect upon the student's emotional behavior with the results that he achieves less success and satisfaction in his school work and social relationships. Most school activities and social parties are organized for the benefit of the well-adjusted child.¹ Strang and Sherman are of the belief that discordant home relationships are handicaps to normal emotional growth and personality development in the child.² Groves summarizes the effects of family incompatibility on the child by stating:

. . . . the personality of the child is developed, warped, or retarded by the attitude of the adults in the family toward him and toward each other; also by the treatment he receives at their hands.³

Incompatibility is not confined to any particular type of family life as it is found among the rich as well as the poor families; in the large as well as the small families and in the families with predominately intelligent members as well as in families with less intelligent members.⁴

¹Ibid., p. 200.

²Ibid., p. 220.

³Ibid., pp. 220-221.

⁴Ibid.

Studies made at . . . "preschool, elementary-school and high-school levels support the conclusions that the psychological and emotional aspects of family life are important factors in the social and personality adjustment of students.¹

This study was undertaken as a result of an interest in the intelligence, personality adjustment and parent's occupations of the Junior High School girls and to satisfy a curiosity as to the relationship between intelligence, personality adjustment and parent's occupations.

Statement of the Problem

The investigator proposes to make an analytical study of the intelligence quotient, personality adjustment and parent's occupations of the seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas and on the basis of the findings, to make recommendations for for the conduct of the physical education program directed toward personality adjustment.

Purposes of the Study

The purposes of the study were:

1. To determine the intelligence quotient, the total personality adjustment and the parent's occupations of the seventh, eighth and ninth grade girls in the Junior High School,

¹Ibid., p. 222.

Greenville, Texas.

2. To determine the relationship between the intelligence quotient and the personality adjustment of the seventh, eighth and ninth grade girls in the Junior High School, Greenville, Texas.

3. To determine the relationship between the intelligence quotient and the total personality adjustment according to the occupations of the parents of the seventh, eighth, and ninth grade girls in the Junior High School, Greenville, Texas.

4. To make recommendations for the conduct of the physical education program in the Junior High School, Greenville, Texas for the purpose of developing better personality adjustment of the Junior High School girls.

Definitions of Terms

To facilitate a clearer understanding of the nature of the problem, terms employed in this study are defined.

1. Intelligence Quotient.--The "intelligence quotient" was suggested by Stern and introduced by Terman to indicate the ratio of mental age to chronological age.¹ Terman defined or accepted an intelligence quotient of 70 as the dividing point between feeble-mindedness and normal intelligence.²

¹Guthrie and Powers, op. cit., p. 29.

²Ibid., p. 32.

Guthrie and Edwards defined the term "intelligence quotient" as a "child's intelligence quotient is an indication of his rate of mental development."¹

Webster defines "intelligence quotient" as a number denoting the intelligence of a person, determined by multiplying his mental age by 100 (to eliminate decimals) and dividing by his chronological age."²

2. Personality.--Olson states:

. . . . the personality of each individual child has a past, a present and a future. The child carries his past with him, applies it to the present and projects it into the future, where it undergoes further modifications through new experiences. . . . thus, personality is the whole child in action in a field of social forces.³

Thorpe, Clark and Tiegs define "personality" as:
. . . . the manner and effectiveness with which the whole individual meets his personal and social problems and indirectly the manner in which he impresses his fellows. The individual's ability and past achievements are always an inevitable part of his current attempts to deal with problems intelligently.⁴

3. Personal Adjustment.--This term as used by Thorpe, Clark and Tiegs assumes "personal adjustment" to be based on a feeling of personal security.⁵

¹Edwin R. Guthrie and Allen L. Edwards, Psychology: First Course in Human Behavior, (New York: Harper and Brothers Publishers, 1949), p. 201.

²Webster's New Collegiate Dictionary, (Springfield, Massachusetts: G. and C. Merriam Company, 1945), p. 437.

³Willard C. Olson, Child Development, (Boston: D. C. Heath and Company, 1949), p. 276.

⁴Thorpe, Clark and Tiegs, op. cit., 1953 ed., p. 2.

⁵Ibid., p. 3.

4. Social Adjustment.--Thorpe, Clark and Tiegs base "social adjustment" on a feeling of social security.¹

5. Components.--Thorpe, Clark and Tiegs used the term "components" for grouping more or less specific tendencies to feel, think and act.²

6. Total Adjustment.--Thorpe, Clark and Tiegs describes "total adjustment" as composed of six components of personal adjustment and six components of social adjustment.³

7. Components of Personal Adjustment.--⁴

a. Self-Reliance is evidenced in an individual when he is capable of doing things independently of others and directing his own activities and is emotionally stable and responsible for his own behavior.

b. Sense of Personal Worth is indicated by a feeling of being well regarded by others, feeling that others have faith in his future success and believing that he has average or better than average ability.

c. Sense of Personal Freedom is enjoyed by an individual who has a share in the determination of his conduct and general policies governing his life and is able to choose his friends.

¹Ibid.

²Ibid.

³Ibid.

⁴Ibid.

d. Feeling of Belonging is indicated by a feeling of being loved by the family and the well-wishes of friends and a cordial relationship with people in general.

e. Withdrawing Tendencies are evidenced in an individual substituting joys of fantasy for actual success in reality. A characteristic of a normal adjusted person is freedom from sensitiveness, loneliness and self-concern.

f. Nervous Symptoms are evidenced in the individual by loss of appetite, frequent eye strain, inability to sleep and chronic fatigue. An individual who has these characteristic nervous symptoms may be exhibiting physical expressions of emotional conflicts.

8. Components of Social Adjustment.---¹

a. Social Standards are recognized by the individual who understands the rights of others and appreciates group cooperation and what is regarded as right and wrong.

b. Social Skills are possessed by an individual who shows a liking for people, inconveniences himself to be of assistance and is diplomatic in his dealings with both friends and strangers.

c. Anti-Social Tendencies are characterized by bullying, quarreling, disobedience and destructiveness to property.

¹Ibid., pp. 3-4.

d. Family Relations are satisfactory when an individual feels he is loved and well-treated at home and has a sense of security and self respect in connection with various members of the family.

e. School Relations are satisfactory when an individual feels that his teachers and fellow classmates like him and finds his school work adapted to his level of interests and maturity.

f. Community Relations are satisfactory when the individual mingles happily with his neighbors, takes pride in community improvements, is tolerant in his association with strangers and foreigners and show respect for laws and regulations pertaining to the general welfare of the community.

9. Parent's Occupations.--The occupation engaged in by one parent of each participant in this study.

Limitations of the Study

The study was limited to:

1. Three hundred girls: 109 seventh grade, ninety-four eighth grade and ninety-seven ninth grade enrolled in the Junior High School, Greenville, Texas, during the academic year 1955 to 1956.

2. Intelligence quotient as determined by the Otis Group Intelligence Scale.

3. Personality adjustment in terms of personal and

social adjustment as determined by the California Test of Personality-Intermediate Series, Form A.

4. Information regarding the occupations of the parents of the 300 girls obtained from the school records.

Survey of Previous Studies

A survey of previous studies concerning the intelligence quotient and personality adjustment revealed no studies identical to the proposed problem. However, several studies have undertaken to measure intelligence of students as well as the personality traits of pupils.

A number of previous studies are reviewed briefly that contributed to the selection of the instruments used and the establishment of procedures to be followed.

The purposes of the study by Hearn¹ were to measure and analyze the personality adjustment of 300 senior high school girls enrolled in physical education classes, to determine the contributions of physical education to personality adjustment and to make recommendations for the conduct of the physical education program in Sunset High School, Dallas, Texas.

The differences between the study by Hearn and the

¹Maurine Hearn, "A Study of the Personality of Three Hundred Girls in Physical Education in Sunset High School, Dallas, Texas," Unpublished Master's Thesis, Graduate Division, Department of Health, Physical Education and Recreation, Texas State College for Women, 1950.

present study are:

1. In the study by Hearn the California Test of Personality-Secondary Series was used. In the present study the California Test of Personality-Intermediate Series, Form A was used.
2. In the study by Hearn the subjects, were 300 girls chosen at random from 700 girls who volunteered to participate in the study. The girls were enrolled in physical education classes in a senior high school in a city of over 500,000 population. In the present study all the girls enrolled in the Junior High School were used. Two hundred twenty-five girls were enrolled in physical education and seventy-five were not enrolled in physical education. The population of the city in which the present study was conducted is approximately 20,000.
3. The present study differs from the study by Hearn in that the personality adjustment of the Junior High School girls was compared with their intelligence quotients; whereas, Hearn measured and analyzed personality adjustment.
4. In the present study a comparison of the intelligence quotients and total personality adjustment was made according to the occupations of the parents of the 300 Junior High School girls; whereas, Hearn made an analytical study of personality adjustment.

The present study and the study by Hearn are similar in that Hearn made recommendations for the conduct of physical

education in Sunset High School, Dallas, Texas, while the investigator of the present study make recommendations for the conduct of physical education in the Junior High School, Greenville, Texas.

The purposes of the study by Shakespeare¹ was to construct a personality adjustment rating scale as an instrument to measure the present status of the personality adjustment of the girls in health and physical education classes of James S. Deady Junior High School, Houston, Texas.

The differences between the study by Shakespeare and the present study are

1. In the study by Shakespeare a rating scale to measure the present status of the personality adjustment of the Junior High School girls was constructed and used. In the present study the investigator determined the total personality adjustment of the Junior High School girls by use of the California Test of Personality-Intermediate Series, Form A.

2. Shakespeare compared the personality rating scores with the intelligence quotients of the students. In the present study the intelligence quotients were compared with the personality adjustment of the Junior High School girls.

¹Lillian E. Shakespeare, "A Personality Rating Scale for Junior High School Girls," Unpublished Master's Thesis, Graduate Division, Department of Health, Physical Education and Recreation, Texas State College for Women, 1941.

3. The present study differs further from the study by Shakespears in that the intelligence quotient and the total adjustment of personality was compared according to the occupations of the parents of the Junior High School girls; whereas, Shakespear did not compare these factors.

4. From the findings of the present study recommendations were made for the conduct of physical education in the Junior High School; whereas, Shakespeare did not make recommendations for the conduct of physical education.

The present study and the study by Shakespeare are similar in that Shakespeare made a study of 188 girls in the James Deady Junior High School, Houston, Texas, while the investigator of the present study used 300 girls enrolled in the Junior High School, Greenville, Texas.

The purposes of the study by Closs¹ were to make comparisons between the mental ability, the participation in extra-class activities and the academic grades of 400 students enrolled in Texas State College for Women, Denton, Texas. From the findings of the study Closs made recommendations regarding stimulation and limitation of participation in extra-class activities with respect to the improvement of academic grades.

¹Elizabeth L. Closs, "A Comparative Study of the Mental Ability, the Participation in Extra-Class Activities and the Academic Grades of 400 Students Enrolled During the Fall Semester of the 1953-54 School Year at the Texas State College for Women in Denton, Texas," Unpublished Master's Thesis, Graduate Division, Department of Health, Physical Education and Recreation, Texas State College for Women, 1954.

The differences between the study by Closs and the present study are

1. In the study by Closs, The Higher Examination: Form B of the Otis Self-Administering Tests of Mental Ability was used. In the present study the Otis Group Intelligence Scale was used.
2. In the study by Closs the subjects used were 400 girls enrolled during the fall semester of 1953-54 school year at the Texas State College for Women, Denton, Texas. In the present study 300 girls enrolled in the Junior High School, Greenville, Texas were used.
3. Closs constructed and used the check-list for obtaining the extra-class participation of college students; whereas, in the present study information was secured from the Junior High School girls by use of the California Test of Personality-Intermediate Series, Form A.
4. In the study made by Closs the academic grades were determined and were compared with the extra-class activities and with mental ability; whereas, in the present study the intelligence quotients and the personality adjustment were used and compared with the parent's occupations of the 300 Junior High School girls.

The present study and the study by Closs are similar in that the intelligence quotients of the subjects were compared between each grade level.

Summary

In this chapter an introduction to the study, the statement of the problem, the purposes of the study, the definitions of terms, the limitations of the study and a survey of previous studies related to the present study have been presented.

The procedures for the development of the present study are given in Chapter II.

CHAPTER II

PROCEDURES

The present study was made as a result of the interest in the mental abilities, the personality adjustment and the parent's occupations of the girls in the Junior High School, Greenville, Texas in order to better understand the needs of the girls, and to improve the conduct of physical education classes. The procedures used in developing the present study are included in this chapter.

Sources of Data

The sources of data used were human and documentary. The human sources were 300 girls: 109 seventh grade girls, ninety-four eighth grade girls and ninety-seven ninth grade girls enrolled in the Junior High School, Greenville, Texas. Other human sources contributing to the study were experts in the field of educational guidance in the College of Health, Physical Education, and Recreation of the Texas Woman's University, Denton, Texas, and the Principal and Counselor in the Junior High School, Greenville, Texas.

The documentary sources of data used were professional books on education, guidance, personality, psychology, and physical education. Bulletins, pamphlets, periodicals, research studies, unpublished theses, dissertations, and tests were also used.

Selection of the Tests

In order to determine the mental abilities (I. Q.) and the personality adjustment of the 300 girls in the Junior High School, Greenville, Texas, instruments were selected based upon fundamental criteria for judging tests. The criteria were objectivity, reliability, validity, economy of time and money, simplicity and accuracy of scoring, adaptability to statistical treatment, and the suitability of the tests for the purposes and to the students involved in the study.

In conferences with the Principal and the Counselor of the school system of Greenville, Texas it was suggested that the tests used in the school be reviewed and submitted to a committee of experts in the field of educational testing. It was found that the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series, Form A were the most appropriate tests available for securing the mental abilities and the personality adjustment of the Junior High School girls.

The Otis Group Intelligence Scale, devised by Otis, was designed to test general mental ability. The Advanced Examination was designed for grades five through twelve. The Otis Group Intelligence Scale is a standardized test devised to measure two aspects of the mind of a student; one, to

¹Otis, op. cit., 1929 ed.

determine the degree of mental ability and the other, the degree of brightness. Otis states: "The Mental Ability is measured in terms of a score in a mental ability test, while Brightness is measured by the so-called Intelligence Quotient."¹

In order to find the intelligence quotient of a pupil the difference between his raw score and the norm for his age is determined. The norms were converted into percentile scores and used in organizing the data for interpretation in this study as the ". . . percentile rank is assumed to remain approximately constant."²

The Otis Group Intelligence Scale is composed of ten tests: (1) following directions, (2) opposites, (3) disarranged sentences, (4) proverbs, (5) arithmetic, (6) geometric figures, (7) analogies, (8) similarities, (9) narrative completion and (10) memory.

The scores for each test were obtained and then added to find the total score which is the raw measure of the student's mental ability. The raw scores were interpreted by use of a Table of Norms.³ The Table of Norms was based upon the scores of 25,226 pupils, ranging from eight through nineteen years of age, who were from some 200 cities through out the

¹Ibid., p. 9.

²Ibid., p. 10.

³Ibid.

country.

The Otis Group Intelligence Scale met the fundamental criteria for judging tests and these are discussed below.

The objectivity was obtained by the use of a printed test booklet which contained specific directions and precautions for administering the test. The scoring key consisted of cards the size of the test booklet with the correct answers printed on the edges of the cards for each of the ten tests included in the scale. The administration and scoring of the Otis Group Intelligence Scale made the procedure standardized. The raw scores obtained from each test were converted into percentile scores and used as data for this study.

Otis states:

... by "reliability" is meant the degree to which the scores of the test are consistent in measuring whatever the test measures. Reliability is determined by means of correlation between different forms of the same test.¹

The reliability coefficients were obtained by Otis from correlations of scores obtained from Forms A and B and he determined the average correlation between the Forms. A reliability coefficient of $.917 \pm .009$ was obtained from the administration of Form A twice to 128 cases in grades seven to twelve. An average correlation of $.921 \pm .009$ was obtained

¹Arthur S. Otis, Otis Self-Administering Test of Mental Ability, Manual of Directions and Key (Revised) (New York: World Book Company, 1926), p. 12.

between Form A and B.¹

Validity was secured by two means; first, through the selection of items comprising the ten tests by use of disguise in stating the items and second, a coefficient of correlation of .689 was obtained between the Higher and the Advanced Examinations administered two years apart to 180 cases in grades seven to twelve.²

The Otis Group Intelligence Scale met the criterion of time as only forty-eight minutes was required for taking the test. The criterion of economy was met as the cost of each scale was ten cents and the equipment needed by each pupil for taking the test was a pencil.

The California Test of Personality-Intermediate Series Form A constructed by Thorpe, Clark and Tiegs,³ is a standardized test designed to identify and reveal the status of certain highly important factors in personality and social adjustment. The test is composed of two parts, personal adjustment and social adjustment. The divisions of personal and social adjustment are divided into six components making a total of "... twelve more or less well defined components as a basis for diagnosis and guidance."⁴ The evaluation of

¹Ibid.

²Ibid.

³Thorpe, Clark and Tiegs, op. cit., 1942 ed.

⁴Ibid., pp. 2-4.

these components reveal whether or not the student's basic needs are being satisfied in an atmosphere of security and also, if the student is developing a balanced sense of self realization and social acceptance.

The California Test of Personality-Intermediate Series Form A met the fundamental criteria for judging tests and these are discussed below.

The objectivity was obtained by use of a printed test booklet which contained specific directions and precautions for administering the test. The scoring key consisted of cards the size of the test booklet and when the key was placed over the test only the correct answers could be seen. The suggestions to answering the test items were eliminated by disguise in the statement of the question. The author kept the language difficulties at or below the fifth grade level in order to eliminate difficulties that might affect the usefulness of the personality tests.¹

Thorpe, Clark and Tiegs states:

* * * the reliability of the California Test of Personality does not suffer by comparison with many widely used tests of mental ability and school achievement.²

The correlation coefficients of reliabilities were .932 for total adjustment, .898 for personal adjustment and .873 for

¹Ibid.

²Ibid.

social adjustment. The reliability coefficients were obtained from 792 tests by the split-half method and corrected by the Spearman-Brown Formula.¹

The test was validated by the application of statistical techniques to: (1) selection of item, (2) the personality components, (3) test item disguise and (4) limitations.²

The California Test of Personality met the criterion of economy of time as it was self-administering and required a class period of forty-five minutes for completing the test and five minutes for giving initial instructions. Further economy was secured in requiring each student to have only a lead pencil and a test booklet. The cost of the test booklet was four cents a copy, which was considered economical from an administrative viewpoint.

The norms were derived from test data for students in grades seven through ten inclusive in different schools in and near Los Angeles, California. They were given in terms of percentile ranks.³

By use of the percentile ranks obtained for the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series Form A the data were organized and are

¹Ibid.

²Ibid.

³Ibid., p. 14.

presented in Chapter III.

Selection of Students

Permission was obtained from the Principal of the Junior High School, Greenville, Texas to conduct the study. No subjective factors affected the selection of the 300 girls. An effort was made to obtain the scores of the 350 girls enrolled in the Junior High School, Greenville, Texas. It was impossible however, to obtain the scores for the Otis Group Intelligence Scale or the California Test of Personality-Intermediate Series Form A for fifty girls because of absences, withdrawals from school, or inability to schedule the examination. The limiting factor relating to inability to schedule students for administration of the tests in certain subjects has been discussed under the limitations of the study.

Background of Students

The Junior High School is located in Greenville, Texas and has an enrollment of 700 boys and girls who are classified as seventh, eighth and ninth grade students. Of this number, 350 were girls with average daily attendance and the records of 300 girls were obtained. The ages of the specific girls used in this survey ranged from eleven through seventeen years.

In Table I are presented the grades, age in years, mean age, and numbers for 109 seventh grade, ninety-four eighth grade and ninety-seven ninth grade girls enrolled in

the Junior High School, Greenville, Texas. The ages of the 300 girls were obtained from the survey of the records in the Principal's office.

TABLE I

GRADES, AGE IN YEARS, MEAN AGE AND NUMBERS FOR
109 SEVENTH, 94 EIGHTH AND 97 NINTH GRADE
GIRLS ENROLLED IN THE JUNIOR HIGH SCHOOL,
GREENVILLE, TEXAS OBTAINED FROM THE
SURVEY OF THE RECORDS IN THE
PRINCIPAL'S OFFICE

Grades	Age in Years							Mean Age	Numbers
	11	12	13	14	15	16	17		
Seventh	3	47	57	1	1	0	0	12.9	109
Eighth	0	3	45	41	3	1	1	13.9	94
Ninth	0	0	3	49	40	3	2	15.	97
Totals	3	50	105	91	44	4	3		300

The ages of the 109 seventh grade girls ranged from 11 through 15 years; the 94 eighth grade girls, 12 through 17 years and the 97 ninth grade girls, 13 through 17 years. The ages and the greatest number in one age group in each grade were 13 years, 57 girls enrolled in the seventh grade; 13 years, 45 in the eighth grade and 14 years, 49 in the ninth grade. The average age of the girls arranged in order of increase in grades were 12.9 years, seventh grade girls; 13.9 years, eighth grade girls and 15 years, ninth grade girls.

The environmental factors which probably influenced the intelligence quotient and the personality development of the students enrolled in the Junior High School, Greenville, Texas, and which were reviewed are available for study: the school plant, the faculty members, the personality guidance program, and the parent's occupations of the girls.

The sources of these environmental factors were based upon information acquired from the Principal and the Counselor of the Junior High School, and from the available statistics on file in their offices.

The Junior High School consists of two main buildings and an annex. The educational building was built and completed in 1925. The gymnasium building was added a year later, but was destroyed by fire in 1950, and rebuilt in 1951. The buildings were originally occupied by the senior high school. In 1952 the high school was moved into a new building and the Junior High School was moved into the old high school buildings. The Junior High School buildings are considered modern with adequate facilities, which include eighteen classrooms, a library, an auditorium, home economic facilities, a nurse's office and a lounge, a Counselor's office, a Committee room, rest rooms on the first and third floors, and the Principal's office with two adjoining rooms.

The gymnasium building includes two classrooms, a

a woodshop, and cafeteria facilities, a band hall, one gymnasium, three dressing rooms, and four small offices. The annex is a modern wooden frame classroom built in 1955 to accommodate an increase in enrollment.

The members of the teaching staff of the Junior High School are a selected group. Their education, travel, and experience are far above the average. The faculty consist of thirty members; twenty-seven have two degrees in one or more fields of education and three are working on the Master's Degree. All teachers have either the Bachelor of Art or the Bachelor of Science Degree. The school nurse meets the educational requirements for a registered nurse in the school system. The teachers are well dressed, and through their dress and manners, set standards which the students seem willing to follow.

The superior social backgrounds of the teaching staff influence the social skills and standards of the students enrolled in their classes.

The personality guidance program is under the direction of the Counselor in the school system. Through a testing program and a Girl's Forum the Counselor is well informed about the girls in the Junior High School. The Girl's Forum is an organization for all girls enrolled in the Junior High School. Each room as a representative on the board.

There are eight, seventh grade rooms; eight, eighth grade rooms and eight, ninth grade rooms. The twenty-four girls on the Girl's Forum Board plan a program once a month to instruct the girls in personality guidance. These programs consist of skits, socio-dramas, style shows, quizzes, and talks conducted by guest speakers.

In the opinion of the investigator, the guidance program trains the girls to be aware of, and to certain extent to cope with the turmoil of present day living conditions, personality conflicts and their own relationships to the problems of personal and social adjustment.

Administration of the Tests

The administrations of the California Test of Personality, and the Otis Group Intelligence Scale were conducted during the school year, 1955-56. A conference was held with the Counselor in the school system to discuss this study and to secure permission to use the data from the Otis Group Intelligence Scale administered to the seventh, eighth, and ninth grade girls by the counselor.

The California Test of Personality-Intermediate Series Form A was administered by the investigator to 225 girls during their physical education classes. The seventy-five girls not enrolled in physical education were given the test in a choral class period during the absence of the regular teacher.

The data obtained from the two groups were combined and treated as one group in as much as the seventy-five girls had participated in physical education classes in previous years.

Prior to the administration of The California Test of Personality the students were informed of the purposes of the study. The girls were motivated further by informing them that the scores of each grade were to be compared with the scores of the girls in each of the other two grades.

The girls enrolled in the physical education classes were asked to report to the auditorium instead of the gymnasium during their scheduled hour. As there were no desks each girl was instructed to bring something to write on and a lead pencil. Each student was given a test booklet and were seated at random in the auditorium. The general directions were given in each class and each girl was asked to print her name, age on last birthday, physical education class, grade, and period on the space provided. The students read silently while the examiner read orally the specific directions given on the test booklets.

The students were urged again to do their best as their scores would be compared with the grades of the girls in each of the other two classes.

At the close of the testing period the booklets were collected and arranged in alphabetical order which facilitated grading and recording.

Treatment of the Data

The Otis Group Intelligence Scale was scored by the use of a key, thus eliminating all subjective elements. The raw score were converted into percentile scores according to the Table of Age Norms in the manual of directions for the Otis Group Intelligence Scale.

The means, standard deviations, and standard errors of the means were calculated for the intelligence quotient for the 109 seventh grade, ninety-four eighth grade and ninety-seven ninth grade girls in the Junior High School, Greenville, Texas. Comparisons and interpretations of the data were made for the three grade groups. The critical ratios were computed and interpreted in terms of probability levels of significance of the differences between the means of the 109 seventh grade, ninety-four eighth grade and ninety-seven ninth grade intelligence quotients.

The 300 test booklets for the California Test of Personality were arranged in groups according to grades; seventh grade girls, eighth grade girls and ninth grade girls. An objective key was used to score the 180 test items. Each test item was answered by "Yes" or "No." Each correct answer, according to the key, had a value of one point, making a possible total adjustment score of 180. Each one of the six components for personal adjustment and for social adjustment had a possible score of fifteen, and there namely was total

scores possible for personal and for social adjustment. The test manual of the California Test of Personality provided directions for converting the raw scores into percentile scores. The percentile scores were recorded on the profile chart furnished with each test booklet.

The means, standard deviations, and standard error of the means were calculated for personal, social, and total adjustment and for the twelve components of personal and social adjustment using the scores made by 109 seventh grade, ninety-four eighth grade, and ninety-seven ninth grade girls. Comparisons and interpretations of the findings were made in relationship to personal, social, and total adjustment and to the twelve components for the three groups. The differences between the means, standard errors of the differences between the means and the critical ratios were computed and interpreted in terms of probability levels of significance using the differences between the means of 109 seventh grade, ninety-four eighth grade, and ninety-seven ninth grade girls for personal, social, and total adjustment and the twelve components of personal and social adjustment.

The means, standard deviations, standard error of the means, differences between the means, standard errors of the differences between the means, critical ratios and probability levels of significance of the differences between the means

were calculated from the scores made on the California Test of Personality. Comparisons and interpretations were made between the seventh and eighth grade; seventh and ninth grade and eighth and ninth grade in relationship to personal, social and total adjustment.

The means, standard deviations, standard error of the means, differences between the means, standard errors of the differences between the means, critical ratios, and probability levels of significance were calculated for the intelligence quotients for each of the three grades and interpreted. Comparisons were made between the factors of intelligence quotients and personality adjustment; intelligence quotients and social adjustment; and intelligence quotients and total adjustment of the 109 seventh grade, ninety-four eighth grade, and ninety-seven ninth grade girls.

The father's or mother's occupation was secured from the records in the Principal's office. The occupations were subjectively organized into seven classifications: (1) businesses and industries; including executives, business managers, superintendents, and private owners of businesses; (2) city and government employees; including fire marshall, utility workers, government agents, post-office clerks, railroad men, and the armed services; (3) corporations and small businesses; comprising clerks, secretaries, and salesmen; (4) farmers;

including dairymen, farmers, and ranchers; (5) laborers; consisting of bakers, barbers, beauty operators, butchers, carpenters, cleaners, contractors, custodians, drillers, drivers of school and city buses, drivers of taxies, and trucks, electricians, engineers, florist, laborers, machinists, mechanics, nurses, painters, plumbers, road workers, sanitation workers, service station employees, sheet metal workers, shoe repairer, and waitresses; (6) professional; including doctors, lawyers, preachers, superintendents of city and county schools, principals, and teachers; (7) not listed; the father was deceased or the parents divorced and no occupation was available.

The means, standard deviations, standard error of the means, differences between the means, standard errors of the differences between the means, critical ratios, and probability levels of significance of the differences between the means were calculated from the scores made on the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series, Form A respectively, according to the occupations of the parents of the 300 girls. Comparisons were made between the intelligence quotients and the total adjustment according to the parents' occupations.

Summary, Conclusions, and Recommendations for Further Study

The data were analyzed and interpreted; the study was summarized, conclusions were drawn, and recommendations for further study were made. A selected bibliography was compiled, a copy of which may be found in the appendix.

The findings and interpretations are presented in Chapter III.

CHAPTER III

ANALYSIS AND INTERPRETATION OF FINDINGS

This study was conducted to determine the relationship between the intelligence quotient, personality and the parents' occupations of 300 girls enrolled in the Junior High School, Greenville, Texas during the year 1955-1956. The Otis Group Intelligence Scale¹ was administered to determine the intelligence quotient of the participants. The personality adjustment of the girls was determined by the use of the California Test of Personality-Intermediate Series, Form A,² for evaluation of personal, social and total adjustment. The parents' occupations of each of the 300 girls were secured from the records filed in the office of the principal. Data obtained from the administration of the Otis Group Intelligence Scale, the California Test of Personality and the parents' occupations of each of the 300 girls were organized into tables. Analysis and interpretation of data presented in the tables are discussed in this chapter.

Analysis and Interpretation of Test Results

The Otis Group Intelligence Scale.--The intelligence quotients of the 300 subjects participating in this study were

¹Otis, op. cit., 1929 ed.

²Thorpe, Clark and Tiegs, op. cit.

determined through the administration of the Otis Group Intelligence Scale and were converted into mean percentile scores by use of a Table of Norms¹ published in the Manual of instructions. The intelligence quotients are referred to as mental ability in the interpretations of the data of Table II as "a child's I. Q. is an indication of his rate of mental development."²

TABLE II

MEAN PERCENTILE SCORES, RANGES IN PERCENTILE SCORES,
STANDARD DEVIATIONS AND STANDARD ERRORS OF THE
MEANS OBTAINED FROM THE ADMINISTRATION OF
THE OTIS GROUP INTELLIGENCE SCALE TO
SEVENTH, EIGHTH AND NINTH GRADE
GIRLS ENROLLED IN THE JUNIOR
HIGH SCHOOL, GREENVILLE,
TEXAS

Grades	Numbers	Intelligence Quotient			
		Mean Percentile Scores	Ranges in Percentile Scores	S.D.	m
Seventh	109	76.4	15 to 99.9	18.65	1.79
Eighth	94	71.9	0 to 99.9	23.85	2.46
Ninth	97	71.3	5 to 99.9	20.25	2.06

The variability in percentile scores obtained from the administration of the Otis Group Intelligence Scale to the participants in the three grades as indicated by the ranges are:

¹Otis, op. cit., 1929 ed., p. 7.

²Guthrie and Edwards, op. cit. p. 201.

0 to 99.9 eighth grade, 5 to 99.9 ninth grade and 15 to 99.9 seventh grade. The variability of the scores above and below the mean in a normal distribution is determined by the size of the standard deviation.¹

The standard deviations obtained for the three grades are 23.85 eighth grade, 20.25 ninth grade and 18.65 seventh grade. The scores of the eighth grade tend to vary more than the scores for the seventh and ninth grades. The standard deviation of 18.65 obtained for the seventh grade indicated that the mean percentile scores of the seventh grade were the least variable when compared with the mean percentile scores obtained for the eighth and ninth grade girls.

The standard errors of the means obtained from the administration of the Otis Group Intelligence Scale to the girls in the three grades are 1.79 seventh grade, 2.06 ninth grade and 2.46 eighth grade.

The mean percentile scores obtained from the administration of the Otis Group Intelligence Scale decreased in size as educational levels increased and are 76.4 seventh, 71.9 eighth and 71.3 ninth grade. The mean percentile score of 76.4 made by the seventh grade is the largest mean percentile score obtained from the three grades indicating the highest

¹Henry E. Garrett, Statistics in Psychology and Education, (New York: Longmans, Green and Company, 1955), p. 44.

degree of mental ability. The mean percentile score of 71.3 obtained by the ninth grade represented the lowest degree of mental ability possessed by the three grades.

A summary of the results of the data yielded from the administration of the Otis Group Intelligence Scale presented in Table II indicated (1) the seventh grade girls mean percentile score for the test was higher than the mean percentile scores of the eighth and ninth grade girls which indicated the possession of slightly greater mental ability by the average seventh grade girl than was possessed by the average eighth and ninth grade girl, (2) the scores obtained from the Otis Group Intelligence Scale for the eighth and ninth grades were found to be slightly more variable than the scores of the seventh grade as indicated by the standard deviations and the scores of the eighth grade were slightly more variable than the scores of the ninth grade and (3) reliability of the mean percentile score of the mental ability for the seventh grade was slightly greater than the reliability obtained for the means percentile score of the ninth and eighth grades as indicated by standard errors of the means of 1.79, 2.06 and 2.46, respectively.

The grades, numbers, means, percentile scores, standard errors of the means, differences between the means, the standard errors of the differences between the means, the critical ratios and the probability levels of significance computed from

the percentile scores obtained from the administration of the Otis Group Intelligence Scale to seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas are presented in Table III.

TABLE III

MEAN PERCENTILE SCORES, STANDARD ERRORS OF THE MEANS,
DIFFERENCES BETWEEN THE MEANS, STANDARD ERRORS OF THE
DIFFERENCES BETWEEN THE MEANS, CRITICAL RATIOS
AND PROBABILITY LEVELS OF SIGNIFICANCE OF
THE DIFFERENCES BETWEEN THE MEANS OBTAINED
FROM THE ADMINISTRATION OF THE OTIS
GROUP INTELLIGENCE SCALE TO
SEVENTH, EIGHTH AND NINTH
GRADE GIRLS ENROLLED IN
THE JUNIOR HIGH SCHOOL,
GREENVILLE, TEXAS

Grades	Numbers	Mean Percentile Scores	m	DM_1-M_2	D	CR	P
Seventh	109	76.4	1.79	4.5	3.04	1.48	.14
Eighth	94	71.9	2.46				
Seventh	109	76.4	1.79	5.1	2.73	1.87	.06
Ninth	97	71.3	2.06				
Eighth	94	71.9	2.46	.6	3.21	.02	.98
Ninth	97	71.3	2.06				

The differences between the mean percentile scores for the three grades obtained from the administration of the Otis Group Intelligence Scale are 5.1 seventh and ninth grade, 4.5 seventh and eighth grade .6 eighth and ninth grade.

The obtained differences between the mean is not meaningful without determining the reliability of the differences.

The standard errors of the differences between two means must be computed and divided into the differences which yields a critical ratio. The resulting critical ratio is interpreted in levels of probability or significance.¹

The difference between the mean percentile scores for mental ability of 76.4 and 71.3 for the seventh and ninth grades, respectively is 5.1 and the critical ratio is 1.87. The probability level of significance of a critical ratio of 1.87 for $(109-1)/(97-1)$ or 204 degrees of freedom is .06.

For years some investigators demanded a critical ratio of three or more before a difference was considered significant.² The level of significance demanded depends upon the type of study undertaken. However, a .05 level of significance is sufficiently exacting for the majority of investigators. The .05 level of significance indicated that the obtained mean does not deviate from the true mean more than five chances in 100. The probability level of .06 found when comparing the mental ability of the seventh grade girls with the mental ability of the ninth grade girls indicate (odds 94:6) that the obtained difference between the two groups is a true difference.

A mean difference of 4.5 was obtained between the mean percentile scores of 76.4 for mental ability of the seventh

¹Garrett, op. cit., pp. 215, 216.

²Ibid., p. 222.

grade girls and 71.9 for the mental ability of the eighth grade girls. The critical ratio was 1.43 with a probability level of .14. A level of probability of .14 is not considered sufficiently reliable, therefore it may be stated that one cannot be confident to a high degree that the obtained difference between the two groups is a true difference.

The mean percentile difference in mental ability between the mean of 71.9 obtained for the eighth grade and 71.3 obtained for the ninth grade is .6 and a critical ratio of .02 was obtained. A critical ratio this small would indicate that the difference between the two means was not large enough to be considered significant.

A summary of the results of the data yielded from the Otis Group Intelligence Scale indicated that no reliable differences were found between the mean percentile scores of the mental ability of the seventh and eighth grade girls and the eighth and ninth grade girls. A reliable difference as represented by the probability level of significance of .06 was found between the mental ability of the seventh and ninth grade girls in favor of the seventh grade girls.

The California Test of Personality-Intermediate Series, Form A.--The status of personality adjustment of 300 girls enrolled in the Junior High School, Greenville, Texas was determined by use of the California Test of Personality-Intermediate

Series, Form A, for evaluation of personal, social and total adjustment. The total adjustment score is derived by adding the total scores obtained from the personal and social adjustment.

The author used twelve components to measure personal and social adjustment. These components as explained by Thorpe, Clark and Tiegs, "are not names for so-called general traits. They are, rather, names for groupings of more or less specific tendencies to feel, think and act."¹ The personal and social adjustment scores were derived from the scores of six components, respectively. The six components which measure personal adjustment are self-reliance, sense of personal worth, sense of personal freedom, feeling of belonging, freedom from withdrawing tendencies and freedom from nervous symptoms. Social adjustment was measured by six components which are social standards, social skills, anti-social tendencies, family relations, school relations and community relations.²

"The California Test of Personality is organized around the concept of life adjustment as a balance between personal and social adjustment."³

The raw scores for personal, social and total adjustment and each of the twelve components were converted into

¹Thorpe, Clark and Tiegs, op. cit., p. 3.

²Ibid., 1942 ed., pp. 3-4.

³Ibid.

percentile scores by use of the Table of Norms established by Thorpe, Clark and Tiegs.¹

In Table IV are given the components, grades, numbers, mean percentile scores, standard deviations and standard errors of the means obtained from the administration of the California Test of Personality-Intermediate Series, Form A for seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas.

TABLE IV

COMPONENTS, GRADES, NUMBERS, MEAN PERCENTILE SCORES, STANDARD DEVIATIONS AND STANDARD ERRORS OF THE MEANS OBTAINED FROM THE ADMINISTRATION OF THE CALIFORNIA TEST OF PERSONALITY-INTERMEDIATE SERIES, FORM A, TO SEVENTH, EIGHTH AND NINTH GRADE GIRLS ENROLLED IN THE JUNIOR HIGH SCHOOL, GREENVILLE, TEXAS

Components	Grades	Numbers	Mean Percentile Scores	S.D.	n
Personal	Seventh	109	52.7	29.6	2.84
	Eighth	94	48.	29.3	3.02
Adjustment	Ninth	97	65.3	28.4	2.88
Social	Seventh	109	64.8	26.3	2.61
	Eighth	94	60.3	26.7	2.75
Adjustment	Ninth	97	75.2	23.	2.34
Total	Seventh	109	58.8	27.5	2.63
	Eighth	94	53.4	27.7	2.86
Adjustment	Ninth	97	69.9	26.4	2.68

¹Ibid., p. 30.

The mean percentile scores obtained for personal adjustment are 65.3 ninth grade girls, 52.7 seventh grade girls and 48 eighth grade girls. The sizes of the three mean percentile scores indicated that the ninth grade girls were on the average 12.6 percentile scores higher in personal adjustment than the seventh grade girls and 17.3 higher than the eighth grade girls. The seventh grade girls were on the average 4.7 mean percentile scores higher than the eighth grade girls.

The standard deviations of 29.6 attained for the seventh grade and 29.3 for the eighth grade indicated for all practical purposes similar variability between the mean percentile scores obtained for personal adjustment for the two grades. However, the standard deviation obtained for personal adjustment of 26.4 for the ninth grade girls when compared with the standard deviations of 29.6 for the seventh grade girls and 29.3 for the eighth grade girls indicated slightly less variability in the personal adjustment scores for the ninth grade girls.

The standard errors of the means for personal adjustment obtained from the administration of the California Test of Personality to the girls in the three grades are 2.54 seventh grade, 2.88 ninth grade and 3.02 eighth grade.

The mean percentile scores obtained for social

adjustment are 75.2 ninth grade, 64.8 seventh grade and 60.3 eighth grade girls. The sizes of the three mean percentile scores indicate that the ninth grade girls were on the average 10.4 mean percentile scores higher in social adjustment than the seventh grade girls and 14.9 higher than the eighth grade girls. The seventh grade girls were on the average 4.5 mean percentile scores higher than the eighth grade girls.

The standard deviations of 26.3 for the seventh grade and 26.7 for the eighth grade indicated for all practical purposes similar variability between mean percentile scores obtained for social adjustment. However, the standard deviation obtained for social adjustment of 23 for the ninth grade girls when compared with the standard deviation of 26.7 for the seventh grade girls and 26.3 for the eighth grade girls indicated slightly less variability in the social adjustment scores for the ninth grade girls.

The standard errors of the means for social adjustment obtained from the administration of the California Test of Personality to the girls in the three grades are 2.34 ninth grade, 2.61 seventh grade and 2.75 eighth grade.

The mean percentile scores obtained for total adjustment are 69.6 ninth grade, 58.8 seventh grade and 53.4 eighth grade girls. The sizes of the three mean percentile scores

indicated that the ninth grade girls were on the average 11.1 mean percentile scores higher in total adjustment than the seventh grade girls and 16.5 higher than the eighth grade girls. The seventh grade girls were on the average 5.4 mean percentile scores higher than the eighth grade girls.

The standard deviation of 27.7 for the eighth grade and 27.5 for the seventh grade indicated for all practical purposes similar variability between mean percentile scores obtained for total adjustment. However, the standard deviation obtained for total adjustment of 26.4 for the ninth grade girls when compared with the standard deviation of 27.7 for the eighth grade girls and 27.5 for the seventh grade girls indicated slightly less variability in the total adjustment scores for the ninth grade girls.

The standard errors of the means for total adjustment obtained from the administration of the California Test of Personality to the girls in the three grades are 2.63 seventh grade, 2.68 ninth grade and 2.86 eighth grade.

The summary of the results of the data yielded from the California Test of Personality presented in Table IV indicated (1) the mean percentile scores of the ninth grade girls obtained for the three components, personal, social and total adjustment were on the average higher than the mean percentile scores of the seventh and eighth grade girls which indicated

greater personality adjustment for the ninth grade girls, (2) the scores obtained from the California Test of Personality for the seventh and eighth grades were found to be slightly more variable than the scores of the ninth grade as indicated by the standard deviations and the scores of the eighth grade were slightly more variable than the scores of the seventh grade.

In Table V are presented the components, grades, numbers, mean percentile scores, standard deviations and standard errors of the means for the six components of personal adjustment obtained from the administration of the California Test of Personality to seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas.

TABLE V

COMPONENTS, GRADES, NUMBERS, MEAN PERCENTILE SCORES,
STANDARD DEVIATIONS AND STANDARD ERRORS OF THE MEANS
FOR THE SIX COMPONENTS OF PERSONAL ADJUSTMENT
OBTAINED FROM THE ADMINISTRATION OF THE
CALIFORNIA TEST OF PERSONALITY-
INTERMEDIATE SERIES, FORM A TO
SEVENTH, EIGHTH AND NINTH
GRADE GIRLS ENROLLED IN
THE JUNIOR HIGH SCHOOL,
GREENVILLE, TEXAS

Components	Grades	Number	Mean Percentile Scores	S.D.	m
Self- Reliance	Seventh	109	50.3	29.55	2.83
	Eighth	94	44.8	30.90	3.19
	Ninth	97	62.3	33.80	3.43

TABLE V - continued

Components	Grades	Number	Mean Percentile Scores	S.D.	m
Personal Worth	Seventh	109	55.1	27.80	2.66
	Eighth	94	57.7	30.	3.09
	Ninth	97	67.	26.10	2.65
Personal Freedom	Seventh	109	59.1	31.10	2.98
	Eighth	94	61.5	32.40	3.34
	Ninth	97	72.6	28.10	2.85
Belonging	Seventh	109	65.4	28.70	2.75
	Eighth	94	64.1	33.03	3.41
	Ninth	97	72.9	16.20	1.64
Withdrawing Tendencies	Seventh	109	51.4	31.15	2.10
	Eighth	94	49.9	30.50	3.14
	Ninth	97	63.2	27.90	2.83
Nervous Symptoms	Seventh	109	47.5	30.15	2.89
	Eighth	94	35.9	25.80	2.66
	Ninth	97	55.2	32.	3.25

The six components of personal adjustment discussed in the order given in Table V are self-reliance, personal worth, personal freedom, belonging, freedom from withdrawing tendencies and freedom from nervous systems.

The mean percentile scores obtained for the component self-reliance are 62.3 ninth grade, 50.3 seventh grade and 44.8 eighth grade girls. The sizes of the three mean percentile scores indicated that the ninth grade girls were on an average 12 mean percentile scores higher in self-reliance than the seventh grade girls and 17.5 higher than the eighth grade girls. The seventh grade girls were on the average 5.5 mean percentile

scores higher than the eighth grade girls in self-reliance.

The standard deviations are 33.8 ninth, 30.9 eighth and 29.55 seventh grade girls. The scores of self-reliance obtained for the ninth grade girls tend to vary more than the scores obtained for the seventh and eighth grade girls. The standard deviation of 29.55 was obtained for the seventh grade and indicated that the mean percentile scores obtained for the seventh grade were the least variable.

The mean percentile scores obtained for the component, personal worth are 67 ninth grade, 57.7 eighth grade and 55.1 seventh grade. The sizes of the three mean percentile scores indicated that the ninth grade girls were on an average 11.9 mean percentile scores higher in personal worth than the seventh grade girls and 9.3 higher than the eighth grade girls. The seventh grade girls were on the average 2.6 mean percentile scores higher than the eighth grade girls in personal worth.

The standard deviations are 30 eighth grade, 27.80 seventh grade and 26.10 ninth grade girls. The scores of personal worth obtained for the eighth grade girls tend to vary more than the scores obtained for the seventh and ninth grade girls. The standard deviation of 26.10 was obtained for the ninth grade and indicated that the mean percentile scores obtained for the ninth grade were the least variable.

The mean percentile scores for the component, personal freedom are 72.6 ninth grade, 61.5 eighth grade and 59.1 seventh grade. The sizes of the three mean percentil scored indicated that the ninth grade girls were on an average 13.5 mean percentile scores higher in personal freedom than the seventh grade girls and 11.1 higher than the eighth grade girls. The seventh grade girls were on the average 2.4 mean percentile scores lower than the eighth grade girls in personal freedom.

The standard deviations are 32.40 eighth grade, 31.10 seventh grade and 28.10 ninth grade girls. The scores of personal freedom obtained for the eighth grade girls tend to vary more than the scores for the seventh and ninth grade girls. The standard deviation of 28.10 was obtained for the ninth grade and indicated that the mean percentile scores obtained for the ninth grade were the least variable.

The mean percentile scores obtained for the component, belonging are 72.9 ninth grade, 65.4 seventh grade and 64.1 eighth grade. The sizes of the three mean percentile scores indicated that the ninth grade girls were on an average 7.5 mean percentile scores higher in the component, belonging than the seventh grade girls and 8.8 higher than the eighth grade girls. The seventh grade girls were on the average 1.3 mean percentile scores higher than the eighth grade girls in the component, belonging.

The standard deviations are 33.03 eighth grade, 28.70 seventh grade and 16.20 ninth grade girls. The scores of the component, belonging obtained for the eighth grade tend to vary more than the scores obtained for the seventh and ninth grade girls. The standard deviation of 16.20 was obtained for the ninth grade and indicated that the mean percentile scores obtained for the ninth grade were the least variable.

The mean percentile scores for the component, freedom from withdrawing tendencies are 63.2 ninth grade, 51.4 seventh grade and 49.9 eighth grade girls. The sizes of the three mean percentile scores indicated that the ninth grade was on an average 11.8 mean percentile scores higher in freedom from withdrawing tendencies than the seventh grade girls and 13.3 higher than the eighth grade girls. The seventh grade girls were on the average 1.5 mean percentile scores higher than the eighth grade girls in freedom from withdrawing tendencies.

The standard deviations are 31.15 seventh grade, 30.50 eighth grade and 27.90 ninth grade girls. The scores of freedom from withdrawing tendencies obtained for the seventh grade tend to vary more than the scores for the eighth and ninth grade girls. The standard deviation of 27.90 was obtained for the ninth grade and indicated that the mean percentile scores obtained for the ninth grade were the least variable.

The mean percentile scores for the component, freedom

from nervous symptoms are 55.2 ninth grade, 47.5 seventh grade and 35.9 eighth grade girls. The sizes of the three mean percentile scores indicated that the ninth grade was on an average 7.7 mean percentile scores higher in freedom from nervous symptoms than the seventh grade girls and 19.3 higher than the eighth grade girls. The seventh grade girls were on the average 11.6 mean percentile scores higher than the eighth grade girls in freedom from nervous symptoms.

The standard deviations are 32. ninth grade, 30.15 seventh grade and 25.80 eighth grade girls. The scores of freedom from nervous symptoms obtained for the ninth grade tend to vary more than the scores for the seventh and eighth grade girls. The standard deviation of 25.80 was obtained for the eighth grade and indicated that the mean percentile scores obtained for the eighth grade were the least variable.

A summary of the results of the data yielded from the California Test of Personality-Intermediate Series, Form A for the six components of personal adjustment in Table V indicated the mean percentile scores of the ninth grade girls for the six components; self-reliance, personal worth, personal freedom, belonging, freedom from withdrawing tendencies and freedom from nervous symptoms were higher than the mean percentile scores of the seventh and eighth grade girls indicating greater personal adjustment for the ninth grade girls as a whole.

The mean percentile scores obtained for the ninth grade girls for the six components of personal adjustment ranged from 55.2 to 72.9 and were above the mean percentile norms established by Thorpe, Clark and Tiegs and indicated the ninth grade girls were well adjusted as based on the feelings of personal security.¹

The mean percentile scores obtained from the eighth grade girls for three of the six components included in personal adjustment; self-reliance, freedom from withdrawing tendencies and freedom from nervous symptoms ranged from 35.9 to 49.9 below the fifty mean percentile norms established by Thorpe, Clark and Tiegs. These findings indicated that the eighth grade girls possessed lower degrees of feelings of freedom in sharing their experiences and assuming responsibilities with others than did the girls in the seventh and ninth grades.

The mean percentile scores obtained for the seventh grade girls for five of the six components of personal adjustment self-reliance, personal worth, personal freedom, belonging and withdrawing tendencies ranged from 50.3 to 65.4 and the mean percentile score of 47.5 obtained for the component, freedom from nervous symptoms was below the mean percentile norm of fifty.

¹Ibid., p. 3.

A summary of the variability of the scores obtained for the six components of personal adjustment in Table V indicate the mean percentile scores obtained for the components; personal worth, personal freedom, belonging and freedom from withdrawing tendencies for the seventh and eighth grade were slightly more variable than the mean percentile scores obtained from the ninth grade as indicated by the standard deviations.

The mean percentile scores obtained for the components; personal worth, personal freedom, belonging and freedom from withdrawing tendencies were slightly more variable for the eighth grade than for the seventh grade girls.

The mean percentile scores obtained for the seventh grade for the component, self-reliance was slightly less variable than the mean percentile scores obtained from the eighth and ninth grade girls.

The mean percentile score for the component, freedom from nervous symptoms was less variable for the eighth grade girls than the mean percentile scores obtained from the seventh and ninth grade girls.

In Table VI are presented the components, grades, numbers, mean percentile scores, standard deviations and standard errors of the means for the six components of social adjustment obtained from the administration of the California Test of

Personality to the seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas.

TABLE VI

COMPONENTS, GRADES, NUMBERS, MEAN PERCENTILE SCORES, STANDARD DEVIATIONS AND STANDARD ERRORS OF THE MEANS FOR THE SIX COMPONENTS OF SOCIAL ADJUSTMENT OBTAINED FROM THE ADMINISTRATION OF THE CALIFORNIA TEST OF PERSONALITY-INTERMEDIATE SERIES, FORM A TO THE SEVENTH, EIGHTH AND NINTH GRADE GIRLS ENROLLED IN THE JUNIOR HIGH SCHOOL, GREENVILLE, TEXAS

Components	Grades	Numbers	Mean Percentile Scores	S.D.	m
Social Standards	Seventh	109	68.8	23.55	2.26
	Eighth	94	57.	28.60	2.95
	Ninth	97	74.3	24.	2.43
Social Skills	Seventh	109	65.3	30.30	2.90
	Eighth	94	59.8	29.70	3.06
	Ninth	97	73.8	21.40	2.17
Anti-Social Tendencies	Seventh	109	60.2	25.60	2.45
	Eighth	94	60.9	26.70	2.75
	Ninth	97	77.	24.60	2.49
Family Relations	Seventh	109	60.1	32.35	3.10
	Eighth	94	57.2	26.30	2.71
	Ninth	97	72.7	24.20	2.46
School Relations	Seventh	109	75.9	25.70	2.46
	Eighth	94	69.	24.70	2.55
	Ninth	97	75.3	20.10	2.04
Community Relations	Seventh	109	67.2	26.10	2.50
	Eighth	94	65.	26.30	2.71
	Ninth	97	74.4	26.40	2.68

The six components of social adjustment discussed in the order given in Table VI are social standards, social skills,

anti-social tendencies, family relations, school relations and community relations,

The mean percentile scores obtained for the component, social standards are 74.3 ninth grade, 68.8 seventh grade and 57 eighth grade girls. The sizes of the three mean percentile scores indicated that the ninth grade girls were on an average 5.5 mean percentile scores higher in social standards than the seventh grade girls and 17.3 higher than the eighth grade girls. The seventh grade girls were on the average 11.8 mean percentile scores higher than the eighth grade girls in social standards.

The standard deviations are 28.60 eighth grade, 24 ninth grade and 23.55 seventh grade girls. The scores of social standards for the eighth grade girls tend to vary more than the scores obtained for the seventh and ninth grade girls. The standard deviation of 23.55 was obtained for the seventh grade and indicated that the mean percentile scores obtained for the seventh grade were the least variable.

The mean percentile scores obtained for the component, social skills are 73.8 ninth grade, 65.3 seventh grade and 59.8 eighth grade girls. The sizes of the three mean percentile scores indicated that the ninth grade girls were on the average 8.5 mean percentile scores higher in social skills than the seventh grade girls and 14 higher than the eighth grade girls.

The seventh grade girls were on the average 5.5 mean percentile scores higher than the eighth grade girls in social skills.

The standard deviations are 30.30 seventh grade, 29.70 eighth grade and 21.40 ninth grade girls. The scores of social skills obtained for the seventh grade girls tend to vary more than the scores obtained for the eighth and ninth grade girls. The standard deviation of 21.40 was obtained for the ninth grade and indicated that the mean percentile scores obtained for the ninth grade were the least variable.

The mean percentile scores obtained for the component, anti-social tendencies are 77 ninth grade, 60.9 eighth grade and 60.2 seventh grade girls. The sizes of the three mean percentile scores indicated that the ninth grade girls were on the average 16.8 mean percentile scores higher in anti-social tendencies than the seventh grade girls and 16.1 higher than the eighth grade girls. The seventh grade girls were on the average .7 mean percentile scores lower than the eighth grade girls in anti-social tendencies.

The standard deviations are 26.70 eighth grade, 25.60 seventh grade and 24.60 ninth grade. The scores of the component, anti-social tendencies for the eighth grade girls tend to vary more than the scores obtained for the seventh and ninth grade girls. The standard deviation of 24.60 was obtained for

the ninth grade and indicated that the mean percentile scores obtained for the ninth grade were the least variable.

The mean percentile scores obtained for the component, family relations are 72.7 ninth grade, 60.1 seventh grade and 57.2 eighth grade girls. The sizes of the three mean percentile scores indicated that the ninth grade girls were on the average 12.6 mean percentile scores higher in family relations than the seventh grade girls and 15.5 higher than the eighth grade girls. The seventh grade girls were on the average 2.9 mean percentile scores higher than the eighth grade girls in family relations.

The standard deviations are 32.35 seventh grade, 26.30 eighth grade and 24.20 ninth grade girls. The scores of the component family relations for the seventh grade girls tend to vary more than the scores obtained for the eighth and ninth grade girls. The standard deviation of 24.20 was obtained for the ninth grade and indicated that the mean percentile scores obtained for the ninth grade were the least variable.

The mean percentile scores obtained for the component, school relations are 75.9 seventh grade, 75.3 ninth grade and 69 eighth grade girls. The sizes of the three mean percentile scores indicated that the seventh grade girls were on the average .6 mean percentile scores higher in school relations than the ninth grade girls and 6.9 percentile scores higher

than the eighth grade girls. The ninth grade girls were on the average 6.3 mean percentile scores higher than the eighth grade girls in school relations.

The standard deviations are 25.70 seventh, 24.70 eighth and 20.10 ninth grade girls. The scores of the component, school relations for the seventh grade girls tend to vary more than the scores obtained for the eighth and ninth grade girls. The standard deviation 20.10 was obtained for the ninth grade and indicated that the mean percentile scores for the ninth grade were the least variable.

The mean percentile scores obtained for the component, community relations are 74.4 ninth grade 67.2 seventh grade and 65 eighth grade girls. The sizes of the three mean percentile scores indicated that the ninth grade girls were on an average 7.2 mean percentile scores higher in community relations than the seventh grade girls and 9.4 higher than the eighth grade girls. The seventh grade girls were on the average 2.2 mean percentile scores higher than the eighth grade girls in community relations.

The standard deviations are 26.40 ninth grade, 26.30 eighth grade and 26.10 seventh grade girls. It may be stated for all practical purposes the variability of the mean percentile scores obtained for community relations are similar.

A summary of the results of the data yielded from the six components of social adjustment presented in Table VI

indicated the mean percentile scores of the ninth grade girls for five out of the six components; social standards, social skills, anti-social tendencies, family relations and community relations were higher than the mean percentile scores of the seventh and eighth grade girls indicating greater social adjustment for the ninth grade girls as a whole. The seventh grade girls mean percentile score obtained for the component, school relation's was .6 mean percentile score higher than the ninth grade girl indicating very slight increase in adjustment to the component school relations over the ninth grade girls.

The mean percentile scores obtained for the ninth grade girls for the six components of social adjustment ranged from 72.7 to 77 and were above the mean percentile norms established by Thorpe, Clark and Tiegs indicating the ninth grade girls were well adjusted as based on the feelings of social security.

The mean percentile scores obtained from the eighth grade girls for the six components of social adjustment ranged from 57 to 69 and were above the mean percentile norms established by Thrope, Clark and Tiegs indicating the eighth grade girls were well adjusted also as based on the feelings of social security.

The mean percentile scores obtained from the seventh grade girls for the six components of social adjustment ranged

from 60.1 to 75.9 and were above the mean percentile norms established by Thorpe, Clark and Tiegs indicating the seventh grade girls were well adjusted also as based on the feelings of social security.¹

A summary of the variability of the scores obtained for the six components of social adjustment in Table VI indicate the mean percentile scores obtained for the components; social skills, anti-social tendencies, family relations and school relations for the ninth grade were less variable than the mean percentile scores obtained from the seventh and eighth grade girls as indicated by the standard deviations.

The mean percentile scores obtained for the components; social skills and social relations for the eighth grades were less variable than the mean percentile scores obtained from the seventh and ninth grade girls as indicated by the standard deviations.

The mean percentile score obtained for the component, social standards for the seventh grade was less variable than the mean percentile scores obtained from the eighth and ninth grade girls.

The mean percentile scores obtained for the component, community relations for the seventh, eighth and ninth grade girls were similar as indicated by standard deviations of 26.10, 26.30 and 26.40, respectively.

¹Thorpe, Clark, Tiegs, op. cit., p. 3.

In Table VII are presented the components, grades, numbers, means, percentile scores, standard errors of the means, differences between the means, standard errors of the differences between the means, critical ratios and the probability level of significances of the differences between the means obtained from the administration of the California Test of Personality-Intermediate Series, Form A to the seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas.

TABLE VII

COMPONENTS, GRADES, NUMBERS, MEANS, PERCENTILE SCORES
STANDARD ERRORS OF THE MEANS, DIFFERENCES BETWEEN
THE MEANS, STANDARD ERRORS OF THE DIFFERENCES
BETWEEN THE MEANS, CRITICAL RATIOS AND THE
PROBABILITY LEVEL OF SIGNIFICANCE OF THE
DIFFERENCES BETWEEN THE MEANS, OBTAINED
FROM THE ADMINISTRATION OF THE
CALIFORNIA TEST OF PERSONALITY-
INTERMEDIATE SERIES, FORM A TO
SEVENTH, EIGHTH AND NINTH
GRADE GIRLS ENROLLED IN THE
JUNIOR HIGH SCHOOL,
GREENVILLE, TEXAS

Componentants	Grades	Numbers	Means Percen- tile Scores	m	Dm ₁ -M ₂	D	CR	P
Personal Adjustment	Seventh	109	52.7	2.84	4.7	4.15	1.13	.26
	Eighth	94	48.	3.02				
	Seventh	109	52.7	2.84	12.6	4.04	3.12	exceeds .01
	Ninth	97	65.3	2.88				
	Eighth	94	48.	3.02	17.3	4.17	4.15	exceeds .01
	Ninth	97	65.3	2.88				

TABLE VII - continued

Components	Grades	Numbers	Means Percentile Scores	m	Dm1-M2	D	OR	P
Social Adjustment	Seventh	109	64.8	2.61	4.5	3.79	1.19	.23
	Eighth	94	60.3	2.75				
	Seventh	109	64.8	2.61	10.4	2.62	3.97	ex- ceeds .01
	Ninth	97	75.2	.23				
	Eighth	94	60.3	2.75	14.9	2.76	5.40	ex- ceeds .01
	Ninth		75.2	.23				
Total Adjustment	Seventh	109	58.8	2.63	5.4	3.89	1.39	.16
	Eighth	94	53.4	2.86				
	Seventh	109	58.8	2.63	11.1	3.75	2.96	ex- ceeds .01
	Ninth	97	69.9	2.68				
	Eighth	94	53.4	2.86	16.5	3.92	4.21	ex- ceeds .01
	Ninth	97	69.9	2.68				

The differences between the mean percentile scores for personal adjustment for the three grades obtained from the administration of the California Test of Personality-Intermediate Series, Form A are 4.7 seventh and eighth grade, 12.6 seventh and ninth grade and 17.3 eighth and ninth grade girls.

A mean difference of 4.7 was obtained between the mean percentile scores of 52.7 obtained for the seventh grade girls and 48 obtained for the eighth grade girls for personal adjustment. The critical ratio was 1.13 was a probability level of .26. A level of probability of .26 is not considered sufficiently reliable, therefore, it may be stated that one cannot be confident

to a high degree that the obtained difference between the seventh and eighth grade is a true difference.

The mean difference of 12.6 was obtained between the mean percentile scores of 52.7 obtained for the seventh grade girls and 65.3 obtained for the ninth grade girls for personal adjustment. The critical ratio was 3.12 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the seventh and ninth grade girls is a true difference and indicated superior personal adjustment for the ninth grade girls.

A mean difference of 17.3 was obtained between the mean percentile scores of 48 obtained for the eighth grade girls and 65.3 for the ninth grade girls for personal adjustment. The critical ratio was 4.15 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore, it may be stated that one can be confident to a high degree that the obtained difference between the eighth and ninth grade girls is a true difference and indicated superior personal adjustment for the ninth grade girls.

A difference between the mean percentile scores for social adjustment for the three grades obtained from the

administration of the California Test of Personality-Intermediate Series, Form A are 4.5 seventh and eighth grade, 10.4 seventh and ninth and 14.9 eighth and ninth grade girls.

A mean difference of 4.5 was obtained between the mean percentile scores of 64.8 obtained for the seventh grade girls and 60.3 obtained for the eighth grade girls for social adjustment. The critical ratio was 1.19 with a probability level of .23. A level of probability of .23 is not considered sufficiently reliable, therefore it may be stated that one cannot be confident to a high degree that the obtained difference between the seventh and eighth grade is not a true difference.

The mean difference of 10.4 was obtained between the mean percentile scores of 64.8 obtained for the seventh grade girls and 75.2 obtained for the ninth grade girls for social adjustment. The critical ratio was 3.97 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the seventh and ninth grade girls is a true difference and indicated superior social adjustment for the ninth grade girls.

A mean difference of 14.9 was obtained between the mean percentile scores of 60.3 obtained for the eighth grade girls and 75.2 obtained for the ninth grade girls for social adjustment. The critical ratio was 5.40 with a probability level

exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the eighth and ninth grade girls is a true difference and indicated superior social adjustment for the ninth grade girls.

A difference between the mean percentile scores for total adjustment for the three grades obtained from the administration of the California Test of Personality-Intermediate Series, Form A are 5.4 seventh and eighth grades, 11.1 seventh and ninth grades, and 16.5 eighth and ninth grade girls.

A mean difference of 5.4 was obtained between the mean percentile scores of 58.8 obtained for the seventh grade girls and 53.4 obtained for the eighth grade girls for total adjustment. The critical ratio was 1.39 with a probability level of .16. A level of probability of .16 is not considered sufficiently reliable, therefore it may be stated that one cannot be confident to a high degree that the obtained difference between the seventh and eighth grade girls is a true difference.

A mean difference of 11.1 was obtained between the mean percentile scores of 58.8 obtained for the seventh grade girls and 69.9 obtained for the ninth grade girls for total adjustment. The critical ratio was 2.96 with a probability level exceeding .01. The probability level of .01 is considered

highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the seventh and ninth grade girls is a true difference and indicated superior total adjustment for the ninth grade girls.

A mean difference of 16.5 was obtained between the mean percentile scores of 53.4 obtained for the eighth grade girls and 69.9 obtained for the ninth grade girls for total adjustment. The critical ratio was 4.21 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the eighth and ninth grade girls is a true difference and indicated superior social adjustment for the ninth grade girls.

A summary of the results of the data yielded from the California Test of Personality-Intermediate Series, Form A for the components; personal adjustment, social adjustment and total adjustment, indicated no reliable differences was found between the mean percentile scores of the seventh and eighth grade girls.

A reliable difference exceeding the probability level of significance of .01 was found between the personal adjustment for the seventh and ninth grade girls and the eighth and

ninth grade girls in favor of the ninth grade girls.

A reliable difference exceeding the probability level of significance of .01 was found between the social adjustment between the seventh and ninth grade girls and the eighth and ninth grade girls in favor of the ninth grade girls.

A reliable difference exceeding the probability level of significance of .01 was found between the social adjustment between the seventh and ninth grade girls and the eighth and ninth grade girls in favor of the ninth grade girls.

A reliable difference exceeding the probability level of significance of .01 was found between the total adjustment between the seventh and ninth grade girls and the eighth and ninth grade girls in favor of the ninth grade girls.

Comparison of Intelligence Quotient with Personality Adjustment; Personal, Social and Total for the Three Grades.--
A comparison was made between the mean percentile scores for intelligence quotients and personality adjustment obtained from the administration of the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series, Form A to seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas.

In Table VIII are presented the grades, numbers, components, means percentile scores, standard deviations, standard errors of the means, differences between the means, standard

errors of the differences between the means, critical ratios and the probability levels of significance of the difference between the means obtained from the administration of the Otis Group Intelligence Scale and the California Test of Personality to the seventh, eighth and ninth grade girls.

TABLE VIII

GRADES, NUMBERS, COMPONENTS, MEANS PERCENTILE SCORES, STANDARD ERROR OF THE MEANS, DIFFERENCES BETWEEN THE MEANS, STANDARD ERRORS OF THE DIFFERENCES BETWEEN THE MEANS, CRITICAL RATIOS AND THE PROBABILITY LEVELS OF SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE MEANS OBTAINED FROM THE ADMINISTRATION OF THE OTIS GROUP INTELLIGENCE SCALE AND THE CALIFORNIA TEST OF PERSONALITY-INTERMEDIATE SERIES, FORM A TO SEVENTH, EIGHTH AND NINTH GRADE GIRLS ENROLLED IN THE JUNIOR HIGH SCHOOL GREENVILLE, TEXAS

Grades	Numbers	Components	Means Percentile Scores	m	$D=M_1-M_2$	D	CR	P
Seventh	109	IQ	76.4	1.79	23.7	3.36	7.05	ex-
		Personal	52.7	2.84				ceeds
								.01
		IQ	76.4	1.79	11.6	3.16	3.67	ex-
		Social Adj.	64.8	2.61				ceeds
								.01
Eighth	94	IQ	76.4	1.79	17.6	3.18	5.53	ex-
		Total Adj.	58.8	2.63				ceeds
								.01
		IQ	71.9	2.46	23.9	3.91	6.11	ex-
		Personal	48.	3.02				ceeds
								.01
		IQ	71.9	2.46	11.6	3.69	3.14	ex-
		Social Adj.	60.3	2.75				ceeds
								.01

TABLE VIII - continued

Grades	Numbers	Components	Means Percentile Scores	m	$D=M_1-M_2$	D	CR	P
		IQ	71.3	2.46	18.5	3.77	4.91	ex- ceeds .01
		Total Adj.	53.4	2.86				
Ninth	97	IQ	71.3	2.06				
		Personal	65.3	2.88				
		IQ	71.3	2.06	3.9	3.78	1.03	.30
		Social Adj.	75.2	.23				
		IQ	71.3	2.06	1.4	3.38	.04	.97
		Total Adj.	69.9	2.68				

The differences between the mean percentile scores for intelligence quotient and personal adjustment, intelligence quotient and social adjustment and intelligence quotient and total adjustment for the seventh grade girls obtained from the administration of the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series, Form A are 23.7 intelligence quotient and personal adjustment, 11.6 intelligence quotient and social adjustment and 17.6 intelligence quotient and total adjustment.

A mean difference of 23.7 was obtained between the mean percentile scores of 76.4 obtained for the intelligence quotient and 52.7 obtained for the personal adjustment for the seventh grade girls. The critical ratio was 7.05 with a probability

level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the intelligence quotient and the personal adjustment for the seventh grade girls is a true difference, in favor of mental ability.

A mean difference of 11.6 was obtained between the mean percentile scores of 76.4 obtained for the intelligence quotient and 64.8 obtained for the Social adjustment for the seventh grade girls. The critical ratio was 3.67 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the intelligence quotient and the social adjustment for the seventh grade girls is a true difference in favor of of mental ability.

The difference between the mean percentile scores for intelligence quotient and personal adjustment, intelligence quotient and social adjustment and intelligence quotient and total adjustment for the eighth grade girls obtained from the administration of the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series, Form A are 23.9 intelligence quotient and personal adjustment, 11.6 intelligence quotient and social adjustment, and 18.5 intelligence quotient and total adjustment.

A mean difference of 23.9 was obtained between the mean percentile scores of 71.9 obtained for the intelligence quotient and 48 obtained for the personal adjustment for the eighth grade girls. The critical ratio was 6.11 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the intelligence quotient and the personal adjustment for the eighth grade girls is a true difference in favor of mental ability.

A mean difference of 11.6 was obtained between the mean percentile scores of 71.9 obtained for the intelligence quotient and 60.3 obtained for the social adjustment for the eighth grade girls. The critical ratio was 3.14 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the intelligence quotient and the social adjustment for the eighth grade girls is a true difference in favor of mental ability.

A mean difference of 18.5 was obtained between the mean percentile scores of 71.9 obtained for the intelligence quotient and 53.4 obtained for the total adjustment for the eighth grade girls. The critical ratio was 4.91 with a probability level

exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the intelligence quotient and the total adjustment for the eighth grade is a true difference in favor of mental ability.

The difference between the mean percentile scores for intelligence quotient and personal adjustment, intelligence quotient and social adjustment and intelligence quotient and total adjustment for the ninth grade girls obtained from the administration of the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series, Form A are 6 intelligence quotient and personal adjustment, 3.9 intelligence quotient and social adjustment and 1.4 intelligence and total adjustment.

A mean difference of 6 was obtained between the mean percentile scores of 71.3 obtained for the intelligence quotient and 65.3 obtained for the personal adjustment for the ninth grade girls. The critical ratio was .02 with a probability level of .98. A level of probability of .98 is not considered sufficiently reliable, therefore it may be stated that one cannot be confident to a high degree that the obtained difference between the intelligence quotient and the personal adjustment for the ninth grade girls is a true difference, in favor of mental ability.

A mean difference of 3.9 was obtained between the mean percentile scores of 71.3 obtained in the intelligence quotient and 75.2 obtained for the total adjustment for the ninth grade girls. The critical ratio was 1.03 with a probability level of .30. A level of probability of .30 is not considered sufficiently reliable, therefore it may be stated that one cannot be confident to a high degree that the obtained difference between the intelligence quotient and the social adjustment for the ninth grade girls is a true difference.

A mean difference of 1.4 was obtained between the mean percentile scores of 71.3 obtained for the intelligence quotient and 69.9 obtained for the total adjustment for the ninth grade girls. The critical ratio was .04 with a probability level of .97. A level of probability of .97 is not considered sufficiently reliable, therefore it may be stated that one cannot be confident to a high degree that the obtained difference between the intelligence quotient and the total adjustment for the ninth grade girls is a true difference.

A summary of the results of the data yielded from the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series, Form A presented in Table VIII, indicated no reliable differences were found in comparing

the mean percentile scores obtained from the ninth grade girls for mental ability with the mean percentile scores obtained for personal adjustment, social adjustment and total adjustment, respectively.

In comparing the mean percentile scores obtained from the seventh and eighth grade girls for mental ability with the mean percentile scores obtained for personal adjustment, social adjustment and total adjustment, respectively critical ratios exceeding .01 level of probability were found to be reliable. Therefore, it may be stated that one can be confident to high degrees that the obtained differences between the mental ability and the personal adjustment, social adjustment and total adjustment, respectively are true differences, in favor of mental ability for the seventh and eighth grade girls.

Comparison of the Intelligence Quotient with the Total Adjustment According to the Parents' Occupations.--The occupations engaged in by one of the parents, each of the 300 girls participating in this study were secured from the records in the Principal's office and subjectively organized into seven classifications and listed in alphabetical order are businesses and industries, city and government employees, corporations and small businesses, farmers, laborers, professional and a group whose parents' occupations were not listed.

In Table IX are presented the parents' occupations, numbers, components, mean percentile scores, standard deviations, standard errors of the means, differences between the means, standard errors of the differences between the means, critical ratios and the probability level of significance of the differences between the means obtained from the administration of the Otis Group Intelligence Scale and the California Test of Personality and the parents' occupations of the seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas.

The number and types of the occupations of the parents of each of the 300 Junior High School girls are 110 laborers, 87 corporations and small businesses, 31 businesses and industries, 27 city and government, 27 farmers, 11 professional and a group of 7 whose occupations were not listed.

TABLE IX

OCCUPATIONS, NUMBERS, COMPONENTS, MEANS PERCENTILE SCORES, STANDARD DEVIATIONS, STANDARD ERRORS OF THE MEANS, DIFFERENCE BETWEEN THE MEANS, STANDARD ERRORS OF THE DIFFERENCES BETWEEN THE MEANS, CRITICAL RATIOS AND THE PROBABILITY LEVEL OF SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE MEANS OBTAINED FROM THE ADMINISTRATION OF THE OTIS GROUP INTELLIGENCE SCALE AND THE CALIFORNIA TEST OF PERSONALITY-INTERMEDIATE SERIES, FORM A AND THE PARENT'S OCCUPATIONS OF THE SEVENTH, EIGHTH AND NINTH GRADE GIRLS ENROLLED IN THE JUNIOR HIGH SCHOOL, GREENVILLE, TEXAS

Parents' Occupations	Numbers	Components	Means Percentile Scores	S.D.	σ	$D=M_1-M_2$	D	CR	P
Businesses and Industries	31	IQ	84.4	12.40	2.23	12.	4.74	2.53	exceeds .01
		Total Adj.	72.4	23.30	4.18				
City and Government Employees	27	IQ	79.4	14.80	2.85	7.4	5.13	1.44	.15
		Total Adj.	72.	22.20	4.28				
Corporations and Small Business	87	IQ	75.	19.30	2.07	10.	3.51	2.85	exceeds .01
		Total Adj.	65.	26.50	2.84				

Farmers	27	IQ	69.8	23.50	4.53	11.5	7.05	1.63	.10
		Total Adj.	58.3	28.	5.39				
Laborers	110	IQ	67.1	29.90	2.09	14.6	3.32	4.10	ex-
		Total Adj.	52.5	26.60	2.58				ceeds .01
Professional	11	IQ	77.7	20.	6.02	00.	9.52	zero	zero
		Total Adj.	77.7	24.50	7.38				
Not Listed	7	IQ	76.4	24.50	9.25	24.3	13.51	1.8	.07
		Total Adj.	52.1	26.10	9.85				
Total	300								

The mean percentile scores obtained for the intelligence quotients of the Junior High School girls according to the occupations of the parents are 84.4 businesses and industries, 79.4 city and government employees, 77.7 professional, 76.4 not listed group, 75 corporations and small businesses, 69.8 farmers and 67.1 laborers. The sizes of the mean percentile scores for mental ability indicated the Junior High School girls whose parents' occupations were businesses and industries were on the average 5.0 mean percentile scores higher in mental ability than the city and government employees, 6.7 mean percentile scores higher than the professional parents, 8 mean percentile scores higher than the group not listed, 9.4 mean percentile scores higher than corporations and small businesses, 14.6 mean percentile scores higher than farmers and 17.3 mean percentile scores higher than the laborers.

The mean percentile scores obtained for the total adjustment of the Junior High School girls according to the occupations of the parents are 77.7 professional, 72.4 businesses and industries, 72 city and government employees, 65 corporations and small businesses, 58 farmers, 52.5 laborers and 52.1 not listed group. The sizes of the mean percentile scores of the Junior High School girls according to the occupations of the parents indicated that the professional group

were on the average 5.3 mean percentile scores higher than businesses and industries, 5 mean percentile scores higher than city and government employees, 12.7 mean percentile scores higher than corporations and small businesses, 19.7 mean percentile scores higher than farmers, 25.2 mean percentile scores higher than laborers and 25.6 mean percentile scores higher than the group whose parents were not listed.

The differences between the mean percentile scores for the intelligence quotient and the total adjustment obtained from the administration of the Otis Group Intelligence Scale and the California Test of Personality to the 300 Junior High School girls according to the types of occupations of the parents are 24.3 not listed group, 14.6 laborers, 12 businesses and industries, 11.5 farmers, 10 corporations and small businesses, 7.4 city and government employees and zero whose positions were listed as professional occupations.

A mean difference of 12 was obtained between the mean percentile scores of 84.8 obtained for the intelligence quotient and 72.4 obtained for the total adjustment of the 31 girls whose parents' occupations were classified as businesses and industries. The critical ratio was 2.5 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference

between the intelligence quotient and the total adjustment for the 31 girls whose parents' occupations were classified as businesses and industries is a true difference in favor of mental ability.

A mean difference of 7.4 was obtained between the mean percentile scores of 79.4 obtained for the intelligence quotient and 72 obtained for the total adjustment for the 27 Junior High School girls whose parents were employees of city and government organizations. The critical ratio was 1.44 with a probability level of .15. A level of probability of .15 is not considered sufficiently reliable, therefore it may be stated that one cannot be confident to a high degree that the obtained difference between the intelligence quotient and the total adjustment for the 27 Junior High School girls whose parents were employees of the city and government organizations is a true difference.

A mean difference of 10 was obtained between the mean percentile scores of 75 obtained for the intelligence quotient and 65 obtained for the total adjustment for the 87 Junior High School girls whose parents' occupations were classified as corporations and small businesses. The critical ratio was 2.85 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the

obtained difference between the intelligence quotient and the total adjustment for the 87 Junior High School girls whose parents' occupations were classified as corporations and small businesses is a true difference in favor of mental ability.

A mean difference of 11.5 was obtained between the mean percentile scores of 69.8 obtained for the intelligence quotient and 58.3 obtained for the total adjustment for the 27 Junior High School girls whose parents' occupations were classified as farmers. The critical ratio was 1.63 with a probability level of .10. A level of probability of .10 is not considered reliable, therefore it may be stated that one cannot be confident to a high degree that the obtained difference between the intelligence quotient and the total adjustment for 27 Junior High School girls whose parents' occupations were classified as farmers is a true difference.

A mean difference of 14.6 was obtained between the mean percentile scores of 67.1 obtained for the intelligence quotient and 52.5 obtained for the total adjustment for the 110 Junior High School girls whose parents' occupations were classified as laborers. The critical ratio was 4.10 with a probability level exceeding .01. The probability level of .01 is considered highly reliable, therefore it may be stated that one can be confident to a high degree that the obtained difference between the intelligence quotient and the total

adjustment for the 110 Junior High School girls whose parents' occupations were classified as laborers is a true difference in favor of mental ability.

A mean difference of zero was obtained between the mean percentile scores of 77.7 obtained for the intelligence quotient and 77.7 obtained for the total adjustment for the 11 Junior High School girls whose parents' occupations were classified as the professional positions. A difference of zero obtained between the two mean percentile scores indicated that the 11 Junior High School girls possessed similar degrees of mental ability and total personality adjustment.¹

A mean difference of 24.3 was obtained between the mean percentile scores of 76.4 obtained between the mean percentile scores of 76.4 obtained for the intelligence quotient and 52.1 obtained for the total adjustment for the 7 Junior High School girls whose parents' occupations were classified as the not listed group. The critical ratio was 1.8 with a probability level of .07. Although a probability level of .07 is not considered reliable it may be stated that the obtained difference between the intelligence quotient and the total adjustment approaches a true difference.

A summary of the results of the data yielded from the comparison of the mean percentile scores for the intelligence

¹Garrett, op. cit., p. 183.

quotients with the mean percentile scores for the total adjustment obtained from the administrations of the Otis Group Intelligence Scale and the California Test of Personality-Intermediate Series, Form A according to the seven occupations of the parents of the 300 girls enrolled in the Junior High School, Greenville, Texas indicated (1) the mean percentile scores obtained for the intelligence quotients ranged from 84.4 to 67.1 and were above the mean percentile norms established by Otis¹ and indicated the 300 girls possessed above average mental ability, (2) the mean percentile scores obtained for the total adjustment ranged from 77.7 to 52.1 and were above the mean percentile norms established by Thorpe, Clark and Tiegs² and indicated the 300 girls were well adjusted as based on the feelings of personal and social security,³

In comparing the differences between the mean percentile scores obtained for the intelligence quotient with the mean percentile scores obtained for the total personality adjustment according to the seven occupations of the parents of the 300 girls in the study indicated (1) no reliable differences were found between the means percentile scores of the girls

¹Otis, op. cit., 1929 ed., p. 10.

²Thorpe, Clark and Tiegs, op. cit., 1953 ed., p. 32.

³Ibid., p. 3.

whose parents' occupations were classified as city and government employees, farmers and professional positions, respectively, (2) a difference of .07 approaching reliability indicated that the obtained difference between the intelligence quotient and the total adjustment approaches a true difference, (3) reliable differences were found between the mean percentile scores in favor of the mental ability of the Junior High School girls whose parents' occupations were classified as businesses and industries, corporations and small businesses and laborers. The critical ratio exceeding .01 level of probability were found to be reliable. Therefore, it may be stated that one can be confident to a high degree that the obtained differences between the mental ability and the total personality is a true difference in favor of the possession of superior mental ability for the Junior High School girls whose parents' occupations were classified as businesses and industries, corporations and small businesses and laborers, and (4) the mean percentile scores obtained for the intelligence quotients and for the total adjustment were the same for the Junior High School girls whose parents' occupations were classified as professional positions and indicated that the mental ability and the total adjustment was similar.

The sizes of the mean percentile scores ranged from 64.4 to 75 obtained for the intelligence quotient and from

77.7 to 65 for the total adjustment for the Junior High School girls whose parents' occupations were classified as businesses and industries, city and government employees, professional and corporations and small businesses. The sizes of the mean percentile scores ranged from 69.8 to 67.1 for the intelligence quotients and from 58.3 to 52.5 for the total adjustment for the Junior High School girls whose parents' occupations were classified as farmers and laborers. Therefore, it may be stated that the mean percentile scores indicated higher average mental ability and total personality adjustment for the Junior High School girls whose parents' occupations were classified as businesses and industries, city and government employees, professional positions and corporations and small businesses when compared with the average mental ability and the total personality adjustment of the Junior High School girls whose parents' occupations were classified as farmers and laborers.

The summary, conclusions and recommendations for further study are given in Chapter IV.

CHAPTER IV

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The investigator proposed to make an analytical study of the intelligence quotient, personality adjustment and parents' occupations of the seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas. On the basis of the findings, recommendations were made with respect to the future conduct of the physical education program directed toward personality adjustment.

Through this study the investigator attempted to fulfill the following purposes:

1. To determine the relationship between the intelligence quotient and the personality adjustment and the parents' occupations of the seventh, eighth and ninth grade girls in the Junior High School, Greenville, Texas.
2. To determine the relationship between the intelligence quotient and the personality adjustment of the seventh, eighth and ninth grade girls in the Junior High School, Greenville, Texas.
3. To determine the relationship between the intelligence quotient and the total personality adjustment according to the occupations of the parents of the seventh, eighth and ninth grade girls in the Junior High School, Greenville,

Texas.

4. To make recommendations for the conduct of the physical education program in the Junior High School, Greenville, Texas, for the purposes of developing better personality adjustment of the Junior High School girls.

A survey of literature concerning intelligence quotient, personality adjustment and parents' occupations and for studies of a similar nature revealed no investigations identical to the present study.

The procedures used in this study and described in Chapter II included: (1) the administration of the mental ability test, (2) the administration of the personality test, (3) the securing of the parents' occupations from the girls' record cards filed in the office of the principal and (4) the general treatment of the data.

The Otis Group Intelligence Scale devised by Otis was selected as the instrument to determine the mental ability of the seventh, eighth and ninth grade girls enrolled in the Junior High School, Greenville, Texas during the school year 1955-56. The test was selected according to the criteria established for a valid instrument.

The California Test of Personality-Intermediate Series, Form A constructed by Thorpe, Clark and Tiegs was selected as the instrument to determine the personality adjustment of 300

girls enrolled in the Junior High School, Greenville, Texas, during the school year 1955-56. The test was selected as based upon the fundamental criteria for judging tests.

The fathers' or mothers' occupation was secured from the records in the Principal's office and subjectively organized into seven classifications of positions.

The plans for the collection of the data was made with the Principal and the Counselor in regard to securing the data from the Otis Group Intelligence Scale administered to the seventh, eighth and ninth grade girls.

The personality instrument for collection of data was administered to 109 seventh grade girls, ninety-four eighth grade girls and ninety-seven ninth grade girls. The plans for the test was made with consideration of the girls in regard to convenience of location, where the test was administered and of the time for the administration.

The data obtained from the Otis Group Intelligence Scale and the California Test of Personality and the parents' occupations were tabulated and analyzed and the findings from the intelligence quotient, personality adjustment and parents' occupations were presented in Chapter III. Significant findings from the three instruments are summarized and conclusions drawn.

Summary and Conclusions

The Otis Group Intelligence Scale.--The summary of the results of the data yielded from the administration of the Otis Group Intelligence Scale presented in Table II indicated, (1) the seventh grade girls' mean percentile score for the test was higher than the mean percentile scores of the eighth and ninth grade girls, which indicated the possession of slightly greater mental ability by the average seventh grade girl than was possessed by the average eighth and ninth grade girl, (2) the scores obtained from the Otis Group Intelligence Scale for the eighth and ninth grades were found to be slightly more variable than the scores of the seventh grade as indicated by the standard deviation and the score of the eighth grade were slightly more variable than the scores of the ninth grade and (3) reliability of the mean percentile score of the mental ability for the seventh grade was slightly greater than the reliability obtained for the means of the ninth and eighth grades as indicated by standard errors of the means of 1.79, 2.06 and 2.46, respectively.

A summary of the results of the data yielded from the Otis Group Intelligence Scale as presented in Table III indicated that no reliable differences were found between the mean percentil's scores of the mental ability of the seventh and eighth grade girls, and the eighth and ninth grade girls.

A reliable difference as represented by the probability level of significance of .05 was found between the mental ability of the seventh and ninth grade girls, in favor of the seventh grade girls.

The investigator has drawn the conclusion that, (1) the same degree of mental ability was found between the seventh and eighth grade girls and the eighth and ninth grade girls and (2) a reliable difference in mental ability was found in favor of the seventh grade girl, when compared with the mental ability of the seventh and ninth grade girls.

The California Test of Personality-Intermediate Series, Form A.---A summary of the results of the data yielded from the administration of the California Test of Personality presented in Table IV indicated (1) the mean percentile scores of the ninth grade girls obtained for the three components; personal, social and total adjustment were on the average higher than the mean percentile scores of the seventh and eighth grade girls, which indicated greater personality adjustment for the ninth grade girls, (2) the scores obtained from the California Test of Personality for the seventh and eighth grades were found to be slightly more variable than the scores of the ninth grade as indicated by the standard deviations and the scores of the eighth grade were slightly more variable than the scores of the seventh grade.

A summary of the results of the data yielded from the California Test of Personality from the six components of personal adjustment presented in Table V, indicated the mean percentile scores of the ninth grade girls for the six components; self-reliance, personal worth, personal freedom, belonging, freedom from withdrawing tendencies, and freedom from nervous symptoms were higher than the mean percentile scores of the seventh and eighth grade girls and indicated greater personal adjustment for the ninth grade girls as a whole.

The mean percentile scores obtained for the ninth grade girls for the six components of personal adjustment ranged from 72.9 to 55.2 and were above the mean percentile norms established by Thorpe, Clark and Tiegs and indicated the ninth grade girls were well adjusted as based on the feelings of personal security.

The mean percentile scores obtained from the eighth grade girls for the three of the six components included in personal adjustment; self-reliance, freedom from withdrawing tendencies and freedom from nervous symptoms ranged from 15 to .01 below the fiftieth mean percentile established by Thorpe, Clark and Tiegs, which indicated that the eighth grade girls do not feel freedom in sharing their experiences and assuming responsibilities with each other as the girls

in the seventh and eighth grades. The mean percentile scores obtained for the seventh grade girls for five of the six components of personal adjustment; self-reliance, personal freedom, belonging, and withdrawing tendencies ranged from 65.4 to 50.3 and the mean percentile score of 47.5 obtained for the component, freedom from nervous symptoms was below the mean percentile norm of fifty.

A summary of the variability of the scores obtained for the six components of personal adjustment in Table V indicated the mean percentile scores obtained for the components; personal worth, personal freedom, belonging, and freedom from withdrawing tendencies for the seventh and eighth grade were slightly more variable than the mean percentile scores obtained from the ninth grade as indicated by the standard deviations.

The mean percentile scores obtained for the components; personal worth, personal freedom, belonging, and freedom from withdrawing tendencies were slightly more variable for the eighth grade than for the seventh grade girls.

The mean percentile score obtained for the seventh grade for the component, self-reliance was slightly less variable than the mean percentile scores obtained from the eighth and ninth grade girls.

The mean percentile score for the component, freedom

from nervous symptoms was less variable for the eighth grade girls than the mean percentile scores obtained from the seventh and ninth grade girls.

A summary of the results of the data yielded from the six components of social adjustment presented in Table VI indicated the mean percentile scores of the ninth grade girls for five out of the six components; social standards, social skills, anti-social tendencies, family relations, and community relations were higher than the mean percentile scores of the seventh and eighth grade girls and indicated greater social adjustment for the ninth grade girls as a whole. The seventh grade girls mean percentile score obtained for the component, school relations was .6 mean percentile score higher than the ninth grade girl and indicated very slight increase in adjustment to the component school relations over the ninth grade girls.

The mean percentile scores obtained for the ninth grade girls for the six components of social adjustment ranged from 77. to 72.7 and were above the mean percentile norms established by Thorpe, Clark and Tiegs which indicated the ninth grade girls were well adjusted as based on the feelings of social security.

The mean percentile scores obtained from the eighth grade girls for the six components of social adjustment are

arranged from 69-57 and were above the mean percentile norms established by Thorpe, Clark and Tiegs indicated the eighth grade girls were well adjusted as based on the feelings of social security.

The mean percentile scores obtained from the seventh grade girls for the six components of social adjustment ranged from 75.9 to 60.1 and were above the mean percentile norms established by Thorpe, Clark and Tiegs, which indicated the eighth grade girls were also well adjusted as based on the feelings of social security.

The mean percentile scores obtained from the seventh grade girls for the six components of social adjustment ranged from 75.9 to 60.1 and were above the mean percentile norms established by Thorpe, Clark and Tiegs and indicated the seventh grade girls were also well adjusted as based on the feelings of social security.

A summary of the variability of the scores obtained for the six components of social adjustment in Table VI indicated the mean percentile scores obtained for the components; social skills, anti-social tendencies, family relations and school relations for the ninth grade were less variable than the mean percentile scores obtained from the seventh and eighth grade girls as indicated by the standard deviations.

The mean percentile scores obtained for the components;

social skills and social relations for the eighth grade were less variable than the mean percentile scores obtained from the seventh and ninth grade girls as indicated by standard deviations.

The mean percentile scores obtained for the components, social standards for the seventh grade was less variable than the mean percentile scores obtained from the eighth and ninth grade girls.

The mean percentile scores obtained for the component, community relations for the seventh, eighth and ninth grade girls were similar as indicated by standard deviations of 26.10, 26.30 and 2.40, respectively.

A summary of the results of the data yielded from the California Test of Personality for the three components; personal adjustment, social adjustment and total adjustment indicated no reliable differences were found between the mean percentile scores of the seventh and eighth grade girls.

A reliable difference exceeding the probability level of significance of .01 was found between the personal adjustment between the seventh and ninth grade girls and the eighth and ninth grade girls in favor of the ninth grade girls.

A reliable difference exceeding the probability level of significance of .01 was found between the social adjustment between the seventh and ninth grade girls and the eighth and

ninth grade girls in favor of the ninth grade girls.

A reliable difference exceeding the probability level of significance of .01 was found between the social adjustment between the seventh and ninth grade girls and the eighth and ninth grade girls in favor of the ninth grade girls.

A reliable difference exceeding the probability level of significance of .01 was found between the total adjustment between the seventh and ninth grade girls and the eighth and ninth grade girls in favor of the ninth grade girls.

The writer concludes from the foregoing study of the personality adjustment for the seventh, eighth and ninth grade girls indicated:

1. The ninth grade girls were above the mean percentile norms established by Thorpe, Clark and Tiegs for the six components of personal adjustment and the six components of social adjustment.
2. The seventh and eighth grade girls were slightly below the mean percentile norms established by Thorpe, Clark and Tiegs for the component, freedom from nervous symptoms for personal adjustment and above the mean percentile norms established by Thorpe, Clark and Tiegs for the six components, for social adjustment.
3. The eighth grade girls were slightly below the norms for the component, withdrawing tendencies with a mean

percentile score of 49.9 and the component, self-reliance with a mean percentile score of 44.8.

4. The critical ratios found between the seventh and eighth grade girls for personal adjustment, social adjustment and total adjustment indicated no significant difference in adjustment in favor of either grade.

5. The critical ratios exceeding .01 level of probability were found to be reliable differences between the seventh and ninth grade girls for personal adjustment, social adjustment and total adjustment. Therefore, it may be stated that one can be confident to a high degree that the obtained differences between the seventh and ninth grade girls for personal adjustment, social adjustment and total adjustment are true differences in favor of the ninth grade girls.

6. The critical ratios exceeding .01 level of probability were found to be reliable differences between the eighth and ninth grade girls for personal adjustment, social adjustment and total adjustment. Therefore, it may be stated that one can be confident to a high degree that the obtained differences between the eighth and ninth grade girls for personal adjustment, social adjustment and total adjustment are true differences in favor of the ninth grade girls.

Comparison of Intelligence Quotient with Personality Adjustment; Personal, Social and Total for the Grades.---A summary

of the results of the data yielded from the Otis Group Intelligence Scale and the California Test of Personality presented in Table VIII indicated no reliable differences were found in comparing the mean percentile scores obtained from the ninth grade girls for mental ability with the mean percentile scores obtained for personal adjustment, social adjustment and total adjustment, respectively.

In comparing the mean percentile scores obtained from the seventh and eighth grade girls for mental ability with the mean percentile scores obtained for personal adjustment, social adjustment and total adjustment, respectively critical ratios exceeding .01 level of probability were found to be reliable. Therefore, it may be stated that one can be confident to a high degree that the obtained differences between the mental ability and the personal adjustment, social adjustment and total adjustment are true differences in favor of the mental ability of the seventh and eighth grade girls.

Comparison of the Intelligence Quotient with the Total Adjustment of the 300 Junior High School Girls According to the Parents' Occupations.--A summary of the results of the data yielded from the comparison of the mean percentile scores for the intelligence quotients with the mean percentil scores for the total adjustment obtained from the administration of the Otis Group Intelligence Scale and the California Test of

Personality-Intermediate Series, Form A according to the seven occupations of each of the 300 girls enrolled in the Junior High School, Greenville, Texas indicated (1) the mean percentile scores obtained for the intelligence quotients ranged from 54.4 to 67.1 and were above the mean percentile norms established by Otis and indicated the 300 girls possessed above average mental ability, (2) the mean percentile scores obtained for the total adjustment ranged from 77.7 to 52.1 and were above the mean percentile norms established by Thorpe, Clark and Tiegs and indicated the 300 girls were well adjusted as based on the feelings of personal and social security.

In comparing the differences between the mean percentile scores obtained for the intelligence quotient with the mean percentile scores obtained for the total personality adjustment according to the seven occupations of the parents of the 300 girls in the study indicated (1) no reliable differences were found between the mean percentile scores of the girls whose parents' occupations were classified as city and government employees, farmers and professional positions, respectively. (2) a differences of .07 approaching reliability indicated that the obtained difference between the intelligence quotient and the total adjustment approaches a true difference, (3) reliable differences were found between the mean percentile scores of intelligent quotient and total adjustment in favor

of the mental ability of the Junior High School girls whose parents' occupations were classified as businesses and industries, corporations and small businesses and laborers. The critical ratio exceeding .01 level of probability were found to be reliable. Therefore, it may be stated that one can be confident to a high degree that the obtained differences between the mental ability and the total adjustment is a true difference in favor of the possession of superior mental ability for the Junior High School girls whose parents' occupations were classified as businesses and industries, corporations and small businesses and laborers, and (4) the mean percentile scores obtained for the intelligence quotients and for the total adjustment were the same for the Junior High School girls whose parents' occupations were classified as professional positions and indicated that the mental ability and the total adjustment was similar.

The sizes of the mean percentile scores ranged from 84.4 to 75 obtained for the intelligence quotient and from 77.7 to 65 for the total adjustment for the Junior High School girls whose parents' occupations were classified as businesses and industries, city and government employees, professional, and corporations and small businesses. The sizes of the mean percentile scores ranged from 69.3 to 67.1 for the intelligence quotients and from 58.3 to 52.5 for the total adjustment for

the Junior High School girls whose parents' occupations were classified as farmers and laborers. Therefore, it may be stated that the mean percentile scores indicated higher average mental ability and total personality adjustment for the Junior High School girls whose parents' occupations were classified as businesses and industries, city and government employees, professional positions and corporations and small businesses when compared with the average mental ability and the total personality adjustment of the Junior High School girls whose parents' occupations were classified as farmers and laborers.

The investigator concludes, from the results obtained from the comparison of the mental ability and the total personality adjustment of the 300 girls in the Junior High School, Greenville, Texas according to the parents' occupations, the following:

1. The mean percentile scores obtained for the intelligence quotient of the girls whose parents' occupations were classified as businesses and industries, city and government employees and professional positions, respectively were greater in mental ability than the mean percentile scores for the girls whose parents' occupations were classified as corporations and small businesses, farmers, laborers and the group whose occupations were not listed.

2. The mean percentile scores obtained for the total personality adjustment of the girls whose parents' occupations were classified as professional, businesses and industries and city and government employees, respectively were greater in total personality adjustment than the mean percentile scores for the girls whose parents' occupations were classified as corporations and small businesses, farmers, laborers and the group not listed.

3. Therefore, it may be stated the results indicated the girls whose parents' occupations were classified as businesses and industries, city and government employees and professional positions have a higher mental ability and are better adjusted as based on the feelings of personal and social security, than the girls whose parents' occupations were classified as corporations and small businesses, farmers, laborers and the group not listed.

The investigator realizes that uncontrollable factors may have influenced the results yielded from the data from the comparison of the mean percentile scores for the intelligence quotient with the total personality adjustment according to the parents' occupations for the 300 girls in the study. Such factors include: (1) the occupations were not grouped according to the dictionary classifications;

skilled, semi-skilled and unskilled.¹ Also, the occupations were not broken down into professional, semi-professions, managerial and official positions as the records secured from the Principal's office did not have this information.² (2) the number of girls whose parents' occupations were classified into the seven classifications were too small to indicate reliable data.³ (3) the data secured for a period of one year was not considered sufficiently reliable. The same study should be made over a period of time with different girls in the seventh, eighth and ninth grades, to state that one can be confident to a high degree that the differences between the girls whose parents' occupations were classified according to the seven classifications established by the writer were a true difference in favor of one particular group.

The writer concludes from the foregoing findings that the girls who possessed high mental ability tended to possess the better total personality adjustment as based on the feelings of personal and social security, than did the girls with the lower mental ability.

¹Carroll L. Shartle, Occupational Informations, (New York: Prentice-Hall Inc., 1946), p. 118.

²Ibid., p. 119.

³Garrett, op. cit., p. 183.

Recommendations Regarding the Conduct of the
Physical Education Program in the Junior
High School, Greenville, Texas

As a result of the present study the investigator recommends that (1) the physical education program be enriched by offering a range of activities that will afford opportunities for personality adjustment. These activities should include team and individual sports, dance and intramural activities developed each year on the bases of the needs and interests of the girls, (2) the California Test of Personality be administered at the beginning of the school year to the girls in the Junior High School, Greenville, Texas, (3) individual profiles be constructed and studied for each girl, and (4) counseling be conducted for the girls who made below the average norm established for one or more components and when possible adjustments in the conduct of the physical education activities be made.

The girls enrolled in the seventh, eighth and ninth grades made above the average percentile norms established for the six components for social adjustment and three of the components for personal adjustment.

The eighth grade girls fell below the established norm of fifty in three components for personal adjustment; self-reliance, withdrawing tendencies and nervous symptoms and the seventh grade girls fell below the established norm of fifty in

nervous symptoms. The following applications are made in regard to the conduct of the physical education for the three components. The components are defined and examples of situations are given for the improvement in the three variables.

Self-reliance,--is evidenced in an individual when he is capable of doing things independently of others and directing his own activities and is emotionally stable and responsible for his own behavior. Therefore, improvement in self-reliance will be gained through practice in definite situations as;

1. The responsibility of attending class promptly and dress in the physical education uniform without an assessment on the grade in the courses.
2. The responsibility of checking the roll of her squad and being responsible for the equipment as a squad leader.
3. The responsibility for a group or squad in which she directs the activity and helps her classmates to improve their skills.
4. A participant in activities in which she can feel secure and see her daily progress and improvement of skill.

With drawing tendencies,--are evidenced in an individual substituting joys of fantasy for actual success in reality. A characteristic of a normal adjusted person is

freedom from sensitiveness, loneliness and self-concern. Success and security will generally free one from withdrawing tendencies and may be encouraged by:

1. Giving the girls responsibilities within the scope of her abilities.
2. Placing the girl in a squad or group with friends as well as teammates with varied abilities or skill,
3. Scheduling games in the intramural program with teams of similar ability in competition,
4. Placing the girl in a squad or group which will not show resentment or exclude her in the activities,
5. Creating situations in which all girls may express their future desires and evaluate how they may be accomplished.

Nervous symptoms.--are evidenced in the individual by loss of appetite, frequent eye strain, inability to sleep and chronic fatigue. An individual who has characteristic of nervous symptoms may be exhibiting physical expressions of emotional conflicts. Freedom from nervous symptoms may be acquired by:

1. Checking with the school nurse to determine any physical basis for the nervousness,
2. Scheduling the girls in activities requiring large muscle activity,
3. Assuring personal satisfaction through games fitted

fitted to the girl's individual levels of skill.

4. Placing the girl in activities in which immediate satisfaction and success can be gained.

Recommendations for Further Study

The investigator recommends that the following studies be undertaken:

1. A comparative study of the academic grades, intelligence quotient and the personality adjustment of Junior High School girls.

2. A comparative study of the religious backgrounds and personality adjustment of Junior High School girls.

3. A comparative study of the recreational interests and personality adjustment of Junior High School girls.

4. A comparative study of the personality adjustment and homogeneous classifications in physical education of Junior High School girls.

5. A comparative study of the personality adjustment and heterogeneous classifications in physical education of Junior High School girls.

6. Case studies of selected girls enrolled in Junior High School in regard to mental ability, personality adjustment and parents' occupations.

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