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THE EFFECTS OF FAMILY STRUCTURE, SOCIOECONOMIC STATUS, AND
PUPIL GENDER UPON CHILDREN'S READING READINESS SCORES

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
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degree of
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BY
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Norman, Oklahoma

1975

THE EFFECTS OF FAMILY STRUCTURE, SOCIOECONOMIC STATUS, AND
PUPIL GENDER UPON CHILDREN'S READING READINESS SCORES

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THE EFFECTS OF FAMILY STRUCTURE, SOCIOECONOMIC
STATUS, AND PUPIL GENDER UPON CHILDREN'S
READING READINESS SCORES

CHAPTER I

INTRODUCTION AND PROBLEM

Introduction

What variables best predict when reading instruction should begin? This question has been a major concern of teachers and reading specialists for fifty years as exemplified by writers such as Dickson, Holms, Witty and Kopel, Betts, Gray, Harris, and Durkin. And for fifty years, investigators in the field of reading education have been trying to devise a combination of variables that would accurately predict achievement in early reading. Such a combination of variables would enable teachers to identify those beginning-first-grade pupils who should succeed in early reading and those who would fail without specific help if reading instruction were begun at a specific point in time.

According to Durkin, the basic interest in the development of measures to predict early reading achievement began in the 1920's with the new enthusiasm for

'objective' measurement in the form of group intelligence tests.¹ Some of the earliest studies of variables for predicting reading achievement were studies to determine the correlation between mental age and reading achievement.² Other studies, such as that reported by Morphett and Washburn also attempted to determine reading readiness by mental age. The Morphett and Washburn study was probably the most influential basis for establishing the 6.5 mental age to begin formal reading that was the criteria for years.³ However, this simple solution--a prescribed mental age at which to begin reading--failed to satisfy educators and the search went on to develop "the" measure to determine readiness for reading instruction.

One of the first efforts to combine variables to predict early reading achievement appeared as the Baltimore Reading Readiness Test reported by Berry.⁴ The development of this test was begun in 1922 and was completed about 1928. The variables combined in this instrument were "word discrimination" ability and "picture

¹Dolores Durkin, Teaching Them to Read (Boston: Allyn and Bacon, 1970), pp. 19-25.

²Francis M. Berry, "The Baltimore Reading Readiness Test," Childhood Education 3 (January 1927): 222-223.

³Mabel V. Morphett and Carlton Washburn, "When Should Children Begin to Read," Elementary School Journal 31 (April 1931): 496.

⁴Berry, p. 223.

identification" ability. During the past fifty years, this small beginning effort has been superseded by a multitude of experimental variable combinations in an effort to predict reading achievement.

During the same time that educators have been experimenting with variable combinations for predicting reading achievement, great changes have been taking place in the structure of American society. Attention to these changes are evident through studies related to the influences of factors such as shifts in minority populations, socioeconomic status, changing gender roles, ethnic value systems, population mobility, and technology.

Concomitant with the changes in structure of society have been changes in family structure. According to Cavan, as the national economy has shifted from rural-agricultural toward urban-industrial, the family organization has moved from an extended structure to a nuclear form.¹ Due to easy mobility, members of the extended family frequently do not live in the same area and therefore no longer influence each other's lives appreciably. The problems caused by rapidly shifting population and the pressures of a more complex society have probably contributed greatly to the increasing number of homes

¹Ruth S. Cavan, The American Family (New York: Thomas Y. Crowell, 1969), pp. 1-67.

broken by divorce.

Recent statistics on divorce indicated that presently one in every three marriages ends in divorce, whereas in 1910 only one in ten marriages dissolved through divorce.¹ At the same time that the divorce rate has been increasing, there has been a corresponding increase in the number of divorced women who remarry.² Studies reported by researchers such as Pecot, Koch, and others indicate that children whose family structure is altered by divorce and remarriage undergo traumatic experiences which logically could alter academic achievement.

Although journals such as Mental Health, Social Work, and others have featured articles which discussed the possible consequences of altered family structure on the academic achievement of pupils, researchers in the field of reading have failed to investigate this variable as a possible determinant of reading readiness and therefore a possible predictor of reading achievement. A review of the research-related literature has revealed a paucity of study given to the influence of family structure upon academic achievement,

¹U. S. Department of Commerce, Bureau of the Census. Statistical Abstract of the United States: 1970, 93rd ed. (Washington: U. S. Government Printing Office, 1972), p. 50.

²U. S. Department of Commerce, Bureau of the Census. United States Census of Population: 1970, Marital Status Final Report PC (2) - 4C. (Washington: U. S. Government Printing Office, 1972), pp. 1-2.

much less the relationship between family structure and reading readiness scores.

The literature is replete with research dealing with the relationships between various sociological factors and academic achievement. However, only a few of these studies have been concerned with family structure and most of those have concentrated on the effects of the absence of the father in minority groups or with comparisons of "broken" homes with "intact" homes. Furthermore, there seemed to be almost total lack of research related to the effects of the restructured family on children's academic achievement. The results reported by the few studies concerned with family structure were varied and far from conclusive. The relationship between family structure and any area of academic achievement, and specifically its relationship to reading readiness, seemed to have been grossly neglected.

The Problem

Statement of the Problem

The problem was to determine whether there were significant differences among mean reading readiness scores of first grade pupils when socioeconomic status, gender, and certain family structures were considered as independent variables. A review of previous studies led the researcher to believe that the influence of these variables

could significantly affect pupils' scores. Therefore, the purpose of the present study was to determine the effects of social and economic conditions, pupil gender, and divorce and remarriage upon reading readiness scores by providing information to answer four questions. 1) Are there significant differences among mean reading readiness scores when pupils are grouped by high, middle, and low socioeconomic status? 2) Are there significant differences among mean reading readiness scores when pupils are grouped by gender? 3) Are there significant differences among mean reading readiness scores when pupils are grouped by intact, divorced, and restructured families? 4) Are there significant differences among mean reading readiness scores when pupils are grouped by the multiple factors of family structure, socioeconomic status, and gender?

The study attempted to determine the amount of variance in the dependent variable (reading readiness score) explained by the three independent variables (family structure, socioeconomic status, and pupil gender). The relationship between the independent variables and the dependent variable was determined by multiple correlation, whereas the differences among mean reading scores were determined by analysis of variance.

Significance of the Problem

At one time or another most teachers have experienced instances where a pupil's progress has suddenly become suspended or has begun to regress rapidly, unaccountably. Often after much probing, it was discovered that family difficulties were being experienced at home--parental loss of job, parental conflict, parental separation, parental desertion, divorce proceedings, parental remarriage, or conflict with stepparent. Pecot attested to this source of disturbance when he suggested that some children enrolled in school may find it almost impossible to devote full energies to the learning process because of pre-occupation with the loss of one or both parents.¹ Ackerman found that children often felt responsible for the divorce of their parents and suffered guilt feelings about the situation.² Likewise, Freudenthal found that children of divorced parents often expressed a sense of failure due to their inability to prevent the family partition.³ Goode stated that when the absence of a parent is caused by divorce, the psychodynamic structure

¹Michael G. Pecot, "When the Parents Are Divorced," Childhood Education 46 (March 1970): 294.

²Nathan W. Ackerman, "Divorce and Alienation in Modern Society," Mental Hygiene 53 (January 1969): 120.

³Kurk Freudenthal, "Problems of the One-Parent Family," Social Work 4 (January 1959): 46.

is further complicated by hostilities and feelings of guilt for hostility, by feelings of abandonment, and by guilt feelings for divided loyalties.¹ Koch concluded, from a study of the influence of broken homes on the anxiety test scores of pre-school children, that children from broken homes were more likely to have adjustment problems than children from homes with both parents present.²

The many studies concerned with the relationship between socioeconomic status and school achievement usually included elements of the pupil's family background. Deutsch used the Illinois Test of Psycholinguistic Abilities to study socio-cultural influences and learning channels. She reported that lower class pupils had more difficulty with subtests involving auditory input channels than with those presenting information visually. She theorized that the social and cultural environment in which an individual lives influences not only what he learns but how he learns.³

Robinson studied reliability of evaluation instruments for disadvantaged, average, and advantaged groups

¹William J. Goode, After Divorce (Glencoe, Ill.: The Free Press, 1956), p. 309.

²Margaret B. Koch, "Anxiety in Preschool Children from Broken Homes," Merrill-Palmer Quarterly 7 (October 1961): 225-232.

³C. Deutsch, "Sociocultural Influences and Learning Channels." In Perception and Reading. Edited by H. K. Smith (Newark, Del.: International Reading Association, 1968), p. 28.

of kindergarten pupils. He reported that the Metropolitan Readiness Test was found to be reliable for disadvantaged and average pupils, but not for the advantaged groups.¹

Macmillan reported that a combination of socioeconomic factors--parent's occupation, family size and organization, preschool experience, pupil gender, and school attendance--were more significant as predictors of school achievement of school beginners than I. Q.'s.²

Harris believed that the best assurance a boy may have of being properly equipped and motivated to get the most from our educational system is parents and grandparents of a socioeconomic group that places high value on education.³

However, as deHirsch pointed out, being both in the average and advantaged groups and scoring well on success predictors does not necessarily mean that a pupil will achieve academic success. There are many variables that

¹H. A. Robinson, "Reliability of Measures Related to Reading Success of Average, Disadvantaged and Advantaged Kindergarten Students," Reading Teacher 20 (March 1966): 203-209.

²Robert W. MacMillan, "A Study of the Effect of Socioeconomic Factors on the School Achievement of Spanish-Speaking School Beginners" (Doctoral dissertation, The University of Texas, 1966).

³Irving D. Harris, Emotional Blocks to Learning (Glenco, Ill.: The Free Press, 1961), p. 13.

could intervene to prevent success; very possibly one of these could be altered family structure.¹

Not only do children tend to suffer traumatic experiences during the process of alteration of family structure, but there are after-effects. Freundenthal pointed out that a child reared in a one-parent family cannot help but notice that children normally live with two parents. Furthermore, this realization often results in a sense of frustration and the child may view his own status as one of deprivation.² Sprey reported, from a survey of research on the single-parenthood phenomenon, that there is little doubt that the simple fact of the absence of one parent affects family functioning in a wide variety of ways.³ Landis expressed the belief that the new status of being the child of divorced parents may necessitate new adjustments with his peer group.⁴

Podolsky pointed out that stepchildren may face, for a time, the same problems faced by children of a

¹Katrina deHirsch; Jeannette Jansky; and William Langford, Predicting Reading Failure (New York: Harper and Row, 1966), p. 39.

²Freudenthal, p. 45.

³Jetse Spray, "The Study of Single Parenthood: Some Methodological Considerations." In The One-Parent Family: Perspectives and Annotated Bibliography. Edited by Benjamin Schlesinger (Toronto: University of Toronto Press, 1969), p. 4.

⁴Judson T. Landis, "The Trauma of Children when Parents Divorce," Marriage and Family Living 22 (February 1960): 7.

one-parent family. In addition they must also adjust to other new conditions. These conditions may result in feelings of insecurity, jealousy toward the stepparent as well as feelings of rejection by the stepparent and the real parent.¹

In general the studies reviewed concerning family structure and academic achievement tended to support the conclusion that altered family structure may cause pupils to experience disturbances, adjustments, and psychological stresses that could conceivably cause academic progress to suffer. In view of the conclusions reached by other researchers investigating the effects of family structure upon academic achievement, investigation of this problem in reference to reading readiness indicated significant productive possibility. Should the differences between the three family structures prove to be significant, it is highly probable that this factor may be a productive variable for consideration in determining reading readiness.

Statement of Hypotheses

In order to make definitive statements and arrive at defensible conclusions, it was necessary to state and test hypotheses. Review of previous research for this study led the researcher to formulate seven alternative

¹Edward Podolsky, "The Emotional Problems of the Stepchild," Mental Hygiene 39 (January 1955): 11-14.

hypotheses each of which was restated in null form for testing. The hypotheses are:

- Ha_{1.0} When pupils are grouped by family structure, differences among mean reading readiness scores will favor pupils from intact, divorced, and restructured families in that order.
- Ho_{1.0} There are no significant differences among mean reading readiness scores when pupils are grouped by family structure.
- Ha_{2.0} When pupils are grouped by socioeconomic status, differences among mean reading readiness scores will favor pupils from high, middle, and low socioeconomic status families in that order.
- Ho_{2.0} There are no significant differences among mean reading readiness scores when pupils are grouped by socioeconomic status.
- Ha_{3.0} When pupils are grouped by gender, differences between mean reading readiness scores will favor girls.
- Ho_{3.0} There is no significant difference between mean reading readiness scores when pupils are grouped by gender.
- Ha_{4.0} When pupils are grouped by family structure and socioeconomic status, differences among mean reading readiness scores will favor pupils from high and middle socioeconomic status, intact families.
- Ho_{4.0} There is no significant interaction effect among mean reading readiness scores when pupils are grouped by family structure and socioeconomic status.
- Ha_{5.0} When pupils are grouped by family structure and gender, differences among mean reading readiness scores will favor girls from intact families.
- Ho_{5.0} There is no significant interaction effect among mean reading readiness scores when pupils are grouped by family structure and gender.

- Ha_{6.0} When pupils are grouped by socioeconomic status and gender, differences among mean reading readiness scores will favor girls from high and middle socioeconomic status families.
- Ho_{6.0} There is no significant interaction effect among mean reading readiness scores when pupils are grouped by socioeconomic status and gender.
- Ha_{7.0} When pupils are grouped by family structure, socioeconomic status, and gender, differences among mean reading readiness scores will favor girls from high and middle socioeconomic status, intact families.
- Ho_{7.0} There is no significant interaction effect among mean reading readiness scores when pupils are grouped by family structure, socioeconomic status, and gender.

Definition of Terms

1. Reading readiness: A level in child development at which a child has attained the skills to begin formal reading instruction.
2. Reading readiness test: A test to determine whether pupils have the skills needed to begin formal reading instruction.
3. Reading readiness score: A composite score calculated on the basis of the number of correct responses on the Metropolitan Readiness Test.
4. Socioeconomic status: A level indicative of the social and economic achievement of individuals or groups determined by a composite score on Hollingshead's Two Factor Index of Social Position.
5. Intact family: A family structure in which both natural parents are present and which has not been

broken by divorce.

6. Divorced family: A family structure in which only one unmarried, natural parent is present.

7. Restructured family: A family structure in which one natural parent and one stepparent is present.

8. Sex: A term meaning "gender" when quoted in studies in this investigation.

Assumptions

1. The score obtained on the Metropolitan Readiness Test was assumed to be valid for each subject.

2. The scores obtained on the Two Factor Index of Social Position were assumed to be valid indicators of socioeconomic status (SES).

3. The subjects were assumed to be representative of the first grade population attending the Midwest City-Del City School System.

4. A lapse of approximately one year was assumed to be sufficient time for pupils to adjust to altered family structure.

5. The final evaluation and the generalizations derived from this study were assumed to be valid only when applied to the school district included in the study or to school districts with comparable pupil populations.

Delimitations of the Problem

1. Subjects were limited to pupils who completed the kindergarten year and took the Metropolitan Readiness Test in the Midwest City-Del City School District.

2. Reading readiness was measured by the composite score on the Metropolitan Readiness Test.

3. Socioeconomic status was measured by the composite score on Hollingshead's Two Factor Index of Social Position.

4. No pupils from Special Education classes were included in the study.

5. Pupils included in the divorced and restructured categories were restricted to those whose family structure had been altered for approximately one year.

6. No pupils from families broken by causes other than divorce were knowingly included in the study.

7. Pupils in the study were restricted to those completing kindergarten during the 1973-1974 school term.

Overview of Subsequent Chapters

Chapter II will present a review of literature and research related to reading readiness, family structure, socioeconomic status and academic achievement, and pupil gender and academic achievement. Specific topics included are:

1. Research studies related to reading readiness tests.

2. Family structure in the United States.

3. Effects of socioeconomic status on academic achievement.

4. Effects of pupil gender on academic achievement.

5. Effects of divorce and one-parent families on children.

6. Effects of parental remarriage on children.

Chapter III will present the design and procedures of the study. Specific topics will include:

1. Setting and Sample.

2. Procedure.

Chapter IV will present the findings of the study.

Chapter V will be concerned with the summary, conclusions, and recommendations of the study.

CHAPTER II

REVIEW OF THE LITERATURE

A review of research and related literature revealed that a very large number of research studies had been done over the past fifty years in attempts to identify variables that efficiently predicted reading achievement. These studies had been reported from the fields of education, psychology, physiology, and sociology, with interdisciplinary approaches often being used. The first studies in reading readiness were reported in 1927.¹ In 1936, Witty and Kopel reported an analysis of 93 studies related to reading readiness.² In 1943, Betts reported a survey of 80 studies.³ Writing for the Encyclopedia of Educational Research, Gray included 37 studies on reading readiness.⁴

¹William S. Gray, "Reading." In Encyclopedia of Educational Research, 3rd ed. Edited by C. E. Harris (New York: Macmillan, 1969), pp. 1086-1155.

²Paul A. Witty and David Kopel, "Preventing Reading Disability: The Reading Readiness Factor," Educational Administration and Supervision 22 (September 1936): 401-418.

³Emmett A. Betts, "Factors in Reading Readiness Test," Educational Administration and Supervision 20 (April 1943): 199-230.

⁴Gray, pp. 1086-1155.

Livo reviewed research on reading readiness and listed a bibliography of 122 studies related to this area.¹ Literature relevant to this study included studies on reading readiness, studies on family structure, effects of socioeconomic status on academic achievement, effects of pupil gender on academic achievement, effects of parental divorce on children, and effects of parental remarriage on children.

Research Studies Related to Reading Readiness Tests

As pointed out by Durkin, interest in reading readiness tests first became apparent in the mid-1920's and has continued to the present.² During this time, the tests have been refined and a great diversity of predictor variables have been evaluated experimentally in search of those that do the most adequate job of predicting reading achievement.

The child entering school brings to this new situation the quality of affect that has nourished him in the past, the environment in which he has grown up, his social, cultural, and economic background, and his cognitive endowment. The trend among researchers toward a more complex approach to the problems of prediction is reflected in a tendency to devise batteries that forecast from a broader basis.

¹Norma J. Livo, Reading Readiness: Research in Review (Bethesda, Md.: ERIC Document Reproduction Service, ED 059 854, 1970), pp. 1-49.

²Durkin, Teaching Them to Read, pp. 19-25.

Most investigators agree that a combination of variables yields a higher level of predictive accuracy than any isolated variable.

Reading readiness tests have been receiving attention in the literature since 1927, with a large majority of the studies supporting the concept that these tests are beneficial in predicting early reading achievement.

Although readiness tests alone are far from perfect means of determining whether a pupil is ready for beginning reading, the use of sufficiently reliable and valid ones is an asset in evaluation. . . . It is probably true that a teacher can learn more about how ready a child is for beginning reading by giving him a reading readiness test than she could learn by spending the same length of time on other means of evaluation. Further value in the use of readiness tests is that the teacher can find them a diagnostic tool by means of which she can plan subsequent work for the child.²

Certainly some aspects of readiness can be measured, but at present no single measure or known combination of measures is fully adequate. Unfortunately no measuring device gives us a complete answer. Betts avers that as yet "No scientist has been able to devise any one single basis for a yes or no answer to the question of when is a child ready for reading." Thus authorities differ somewhat in their recommendations for determining reading readiness.³

Many school systems use reading-readiness tests as another means of appraising prereading ability.

¹Jeannette Jansky and Katrina deHirsch, Preventing Reading Failure (New York: Harper and Row, 1972), p. 24.

²John J. DeBoer and Martha Dallman, The Teaching of Reading (New York: Holt, Rinehart and Winston, 1970), pp. 53-54.

³Henry P. Smith and Emerald V. DeChant, Psychology in Teaching Reading (Englewood Cliffs, N. J.: Prentice-Hall, 1961), p. 110.

These instruments measure many of the same abilities that the teacher appraises in the regular classroom setting. They are not essential to an effective prereading program, but they can be of definite value.¹

Numerous tests have been devised for the sole purpose of appraising readiness for reading. . . . In one or another of these tests, the following abilities are measured: (a) comprehension of spoken directions which are to be followed; (b) knowledge of word meaning; (c) ability to copy visual designs; (d) ability to recognize and interpret pictures; (e) auditory perception: rhyming words, similarities and differences in beginning sounds of words; (f) visual perception: similarities and differences in pictures, geometric designs, letters, and words; (g) ability to name correctly letters of the alphabet and arabic numerals; and (h)² ability to recognize words that have been taught.

Mitchell, studying the predictive validity of the Metropolitan Readiness Test and the Murphy-Durrell Reading Readiness Analysis for Caucasian and Negro pupils, reported that these two tests perform their function equally well with Negro and Caucasian pupils, and that the general level of predictive validity was similar for the Negro, Caucasian, Mexican, and Oriental racial-ethnic groups studied.³ Panther utilized a series of tests to predict first-grade reading achievement on the Metropolitan Achievement Test

¹Margaret G. McKim, Guiding Growth in Reading (New York: Macmillan, 1955), pp. 53-54.

²Miles A. Tinker and Constance M. McCullough, Teaching Elementary Reading (New York: Appleton-Century-Crofts, 1968), pp. 81-82.

³B. C. Mitchell, "Predictive Validity of the Metropolitan Readiness Tests and the Murphy-Durrell Reading Readiness Analysis for White and Negro Pupils," Educational and Psychological Measurement 27 (Winter 1967): 1047-1054.

and reported the Lee-Clark Readiness Test to be the best predictor, with a correlation of 0.66.¹ Silberberg, Iversen, and Silberberg reported that the Gates Reading Readiness Test correlated 0.74 with the Bond-Clymer-Hoyt Developmental Tasks. However, the "Letters and Numbers" subtest alone correlated 0.71, and they recommended the use of this subtest alone as a time-saver.²

Johnson investigated the extent to which the Frostig Developmental Test of Visual Perception, the Gates Reading Readiness Test, the Metropolitan Readiness Tests, the Olson Reading Readiness Tests, and the Wechsler Intelligence Scales of Children (WISC) were effective as predictors of success in first and third grade reading. He reported that the Olson test was the best predictor for first grade pupils, while a combination of the MRT and the WISC was second best.³ Hopkins and Sitkei found that the Lee-Clark Readiness Test scores proved to be as valid predictors of grade-one reading achievement as the California Test of Mental Maturity ($R=.61$) and required considerably less testing

¹Edward E. Panther, "Prediction of First-Grade Reading Achievement," Elementary School Journal 68 (October 1967): 44-48.

²Norman Silberberg; Iver Iversen; and Margaret Silberberg, "The Predictive Efficiency of the Gates Reading Readiness Tests," The Elementary School Journal, 68 (January 1968): 213-218.

³Clifford I. Johnson. Predictive Validity of Selective Reading Readiness Factors (Bethesda, Md.: ERIC Document Reproduction Service, ED 032 195, 1969).

time.¹ In a study comparing the Clymer-Barrett Pre-Reading Battery with the Metropolitan Readiness Test, Johnson reported that the Clymer-Barrett test predicted reading success more accurately than does the MRT.²

Pikulski studied the capability of the Pintner-Cunningham Intelligence Test, Murphy-Durrell Reading Readiness Analysis, and Metropolitan Readiness Tests to predict scores of standardized tests of reading and spelling achievement at the end of sixth grade. He reported that pupils who scored high on the readiness tests continued to score high through the sixth grade. Readiness measures tended to predict both first- and sixth-grade reading achievement better for pupils instructed with an integrated language arts approach than for pupils given basal instruction.³

Although the large majority of studies supported the concept that reading readiness tests were beneficial in predicting early reading achievement, there were authorities and investigators who were skeptical of their value.

¹K. D. Hopkins and E. G. Sitkei, "Predicting Grade One Reading Performance: Intelligence vs. Reading Readiness Tests," Journal of Experimental Education 37 (Spring 1969): 31-33.

²R. E. Johnson, "The Validity of the Clymer-Barrett Pre-Reading Battery," Reading Teacher 22 (April 1969): 609-614.

³John Pikulski, "Predicting Sixth Grade Achievement by First Grade Scores," Reading Teacher 27 (December 1973): 284-287.

There are several basic limitations in the use of most reading readiness tests. First, most tests are limited in the sampling of abilities they include. Some measure only auditory vocabulary; others omit any evaluation of such significant factors as visual or auditory discrimination, articulation, or auditory comprehension. A second common limitation in readiness tests is the tendency to depend upon measures of pre-school learning such as matching or even reading words and letters. Because of this content, many readiness tests are not much more than concealed measures of intelligence determined by sampling the child's preschool learning. Finally, most readiness tests do not yield very accurate predictions of later reading success. Their correlations with reading are usually about 0.5 or 0.6, a relationship which gives a prediction twenty-five to thirty percent better than sheer chance. Is it surprising that careful teacher observation and judgment often yield predictions just as accurate as any readiness tests?¹

Reporting a review of research on reading readiness, Livo reached the following conclusions relative to reading readiness tests:

1. Reading readiness tests are useful in predicting beginning reading success.
2. Reading readiness tests are more useful as predictors when the upper scores and the lower scores are used.
3. The better the teacher adjusts the work to the pupils' special abilities, as revealed by the reading readiness tests, the better the prediction made by the test will be.
4. A combination of reading readiness test scores and mental test scores has greater predictive value for success in beginning reading than either of these two measures alone.

¹George D. Spache and Evelyn B. Spache, Reading in the Elementary School (Boston: Allyn and Bacon, 1969), p. 66.

5. Reading readiness test scores are mildly successful in predicting scholastic achievement in third and fourth grade.¹

Family Structure in the United States

During the past seventy-five years the structure of families in the United States has changed markedly. As pointed out by Cavan, industrialization and population mobility have been instrumental in changing family structure from an extended form to a nuclear one.² Industrialization brought about increased self-sufficiency, making it possible for both individuals and nuclear families to live without reliance upon extended-family units. Increased mobility has brought about anonymity which has in turn weakened traditional social control formerly exercised by relatives and community members. With increasing remoteness of extended-family ties came less regard for traditions and the opinions of others. Social changes have resulted in more liberal attitudes toward divorce, with some states providing for no-fault divorces in their codes.³

¹Livo, p. 4.

²Cavan, pp. 1-67.

³"No Fault Divorces--They're Catching on," U. S. News and World Report, June 4, 1973, p. 41.

Blood provided more insight into the effects of change.

In countries which traditionally tabooed divorce (especially Western "Christian" countries), that taboo was heavily supported by rural social pressure. The rise of cities offered divorced people a place to escape the critical eye of their neighbors. A later consequence was the gradual relaxation of social criticism of divorcees in the urban environment even when the individual's marital status was known. With the weakening of the ban on divorce, being known as a divorced person became socially tolerable and even socially accepted.¹

In general the number of divorces per 1,000 marriages has been rising since about 1875.² In 1910, the divorce rate was 0.9 per 1,000 whereas the marriage rate was 10.3. By 1971, the divorce rate had risen to 3.7 per 1,000 while the marriage rate was 10.6.³ Fluctuations in the divorce rate occurred periodically. For example during the Great Depression, the divorce rate dropped from 8.0 to 6.1. On the other hand the divorce rate had risen sharply after every major war since the Civil War. The divorce rate was 18.2 the first year after World War II.⁴ By 1958

¹Robert O. Blood, Jr. The Family (New York: The Free Press, 1972), p. 137.

²Robert O. Blood, Jr. Marriage (New York: The Free Press, 1969), p. 379.

³U. S. Bureau of the Census, Statistical Abstract of the United States: 1970, p. 50.

⁴Paul H. Jacobson, American Marriage and Divorce (New York: Rinehart and Company, 1959), pp. 91-93.

the rate began to increase again and by 1965 stood at 10.6 and has continued to rise since.¹

Another way to view the divorce situation in the United States was presented by Martinson:

Divorces have generally declined in times of economic depression and risen during times of prosperity. The divorce rate per 1,000 females aged fifteen years and over--the most sensitive rate--reached a peak of 8.0 per 1,000 in 1929. In the fall of that year the stockmarket crash signaled the beginning of an economic depression. The divorce rate dropped to its lowest point (6.1) in the forty-year period of 1920-1960 during the depression years of 1932-1933. Following the depression, the rate of divorce moved upward almost steadily until the first post-war year, 1946, when the rate reached the alltime high of 17.9 per 1,000 married females fifteen years of age and over. After 1946 the rate dropped steadily; the nation had returned to more normal living conditions for the majority of its people. The divorce rate showed considerable stability during the fifteen years 1950-1964 with slight declines during the economic recession years of 1954 and 1958. The rate of divorce for the decade of 1950-1960 was less than one for every one hundred married couples. Of males fourteen years of age and over in the United States in 1960, 1.9 percent were divorced; the comparable figure in March, 1967, was 2.1 percent. For women 2.6 percent of those fourteen years of age and over in 1960 were divorced and 3.2 percent in March 1967.²

The average age at marriage in the United States is the youngest in the Western world. Fifty percent of the women who will marry do so before their twenty-first

¹Hugh Carter and P. C. Glick, Marriage and Divorce: A Social and Economic Study (Cambridge, Mass.: Harvard University Press, 1970), p. 56.

²Floyd M. Martinson, Family in Society (New York: Dodd, Mead, and Co., 1970), p. 331.

birthday and 50 percent of the men who will marry do so before their twenty-third birthday.¹

Early age at marriage seems to have a direct relation to divorce as noted by Martinson.

The peak year in divorces in America was in 1946 when there were 610,000 divorces. From 1950 to 1960 the annual number of divorces remained under 400,000 per year. One change over the years has been a much heavier concentration of divorce in the early years of marriage than was previously true.²

Reiss and Bell also noted the relationship between early age at marriage and divorce rate.

Within the United States it seems that teen-age marriage goes with high divorce rates. For the years 1960-1963, women under the age of 20 comprised in excess of 47 percent of the females divorced.³

There is evidence that a very young age at marriage is related to young age in divorce. Glick (1964, p. 152) writes that "the youngest women at separation or divorce are those who left high school before graduation. These women are eight or nine years younger at the time when their marriages are broken, on the average, than college graduates who become separated or divorced." The combination of a very young age at marriage and low education level characterizes a social group with a high divorce rate.⁴

¹Ira L. Reiss, The Family System in America (New York: Holt, Rinehart and Winston, 1971), p. 288.

²Martinson, p. 346.

³Reiss, p. 288.

⁴R. R. Bell, Marriage and Family Interaction (Homewood, Ill.: The Dorsey Press, 1971), p. 502.

The actual number of persons who are divorced or have been divorced adds to the picture of family structure in the United States. In 1970, there were 1,926,597 males fourteen years old and older, who were classified as divorced, whereas 7,135,500 were known to have been divorced. Of the female population fourteen years old and older, 3,004,278, representing 3.9 percent, were divorced; 8,645,000, representing 11.1 percent, were known to have been divorced.¹

Although people often view the divorce rate in the United States with alarm because of the children involved, some sociologists reassure us that the situation is not as bleak as the statistics would have us believe.

While these figures are disconcerting, the current level of divorces is more than a third below the peak level of 1946. Moreover, the oft-quoted figure of "one marriage in four" ending in divorce is misleading in that it relates current divorces to current marriages whereas current divorces occur to marriages that took place at any time to still-living persons. A more adequate or sensitive measure is the divorce rate per 1,000 married females aged 15 years and over, which has been under 10 (or one percent) each year since 1953. In terms of married couples,² only one in every 109 obtained a divorce in 1960.

¹U. S. Bureau of Census, United States Census of Population: 1970. Marital Status Final Report PC (2) - 4C, pp. 1-4.

²Hugh Carter and Alexander Plateris, "Trends in Divorce and Family Disruption." In Perspectives in Marriage and the Family. Edited by J. R. Eshelman (Boston: Allyn and Bacon, 1969), p. 714.

Divorce rates in the United States are not higher than anywhere else in the world. No other large nation reports a higher rate, but higher rates are reported by smaller countries, especially those in which men are permitted divorce of their wives by a simple statement with a minimum of legal proceedings.¹

A comparison of divorces to marriages is still another way to view family structure in the United States. Although the marriage rate has remained fairly constant, the divorce rate has increased significantly. For example, in 1910 the marriage rate was 10.3 per 1,000, and in 1971 the rate was 10.6. By contrast, in 1910 the divorce rate was only 0.9, whereas the divorce rate was 3.7 in 1971.²

Compared with national averages, Oklahoma ranked high in the rates of both marriage and divorce. In 1970 the marriage rate for Oklahoma was 15.2 per 1,000, as compared to 10.7 for the nation. In 1969, Oklahoma ranked second in the nation in divorces with a rate of 6.1 compared with national rate of 3.2.³

Divorce in the United States does not affect adults only. Although sociologists varied somewhat in the statistics quoted, they generally agreed that approximately 60 percent

¹Jerome D. Folkman and Nancy M. Clatworthy, Marriage Has Many Faces (Columbus, O.: Charles E. Merrill, 1970), p. 390.

²U. S. Bureau of Census, Statistical Abstract of the United States: 1970, p. 50.

³Ibid., p. 64.

of all divorces granted in the United States involve children.

The great majority of adults in the United States are married, but each year a substantial number of marriages end in divorce. The more than 390,000 divorces in 1960 vitally affected the lives of 780,000 adults and their 460,000 children--in many instances permanently.¹

More and more couples who become divorced have children, hence many children are affected . . . by divorce. Children are affected when marriage is broken. In 1960 there were almost three million children with separated or divorced parents.²

The question of the number of children involved in divorce can be easily answered. . . . The number of children involved in divorce has increased from 1.86 in 1953 to 2.16 in 1963, a rate much more rapid than that of divorce itself. Almost 60 percent of divorces now involve children, and often more children per family than before. In 1968 over 700,000 children were involved in divorce decrees.³

Reinhart noted that 60 percent of all divorces affect very young children since divorce occurs most frequently within the first six or seven years of marriage.⁴ The U. S. Bureau of Census reported that on the

¹Carter and Plateris, p. 714.

²"Marriage and the American Woman," Population Profile (June 1963): 5.

³Reiss, p. 297.

⁴John B. Reinhart, "Divorce: Its Effects on Children," P. T. A. Magazine, October 1972, p. 12.

average there were 1.31 children per divorce granted in 1969.¹ According to Garai, in 1973 there were 1.5 million families broken by divorce. These families involved a total of some four million children.² Carter and Glick reported that there were more than 650,000 children under age of 18 involved in divorces in the year 1966 alone.³ For 1970 the U. S. Bureau of Census listed 1,384,492 children between six and thirteen years of age living with a divorced parent. The great majority of these children (1,264,555) lived with the divorced mother, while only a minority (119,937) lived with the divorced father.⁴

A number of sociologists pointed to the relationship between family structure and socioeconomic status. Sussman attributed the following attributes of class difference in family stability to Hollingshead:⁵

¹U. S. Bureau of Census, Statistical Abstract of the United States: 1970, p. 1.

²Josef E. Garai, "Children of Divorce: Healing Their Special Hurt," Parents Magazine and Better Family Living, March 1973, pp. 47-64.

³Carter and Glick, p. 254.

⁴U. S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970. Subject Reports. Final Report PC (2) - 4C. Persons by Family Characteristics (Washington: U. S. Government Printing Office, 1973), p. 1.

⁵Marvin B. Sussman, Sourcebook in Marriage and the Family (Boston: Houghton Mifflin, 1963), p. 255.

Family control of mate selection is perhaps the most important determinant of family stability among the upper class. At the middle levels, conformity to class pressures, self-discipline, moral emphasis in marriage, submission to the demands of the job, and ready acceptance of geographic and social mobility as a necessary part of middle-class life minimize family instability among its members. Within the working classes, family instability increases (it is twice as frequent as in the middle class) over the higher classes. Here it is the result of stressful conditions under which these families have to live. Instability is greatest among the lower classes; it is believed to be mainly due to economic insecurity.¹

Carter and Plateris also made reference to class differences and family stability.

Kephart compared Philadelphia divorce records and the occupations of the divorced husbands with the distribution of occupations for men in Philadelphia as recorded in the decennial Census. He found the upper occupational levels of professional and managerial groups to be under-represented, i. e., had the lowest divorce rates. The semiskilled occupations were over-represented and had the highest divorce rates. The middle occupational groups--craftsmen, foremen, clerical, and sales--were represented in about the expected numbers on the basis of population. There was thus evidenced a tendency for the divorce rate to fall as one moved up the occupational scale.²

Goode summarized several special studies . . . concerning occupation and economic position in society. He concluded that there is a rough inverse correlation of economic position and a

¹August B. Hollingshead, "Class Differences in Family Stability," The Annals of the American Academy of the Political and Social Science (1950): 39-46.

²Carter and Plateris, pp. 726-727.

tendency to divorce--the tendency to divorce is highest in groups with low occupations and low income and is lowest in high occupation and high income groups.¹

Folkman and Clatworthy stated:

Death and divorce have certain characteristics in common; both threaten the families of racial minorities and lower occupational levels more than white, middle-class families.²

Glasser and Navarre provided more information about the one-parent family and socioeconomic factors.

One-parent families are far more apt to be poor than other families. This is true for one-fourth of those headed by a woman. Chilman and Sussman (1964, p. 391-395) summarize that data in the following way: "About ten percent of the children in the United States are living with only one parent, usually the mother. Non-white children are much more likely to live in such circumstances, with one-third of them living in one-parent families. Two-and-a-quarter million families in the United States today are composed of a mother and her children. They represent only one-twelfth of all families with children but make up more than a fourth of all that are classed as poor. Despite the resulting economic disadvantages, among both white and non-white families there is a growing number headed only by a mother. By 1960 the total was 7½ percent of all families with own children rather than the 6 percent of ten years earlier. By March, 1962, the mother-child families represented 8½ percent of all families with own children."³

¹Ibid.

²Folkman and Clatworthy, p. 302.

³Paul Glasser and Elizabeth Navarre, "Structural Problems of the One-Parent Family." In Perspectives in Marriage and the Family. Edited by J. R. Eshelman (Boston: Allyn and Bacon, 1969), p. 655.

Sociologists also called attention to class differences in family structure. Schneider and Smith stated in reference to the lower class:

One thing that is abundantly clear is that the marital relationship is not the basis of family structure in the way it is for the middle class, and that marital disruption does not give rise to a broken home. A broken home in a lower class would be one in which a mother abandoned her children, leaving them to be taken care of by the father.¹

Folkman and Clatworthy pointed out that in lower socioeconomic levels, marriages are less stable whether they are original or whether they are remarriages.²

Remarriage is another facet of family structure in the United States. Sociologists estimate that 90 percent of all divorcees remarry. In 1900, about 80 percent of all stepfamilies in the United States existed because of death. By 1966, the situation had changed drastically and more than 80 percent of the stepfamilies were the result of divorce.³

Blood stated that three-fourths of all divorced men in the United States eventually remarry, whereas two-

¹David M. Schneider and Raymond T. Smith, Class Differences and Sex Role in American Kinship and Family Structure (Englewood Cliffs, N. J.: Prentice-Hall, 1973) p. 95.

²Folkman and Clatworthy, p. 412.

³Helen Thomson, The Successful Stepparent (New York: Harper and Row, 1966), p. 1.

thirds of all divorced women remarry.¹ Since 60 percent of all divorces involve children, and large percentages of all divorcees remarry, logically a large number of remarriages involve children. LeMasters estimated that there were approximately seven million stepchildren in the United States in the 1960's.²

The U. S. Bureau of the Census reported that in 1970, 16.1 percent of the adult males in Oklahoma were remarried and living with their spouse. For the adult female population in Oklahoma, 13.0 percent were reported to be remarried and living with their spouse. No information was available to indicate the number of stepchildren involved in these families.³

The information presented in the literature indicated that both divorce and remarriage are increasing within the United States and is affecting increasingly more children each year.

¹Blood, Marriage, p. 39.

²E. E. LeMasters, Parents in Modern America: A Sociological Analysis (Homewood, Ill.: The Dorsey Press, 1970), p. 172.

³U. S. Department of Commerce, Bureau of the Census, United States Census of Population: 1970. General Social and Economic Characteristics. Final Report PC (1) - C38 Oklahoma (Washington: U. S. Government Printing Office, 1972), pp. 472-473.

Effects of Socioeconomic Status on Academic Achievement

The importance of the influence of pupils' socioeconomic status (SES) upon their learning to read is hardly questioned by today's educators.

Exceptionality caused by socioeconomic differences has become a major consideration in today's schools. Many educators believe that the child's economic background and the resultant social position he attains has much to do with his self-concept, his mental development, and consequently with his success in learning to read.¹

Although high socioeconomic status is not a completely accurate indicator of reading achievement, it generally goes hand in hand with broadness of experience and with language facility. This broadness of experience and the added language facility result in superior readiness for reading by equipping the child with the tools for meaningful reaction to the printed page.²

Socioeconomic class is considered to be the most important single factor in reading progress in school. A national survey of elementary teachers permitted the classification of classrooms according to parental income and occupation. The data of the study indicated that reading retardation below expected grade norms rises steadily through the first six grades for working-class children, and markedly so for the children of the lower-skilled, lower-paid working class. By the fourth grade about half of the classrooms of lower-class children show a degree of retardation as much as one year below grade level. The converse of this is also present in that upper-class children tend to

¹Daisy M. Jones, Teaching Children to Read (New York: Harper and Row, 1971), p. 262.

²Emerald V. Dechant, Improving the Teaching of Reading (Englewood Cliffs, N. J.: Prentice-Hall, 1970), pp. 41-42.

become advanced in reading from the first grade and maintain this academic advantage.¹

There doesn't seem to be much doubt that the language patterns of children from low socioeconomic groups vary significantly from those of children who come from higher income families. It is possible that for the former group oral language plays a greater role in causing difficulty in reading. Some feel that these children cannot cope with the language used in school, and as a result their reading achievement is adversely affected. . . . There is no question that larger percentages of these children fail in beginning reading than children from higher socioeconomic levels.²

The educational problems of the culturally deprived or disadvantaged stem from their experiences in homes which do not transmit the cultural patterns necessary for adjustment to the middle-class school and society. Many deprived students come from homes in which the educational levels of the adults is minimal at best. Many come from homes characterized by poverty, large family size, broken homes, and slum living.³

The recognition of the importance of socioeconomic status as a factor in reading readiness and achievement was further attested to by the number of research studies that have included socioeconomic status as a variable. Almost exclusively, research studies including this variable have indicated significant differences between various socioeconomic groups on reading readiness and achievement.

¹Spache and Spache, p. 24.

²Robert Karlin, Teaching Elementary Reading (New York: Harcourt Brace Jovanovich, 1971), pp. 83-84.

³Karl C. Garrison and Robert A. Magoon, Educational Psychology: An Integration of Psychology and Educational Practices (Columbus, Ohio: Charles E. Merrill, 1972), pp. 134-135.

Goldberg investigated factors affecting educational attainment in depressed urban areas. He reported that when ability and achievement test scores of lower- and middle-class pupils were compared, usually pupils from higher income families scored higher on all cognitive measures, even when the instruments are considered to be "culturally fair".¹ In analyzing the data reported in the Coleman Report (1966) Moynihan found that variations in family background accounted for far greater variation in school achievement than did variations in school characteristics.²

Gredler analyzed the performance on a perceptual test by Negro and Caucasian pupils from disadvantaged environments. He reported that on the Metropolitan Achievement Test, both groups scored below the norm, but there was no significant difference between the sample groups of Negro and Caucasian. He concluded from the results of the analysis that the environment influenced both school achievement and the manner in which an individual reacted to specific tasks.³

¹M. L. Goldberg, "Factors Affecting Educational Attainment in Depressed Urban Areas." In Education in Depressed Areas. Edited by A. Harry Passow (Columbia University: Teachers College Press, 1963), pp. 173-178.

²Daniel P. Moynihan, "Sources of Resistance to the Coleman Report," Harvard Educational Review 38 (Winter 1968): 33.

³G. R. Gredler, "Performance on a Perceptual Test with Children from Culturally Disadvantaged Background." In Perception and Reading. Edited by Helen K. Smith (Newark, Del.: International Reading Association, 1968), p. 284.

Ho and Eiszler, studying the interaction effects of socioeconomic status, intelligence, and reading programs on beginning reading achievement, found no significant interaction at first grade.¹ Deutsch investigated the role of social class in language development and cognition. He found that lower-class pupils, Negro and Caucasian, compared with middle-class pupils are subject to what he calls a "cumulative deficit phenomenon," which takes place between the first and fifth grade years. Though there are significant socioeconomic and race differences seen in measured variables at the first grade level, he believed that it is important to note that they become more marked as the pupil progresses through school. Deutsch also reported that all significant relationships were between poorer performance and lower-class status.²

The culturally disadvantaged child is of no particular race. He has experienced failure and the resulting anxiety and fear that continued failure engenders.

¹Ho, Wai-Ching and Charles F. Eiszler, Interaction Effects of Socio-Economic Status, Intelligence, and Reading Program on Beginning Reading Achievement (Bethesda, Md.: ERIC Document Reproduction Service, ED 039 114, 1970).

²Martin Deutsch, "The Role of Social Class in Language Development and Cognition," American Journal of Orthopsychiatry 35 (January 1965): 78-87.

His retardation in language development shows in his reluctant use of words representative of school culture, in forming a smaller proportion of structurally mature sentences, and in learning less from what he hears than other children. In consequence, these children are ill-prepared to meet the demands and opportunities of contemporary life.¹

Effects of Pupil Gender on Academic Achievement

Educators have noted for a long time that girls have an advantage over boys in the early school years. This was attested to by most authorities in the field of reading.

Teachers have always been concerned with differences in achievement among boys and girls. One of the more obvious differences is in readiness for and achievement in reading. Girls as a group achieve better than boys in reading. They learn to read earlier, and fewer of them are significantly retarded in reading. They generally seem to perform better than boys in English usage, spelling, and handwriting.²

There is plenty of evidence that girls mature linguistically younger than boys and that the vast majority of cases in remedial reading clinics are boys. . . . One cannot generalize on sex as a basis for deciding on readiness. All one can conclude from the statistics is that, other things being equal, one can expect more immaturity in the reading act among boys than among girls. But great caution must be exercised in generalizing. Each case must be judged on its own.³

Most studies report that girls are ready to read earlier than are boys and that they retain this advantage through the lower grades. Stanchfield (1971) found poorer listening habits and greater difficulty

¹Tinker and McCullough, p. 100.

²Dechant, p. 98.

³Jones, p. 44.

with auditory discrimination in boys. Whether these differences are culturally determined, whether they are related to psychodynamic factors, or whether they result from the slower¹ maturational rhythm of boys has not been resolved.

A majority of the research studies related to reading readiness conducted in recent years have included pupil gender as a variable. Gates studied results from more than 13,000 pupils in grades two through eight, each of whom had taken all three forms of the Gates Reading Survey Tests. Mean raw scores for girls were higher than those for boys throughout the grades, and most of the differences were significant. Gates also found greater variability among boys, with more boys scoring at the bottom of each grade group.²

Balow studied the role of gender in first-grade reading. He reported that girls scored significantly higher than boys on both the Gates Reading Readiness Test and Gates Primary Reading Tests.³ Dizney and Fleming, using gender groupings to analyze the use of intelligence scores to predict school achievement, reported that differences did

¹Jansky and deHirsch, p. 4.

²Arthur I. Gates, "Sex Differences in Reading Ability," Elementary School Journal 61 (May 1961): 431-434.

³O. Balow, "Sex Differences in First Grade Reading," Elementary English 49 (March 1963): 303-312.

exist between the correlation coefficient for the two groups.¹

In a review of research on gender differences in reading achievement, Weintraub reported that while some evidence collected at the end of first grade indicated that there were few or no gender differences in reading achievement, there was a preponderance of data indicating that girls attained better scores than boys on reading achievement tests.² As one of the findings of the First Grade Studies, Spache et al. reported that differences in achievement favored girls at all levels in the Caucasian control population, and tended to favor girls at the lower levels in the Experimental population.³ deHirsch et al. found that most kindergarten tests utilized in their study were better predictors of first grade achievement for girls than for boys.⁴

Iversen, Silberberg, and Silberberg conducted a study of gender differences in knowledge of letter and number names in kindergarten. They found that boys and

¹H. Dizney and E. Fleming, "Sex and I. Q. Differences in Discrepancies Between Predicted and Obtained Achievement," Journal of School Psychology 3 (1964): 26-31.

²Samuel Weintraub, "What Research Says to the Reading Teacher: Sex Differences in Reading Achievement," The Reading Teacher 20 (November 1966): 155-163, 165.

³George D. Spache et al., "A Longitudinal First Grade Reading Readiness Program," The Reading Teacher 19 (May 1966): 580-584.

⁴deHirsch et al., p. 94.

girls knew number names equally well, but that girls knew significantly more letter names than boys.¹

McNinch investigated the relationship between selected perceptual factors and measured first grade reading achievement. He reported that boy vs. girl comparisons on thirteen prereading variables and five reading variables produced nonsignificant t-ratios. However, in cases, a trend of female superiority was noted but statistical significance was not reached.²

Bilka conducted a study to determine how well reading achievement could be predicted by certain standardized reading readiness tests and an intelligence test, and also to determine if the predictive ability was influenced by gender, mental age, or method of instruction. She found the Murphy-Durrell Diagnostic Reading Readiness Test to be the more accurate predictor for boys, while the Metropolitan Readiness Tests were reported to be the more accurate predictor for girls.³

¹Iver A. Iversen, Norman E. Silberberg, and Margaret C. Silberberg, "Sex Differences in Knowledge of Letter and Number Names in Kindergarten," Perceptual and Motor Skill 31 (August 1970): 79-85.

²George H. W. McNinch. The Relationship Between Selected Perceptual Factors and Measured First Grade Reading Achievement (Bethesda, Md.: ERIC Document Reproduction Service, ED 047 899, 1971).

³Loisann Pfeifer Bilka. An Evaluation of the Predictive Value of Certain Reading Readiness Measures As Related to Method of Instruction, Sex, and Mental Age (Bethesda, Md.: ERIC Document Reproduction Service, ED 053 869, 1971).

Henderson and Long reported that boys scored lower than girls on correlates of reading readiness among children of varying backgrounds.¹ Gruen tested a number of perceptual-motor tests as predictors of first and third grade reading achievement and reported a different prediction equation for boys and girls.²

The data presented in the literature indicated that girls can, in general, be expected to surpass boys in reading in the early grades. Superior achievement in early reading indicated probably greater readiness for reading on the part of girls.

Effects of Divorce and One-Parent Families on Children

The social expectations of family structure in the United States was aptly described by Sussman.

In our society it is believed important to maintain the nuclear family of procreation intact. The family of mother and father living together with their offspring is construed to be ideal for the happiness of every member and to increase the probability of developing character and appropriate personality characteristics in children.³

Although Americans generally view the United States divorce rate with alarm, sociologists reassure us that

¹Edmond H. Henderson and Barbara H. Long. Some Correlates of Reading Readiness Among Children in Varying Background (Bethesda, Md.: ERIC Document Reproduction Service, ED 023 535, 1970).

²Ronald S. Gruen. Prediction of End-of-Year Reading Achievement for First and Third Grade Pupils (Bethesda, Md.: ERIC Document Reproduction Service, ED 069 751, 1971).

³Sussman, p. 248.

when the rate is compared to other nations it assumes another proportion.

Remarkably, most societies have a divorce rate exceeding that of the United States, although the United States divorce rate is one of the highest if only "Westernized" countries are considered. Instability of marriage seems to be a prevalent pattern all over the world¹

Even though sociologists reported that the divorce rate in the United States was less than that for many other countries, this does not change the fact that many American children are subjected to traumatic experiences because of divorce. Carter and Plateris called attention to the rising number of children involved in divorce proceedings in the United States.

The number of children under 18 years of age of divorcing couples has risen in recent years, in 1960 more than 460,000 children were involved. The number has been increasing despite the relative stability of the number of divorces because both the proportion of couples with children and the average number of children per divorce has been rising. In recent years, in reporting states, about one-half of the divorced couples had no children under 18 years of age, while the other half had a varying number of children, up to eight or more. In 1959, 15 percent of the divorcing couples had 3 or more children. For the United States, in 1960, 57 percent of the divorcing couples had children under 18 years of age. . . . The average number of children per divorce in 1960 was 1.18.²

Data on divorce indicated that since World War II there has been a growing proportion of divorces involving

¹Folkman and Clatworthy, p. 17.

²Carter and Plateris, pp. 722-723.

children. In 1940, prior to World War II, 36 percent of divorces involved children; by 1945, children were involved in 41 percent of the divorces issued; in the period from 1945 to 1955, the figure rose steadily to 47 percent. There were no indications of a reversal in trend after 1955.¹ Some sources estimated that in excess of 8.5 million children under eighteen years of age or 13 percent of the national total lived with single parents--divorced, separated, widowed, unwed mothers, or bachelor fathers.²

According to Ploscowe a large percentage of children of divorce were very young.³ This was also supported by Bell who stated that "because divorce tends to occur early in marriage, it means that when children are involved they are often very young. The indications are that about two-thirds of the children affected by divorce are under 10 years of age."⁴ In this respect Bell stated further:

¹Bernard Farber, Family Organization and Interaction (San Francisco: Chandler Publishing Co., 1964), p. 115.

²"Rising Problems of Single Parents," U. S. News and World Report, July 16, 1973, p. 32.

³Morris Ploscowe, "Who Gets the Children." In Marriage and Family in the Modern World: A Book of Readings. Edited by Ruth S. Cavan (New York: Thomas Y. Crowell, 1969), p. 505.

⁴Bell, p. 505.

The length of marriage prior to divorce is related to whether or not children are involved. For example, in 1961, the median duration of marriage with no children under 18 years of age was 4.7 years, those with one child 5.9 years, those with two children 8.9 years, and those with three or more children 12.1 years. The fact that a majority of divorces do not involve children is due to the heavy concentration of divorces in the early years of marriage.¹

Even though in some instances children may actually benefit from parental divorce, in general, the literature supported the assumption that a child's life is likely to be fuller in the presence of two parents. According to Herzog and Sudia, "Evidence supports the generalization that a really 'good' two-parent home is likely to be more favorable to a child's happiness and development than a one-parent home."² Friedman believed that the intact two-parent family is usually considered to be more stable and desirable of the family types, but that it should be remembered that family content is a more decisive factor than structure.³ Goode supported this position by stating:

At every developmental phase of childhood, the child needs the father (who is usually the absent partner) as an object of love, security, or identification, or even as a figure against whom to rebel safely. This is the case for both boys and girls. It

¹Ibid.

²Elizabeth Herzog and Cecelia Sudia, "Families Without Fathers," Childhood Education 48 (January 1972): 175.

³Robert Friedman, Family Roots of School Learning and Behavior Disorders (Springfield, Ill.: Charles C. Thomas, 1973), p. 72.

would be surprising if the absence of the father had no effect on the child. When the absence of the parent is caused by divorce and not death, the psychodynamic structure is further complicated by hostilities, and guilts for hostility, by feelings of abandonment, and by guilts from divided loyalties.

Sociologists devoted considerable study to the social and economic effects upon families when divorce occurs.

From the beginning to end, poor people fight a losing battle with respect to marriage and family life. They can hardly afford to get married in the first place, to have as many children as they would like, or to keep their grown children with them in societies which cherish extended families. On the other hand, they find it difficult to resist external encroachments on their autonomy and the internal corrosion which comes with personal disappointment and with disillusionment in the man's income-producing role. No wonder, then their families are unstable.² They lack the economic prerequisites for stability.

One-parent families constitute more than a fourth of that group classified as poor, and are growing in number. Family structure is seen as a variable intervening between the opportunity system and the socialization process. The task, communication, power, and affectional structure within the nuclear group are influenced by the absence of one parent, and the family's ability to fulfill its social and personal functions may be adversely affected. Some of the consequences of this deviant family structure seem related to both the evolvement of low socioeconomic status and its continuation from one generation to the next.³

Sociologists also called attention to the financial consequences of divorce upon children.

¹Goode, After Divorce, p. 309.

²Blood, The Family, p. 49.

³Glasser and Navarre, p. 462.

For couples with children, most divorce decrees require support payments from the father until the children reach maturity or the mother remarries. Like many other provisions of the divorce law, this is widely violated. . . . When weak enforcement is combined with the poverty of many of these fathers, a large proportion of children fail to receive the support they might have expected.¹

Goode reported that the income for the family remaining after a divorce was markedly reduced, and therefore the household often or usually moved.² In this respect, Blood stated:

Despite the fact that men are legally bound to make these support payments, the obligation is widely evaded. As a result, a mother who gains custody of her children usually carries a heavy financial burden as well as the other responsibilities which go with heading a family alone.³

Glasser and Navarre pointed out a probable reduction in level of personal care that the child may receive because of living in a one-parent home.⁴

The plight of divorced mothers in trying to supplement the one-parent family income after divorce was also illustrated by Glasser and Navarre.

Females are often lacking in skills and experience in the economic world, and frequently receive less pay and lower status jobs than men with similar skills. The probability of lower income and lower occupational status for the female headed household are likely to lower the family's social position in a society which bases social status primarily upon these variables. If the family perceives a

¹Blood, The Family, p. 101.

²Goode, After Divorce, p. 230.

³Blood, The Family, p. 605.

⁴Glasser and Navarre, p. 454.

great enough distance between its former level and that achieved by the single parent, it is possible that the family as a whole may become more or less anomic, with serious consequences in the socialization process of the children and in the remaining parent's perception of personal adequacy . . . the possible drop in social status . . . may isolate the family from its own peer group and place them among a group with which they cannot or will not communicate freely.¹

The age of the mother at the time of divorce also seemed to affect children.

Although available evidence is rather indirect, it suggests that if the mother is divorced when she is too young to bear the strain, her children suffer from reduced self-esteem.

Rosenberg (1965, p. 105) found the same relationship between early loss of the spouse and damage to the child's self-esteem among children of widows as well. For both young widows and young divorcees loss of the spouse means that the mother is saddled with a young child who is all burden and no help. . . . If immature mothers are overloaded despite the aid of husbands, how much more may this be expected for those with no husband to assist them or to support them financially and emotionally.²

In addition to the contributions of sociologists in providing information about family structure and the consequences of divorce, other studies more directly related to the effects of divorce upon children were found. Although a relatively few of the studies were concerned with primary children, they nevertheless provide some insight into the possible effects of divorce upon children.

Koch studied the influence of broken homes on the

¹Ibid.

²Blood, The Family, pp. 604-605.

anxiety test scores of pre-school children. She found that children from broken homes were more likely to have adjustment difficulties than children from homes with both parents present.¹

A study done by Rosenberg indicated that the emotional disturbance of children is more likely when the child is Catholic or Jewish, the mother young, and when the mother had remarried.² McCord, McCord, and Thurber conducted a study of the effects of paternal absence on male children. They reported that female-aggressive behavior appeared to be produced by paternal absence if the boy was between six and twelve years of age when the father left.³

Crescimbeni studied the effects of family disorganization on the academic achievement of elementary pupils from divorced, separated, deserted, and intact families over a two-year period. The results indicated a significantly lower score on the Metropolitan Achievement Test for pupils from one-parent families than for pupils

¹Koch, pp. 225-232.

²Morris Rosenberg, "The Dissonant Religious Context and Emotional Disturbance," American Journal of Sociology 68 (July 1962): 1-10.

³Joan McCord, William McCord, and Emily Thurber, "Some Effects of Parental Absence on Male Children," Journal of Abnormal and Social Psychology 64 (May 1962): 368-371.

from two-parent families. Crescimbeni also found that pupils in the "divorced-separated-deserted" category had a lower achievement mean than pupils in the "death" category.¹

Shelton investigated the difference in educational achievement between junior high pupils from broken and intact homes. He reported a significant difference in mean scores of academic grade-point averages between one-parent and two-parent groups that favored the two-parent group. He concluded that pupils who experienced a broken home condition during the early primary grades tended to be the most adversely affected in their educational achievement.²

Wohl studied the effects of a mother-only home on the school achievement and adjustment of elementary grade pupils. He concluded that achievement test scores of children from the intermediate grades are not related to the number of parents in the home.³

¹Joseph Crescimbeni, "The Effects of Family Disorganization on Academic Achievement of Pupils in the Elementary School" (Doctoral dissertation, University of Connecticut, 1964).

²L. Austin Shelton, "A Comparative Study of Educational Achievement in One-Parent Families and in Two-Parent Families" (Doctoral dissertation, University of South Dakota, 1968).

³Jonathan Wohl, "A Study of the School Achievement of Children from One-Parent Homes" (Doctoral dissertation, University of Southern California, 1962).

Writing in reference to families without fathers, Herzog and Sudia stated that there seemed to be little basis for the belief that a father's absence is likely to depress a child's academic performance.¹ However, according to Moynihan, the Coleman Report showed a positive relationship between the presence of the father in the home and increased school achievement.²

Kenkel believed that almost every divorce threatens the basic security of almost every child involved. He stated:

Some children of divorce remain insecure, lonely, anxious individuals for all of their lives, although many more, we trust, go on to regain their sense of security. Some situations aggravate the threat of security less and others help to relieve it. Being a ward of the state while parents work out or dispute custody arrangements or learning that neither parent really wants him and that "arrangements" have been made for him to live with this or that relative can inflict deep psychic wounds which, if healed at all, will show ugly scars for many years.³

Research on divorce indicated that in addition to a continually rising divorce rate, an increasing number of children are being involved in divorce petitions. The observations of recognized sociologists and the findings of research studies generally supported the belief that parental divorce adversely affects children, especially young

¹Herzog and Sudia, pp. 175-181.

²Moynihan, pp. 23-36.

³William F. Kenkel, The Family In Perspective (New York: Appleton-Century-Crofts, 1973), p. 327.

children, since most divorces affecting children occur early in marriage.

Effects of Parental Remarriage on Children

As stated earlier, sixty percent of all divorce actions involve children. Not only does a high percentage of all divorces involve children, but three-fourths of all male divorcees and two-thirds of all female divorcees remarry. This statistic was supported by Martinson.

Of the three-quarters of a million persons divorced annually, many remarry; of 1,523,000 marriages in the United States in 1960, over one-fifth (22 percent) were remarriages. About three out of four remarriages involved a divorced person; one out of four involved a widow or widower.¹

This statistic received added emphasis from Reiss when he stated:

In 1968, although almost 600,000 marriages were broken by divorce, over 500,000 new marriages were contracted with at least one party who had been divorced or widowed. Perhaps 400,000 of these remarriages involved divorced people.²

Farber stated that "Perhaps the major bond between divorced husbands and wives is the children of the marriage. In approximately 90 percent of divorces the mother has custody of the children."³ According to Goode, in the United States the rate of eventual remarriage among

¹Martinson, p. 345.

²Reiss, p. 304.

³Farber, p. 360.

divorcees is roughly as high as that for the unmarried population, about nine in ten.¹

As previously reported research indicated, children may suffer traumatic experiences upon the divorce of their parents. The findings of researchers indicated that the prospects are great that a child of divorce will be subjected to the additional trauma of the introduction of a stepparent into his family situation within a relatively short time following the divorce. Using United States census data, Glick found that for those who remarried subsequent to divorce the medial length of time that elapsed between previous marriage dissolution and remarriage was 2.7 years.² Nimkoff stated that over 98 percent of those divorced before the age of 30 remarry, usually within two to three years.³ Folkman and Clatworthy stated that two-thirds of the divorced women and three-fourths of the divorced men remarry within five years.⁴

Goode was quoted as stating that "The number of

¹William J. Goode, "Marital Satisfaction and Instability: A Cross-cultural Class Analysis of Divorce Rates." In Perspectives in Marriage and the Family. Edited by J. R. Eshelman (Boston: Allyn and Bacon, 1969), p. 752.

²Paul C. Glick, American Families (New York: Wiley, 1957), pp. 110-112.

³M. F. Nimkoff, "The American Family." In Marriage and Family in the Modern World: A Book of Readings. Edited by Ruth S. Cavan (New York: Thomas Y. Crowell, 1969), p. 20.

⁴Folkman and Clatworthy, p. 40.

children seems to have almost no significant effect on the activities leading to remarriage."¹ In support of this others stated:

Although the children interfered with the frequency of dating, within two years after the divorce 60 percent of mothers with three or more children were married as² compared with 45 percent of mothers with one child.

The divorced appear to be more likely to remarry within a given period than the widowed or the unmarried. . . . A divorced person at the chronological age of twenty-five years has a probability of ninety-nine chances in one hundred of remarrying. . . . Children appear to be less of a handicap for the remarriage of divorced women than is popularly believed; the divorcee with children is as likely to remarry as the childless divorcees.³

This point is often ignored in the criticism directed at divorce which involves children and implies that after divorce the child will live in a personal world of separated parents. The fact is that a large number of the mothers, who usually have custody of the children, remarry not long after the divorce. Therefore, the child usually comes into a new relationship with the second husband as a stepfather. This relationship may be one of conflict and insecurity for the child, but in many cases it means that with time the divorce is compensated for⁴ at least in part by a new set of family relationships.

The impact of remarriage on children appeared to be somewhat related to the age of the child. Several sociologists have published statements in support of this.

¹Goode, After Divorce, pp. 309-345.

²Farber, p. 362.

³Folkman and Clatworthy, p. 406.

⁴Bell, p. 542.

Bell quoted Bernard (1956, p. 206) as stating that "The general concensus among remarried parents seems to be that very young or quite grown-up children tend to assimilate a new parent more easily than do adolescents."¹ Others stated:

Usually the children are more accepting than not. They tend to react more casually when they learn of the marriage of their father because they usually live with their mother and have less personal concern for the daily existence and mode of life followed by their father. Children will express strong feelings "pro" and "con" with respect to the re-marriage of their mother.²

Despite the presumed upsurge in affection for the mother during the broken home interval, children feel even less affectionate to remarried mothers than to mothers whom they have shared with fathers. This implies resentment toward the mother for having re-married.³

. . . new husbands seldom share fully in rearing their stepchildren. The children resist his discipline and rebuff his affection while he feels alienated by their resistance. Therefore, remarriage only partially relieves the wife of the overload imposed by loss of the original father, while it⁴ may cause the children more problems than it solves.

Analysis of the research of Rosenberg showed reduced self-esteem and increased psychosomatic symptoms on the child when parents divorce. There was a still further reduction in self-esteem and further increases in

¹Bell, p. 543.

²Folkman and Clatworthy, p. 411.

³Blood, The Family, p. 495.

⁴Ibid., pp. 608-609.

psychosomatic symptoms after the remarriage of the divorced mother.¹ Commenting upon the results of Rosenberg's study, Blood stated:

How much of the loss of self-esteem and how many of the psychosomatic symptoms may be attributed to the poor relationship between stepchildren and step-father and how much to feeling betrayed by the mother cannot be differentiated. . . . The point is that for children who have already suffered the loss of the natural father, life is made even² more difficult by the introduction of a new father.

Scott studied the effects of intact, divorced, and reconstructed homes on academic status, and found a significant correlation between self-concept (as a learner) scores and academic status scores of fifth grade students. The correlations were both positive and significant beyond the .001 level for reconstructed homes, intact homes, and total student population.³

Sociologist provided evidence that social class and economic conditions affect remarriage as well as divorce. According to Folkman and Clatworthy, at lower socioeconomic levels, marriages are less stable whether they are original or whether they are remarriages.⁴ Bell believed that

¹Morris Rosenberg, Society and the Adolescent Self-Image (Princeton: Princeton University Press, 1965), p. 99.

²Blood, The Family, p. 72.

³Charles V. Scott, "The Effects of Family Structure on the Academic Status of Fifth Grade Students," (Doctoral dissertation, The University of Oklahoma, 1974).

⁴Folkman and Clatworthy, p. 412.

there may also be a social-class difference related to children and their getting along with stepparents. He referred to a study of Langner and Michael (1963, p. 174) that reported a larger proportion of low-social-class respondents (31 percent) than high-social-class respondents (20 percent) not getting along with their stepparents.¹

Blood presented a relevant point in relation to social class and remarriage.

Lower-middle class adoptions more commonly involved adoption by the husband of children born to his wife in a previous marriage which ended in divorce. This occurs more often in the lower-middle class because their divorce₂ rate is higher than that of the upper-middle class.

In view of the fact that there were an estimated four million children living in broken homes and that less than 1.5 million of these children were living with divorced mothers or fathers in one-parent families, a sizable number of the four million children lived in step-families. Although demographic statistics indicated that a large number of children live in stepfamilies, very few research studies were found to examine how step-relationships affect children and their academic achievement. This was further substantiated by Bowerman and Irish who reported that a thorough examination

¹Bell, p. 543.

²Blood, The Family, p. 65.

of research literature for the past forty years revealed that relatively few studies had been made concerning the stepchild.¹ Investigations that seem relevant to this study are briefly reported.

Podolsky reported that many children complain that the stepparent became the dominant person in the family and exerted undue influence on the natural parent. When the stepparent became the central person in the home, the child felt that he was almost entirely left out of the family picture.²

Landis explained that a child in a remarriage situation may have two sets of parents, four sets of grandparents, and a number of stepbrothers and stepsisters. He pointed out that the child often finds it difficult to explain extra family members to others.³

Perry and Pfuhl compared the adjustment of high school students from one-parent families with students from restructured families using a delinquency check list, a psychosomatic complaint list, and school grades as measures of adjustment. They reported no significant

¹Charles E. Bowerman and Donald P. Irish, "Some Relationships of Stepchildren to their Parents," Marriage and Family Living 24 (May 1962): 113.

²Podolsky, p. 52.

³Landis, pp. 11-12.

differences between the two groups on any of the three measures.¹

Burchinal studied characteristics of adolescents from unbroken, broken, and reconstituted families. He reported no significant differences in personality characteristics, in participation in school activities, in mean grade point averages, or in the number of schoolmates the respondents thought liked them.²

Clausen reported that studies of children reared in restructured families suggested that friction between the stepparent and the stepchild are common. Among reasons given was that the new spouse was often viewed by the child as a rival for the affection and attention of the remaining original parent.³

Thomson believed that a child can profit from a good remarriage. She stated that it is possible that a remarriage of a child's mother or father might provide the

¹Joseph B. Perry, Jr. and Edwin H. Pfuhl, "Adjustment of Children in 'Solo' and 'Remarriage' Homes," Marriage and Family Living 25 (May 1963): 221-223.

²Lee G. Burchinal, "Characteristics of Adolescents from Unbroken, Broken, and Reconstituted Families," Journal of Marriage and the Family 26 (February 1964): 44-51.

³Jo A. Clausen, "Family Structure, Socialization, and Personality." In Review of Child Development Research. Edited by M. L. Hoffman and L. N. Hoffman (New York: Russell Sage Foundation, 1966), p. 6.

child opportunity to engage in more activities than would be possible with one parent.¹

The number of research studies related to remarriage was limited and only indirectly related to the age level under study. However, the sociological literature and available research data seemed to support the contention that parental remarriage is generally a traumatic experience in the lives of children who have already been affected by the trauma of parental divorce.

Summary

The research findings included in the foregoing sections provided background information relative to reading readiness tests, family structure in the United States, the effects of socioeconomic status on academic achievement, the effects of pupil gender on academic achievement, the effects of parental divorce and one-parent families on children, and the effects of parental remarriage on children.

The research studies reported generally supported the concept that reading readiness tests are effective instruments for assessing children's readiness for reading instruction. The data indicated that the tests may be more useful when the upper scores and the lower scores are

¹Thomson, p. 227.

used than when middle scores are used. The readiness test results may be especially useful if used as the basis for adjusting instruction to pupils' special abilities.

The review of literature related to family structure in the United States indicated that over an extended period the divorce rate in the United States has been rising, although there has been fluctuation in the rate. Even though many people view the divorce rate in the United States as alarming, the impact of the rate was somewhat minimized by comparison with the rates of other countries. In addition to an increased rate of divorce, the number of divorces involving children has been increasing faster than the divorce rate. In general, the mother was usually given custody of minor children. The data indicated that 90 percent of all divorcees remarried within five years after divorce.

Research studies concerned with the relationship between socioeconomic status and academic achievement indicated that there was a rather close positive relationship. The data indicated that there were a number of factors associated with social class that probably influenced academic achievement, possibly the least of which were not teacher expectation and lack of understanding concerning the consequences of social class values on academic achievement.

Pupil gender has long been recognized by educators as being a variable in academic achievement. The data presented in the review of literature substantiated the concept that girls generally matured earlier than boys and surpassed boys in school related tasks, especially in the early years.

The sociological writings and research studies related to divorce provided varying views on the effects of divorce on children. However, there seemed to be consensus that a two-parent family was more stable and, in general, more fully provided for children's needs than a similar one-parent family. Most sociologists and researchers admitted that children suffered psychological trauma when subjected to the experience of parental divorce, but there was disagreement as to the lasting effects of the trauma.

Remarriage appeared to be a generally expected result of divorce, occurring usually within five years of divorce. Although the increasing numbers of divorces involving children and the rate of remarriage indicated that large numbers of children were involved in step-families, there was a marked lack of research related to the effects of parental remarriage upon children. However, the writings of sociologists and the few available research studies indicated that parental remarriage was generally a negative experience for children and probably added to the

effects of the trauma experienced earlier by parental divorce.

When viewed as a whole, the data presented in the review of literature indicated a rather close relationship among the three variables included in this study. The interlinking of research findings indicated that the variables should logically be considered together.

CHAPTER III

DESIGN AND PROCEDURES

The purpose of this study was to determine the relationship between family structure, socioeconomic status, gender; and the reading readiness scores of first grade pupils. The chapter includes the 1) setting and sample, 2) procedure, 3) instruments utilized, and 4) analysis of data.

Setting and Sample

The Midwest City-Del City School System is included within the Oklahoma City, Oklahoma, metropolitan area complex. The major employment opportunities within the area include business, industry, federal government, state government, and agriculture. Also included within the area are five four-year educational institutions and three community colleges.

The schools included in the study were restricted to individual elementary schools within the Midwest City-Del City School System. There were 17 elementary schools within this system enrolling approximately 1200 first grade pupils.

The subjects in this study were drawn from 15 of the units comprising the Midwest City-Del City Schools.

Two school units were not included in the study. One unit elected not to participate and the other housed only special education pupils. Criteria for selecting subjects were: 1) Subjects completing kindergarten in May, 1974, and who were born in 1968; 2) Subjects classified as belonging to Social Classes I, II, III, IV, and V by Hollingshead's Two Factor Index of Social Position.

Procedure

In March, 1975, the enrollment cards and cumulative folders for first grade pupils in the Midwest City-Del City Schools were canvassed by members of the secretarial staff to determine family structure, reading readiness score, pupil gender, and socioeconomic status for each pupil. The use of both kinds of records provided rather detailed information. When possible, in instances where information was found to be incomplete or lacked specificity, homeroom teachers, principals, and school counselors were consulted for verification of information. Data were collected on a total of 1121 pupils. Within this group, data were complete on 814 pupils. Data were deleted for 59 pupils for lack of parental educational data, 51 were deleted for lack of parental job description data, 197 were deleted for lack of a reading readiness score, and two were deleted because pupils lived in a one-parent family due to one parent being deceased. Once

information on pupils was collected, pupils were classified as coming from one of the three family structures and one of three socioeconomic statuses. Table 1 presents a description of the population by school, family structure, and socioeconomic status.

Two hundred twenty-three subjects were selected for the study by randomly sampling a maximum of 15 pupils for each cell of an 18 cell partition using a table of random numbers. This procedure produced unequal groups for the sub-samples. Table 2 presents a description of the population by family structure, socioeconomic status, and pupil gender.

Selection of Variables

The independent variables in the study were type of family structure, socioeconomic status, and pupil gender as determined from pupils' enrollment cards. Pupils' readiness score on the Metropolitan Readiness Tests was the criterion (dependent) variable in the study.

In view of the research findings related to the influence of socioeconomic status and pupil gender on academic achievement, these two variables were included as independent variates in the study. It was assumed that random sampling would control other variables that might influence results of the study.

TABLE 1
POPULATION BY SCHOOL, FAMILY STRUCTURE, AND
SOCIOECONOMIC STATUS

School	Divorced			Restructured			Intact			Total
	H	M	L	H	M	L	H	M	L	
1	0	1	3	0	0	4	1	4	24	37
2	0	1	0	0	0	0	7	29	6	43
3	3	4	5	0	0	1	1	15	20	49
4	0	4	7	1	2	4	4	15	42	79
5	0	6	4	2	6	3	0	15	14	50
6	0	3	12	0	3	8	2	32	65	125
7	0	2	5	0	5	6	3	23	47	91
8	0	0	2	1	0	1	4	6	10	24
9	0	0	1	0	0	0	2	2	0	5
10	1	0	1	1	0	0	12	20	4	39
11	0	2	3	1	1	5	2	9	31	54
12	2	3	3	2	1	3	4	19	25	62
13	0	1	0	1	3	0	3	32	0	40
14	1	1	1	1	5	2	7	40	24	82
15	0	4	2	1	1	0	0	10	16	34
Total	7	32	49	11	27	37	52	271	328	814

TABLE 2
POPULATION BY FAMILY STRUCTURE, SOCIOECONOMIC STATUS, AND
PUPIL GENDER

	High B1		Middle B2		Low B3		
	M C1	F C2	M C1	F C2	M C1	F C2	
Divorced	4*	3*	16*	16*	28*	21*	88*
A1	4**	3**	15**	15**	15**	15**	67**
Restructured	9*	2*	17*	10*	17*	20*	75*
A2	9**	2**	15**	10**	15**	15**	66**
Intact	29*	23*	125*	146*	160*	168*	651*
A3	15**	15**	15**	15**	15**	15**	90**
	70*	48**	330*	85**	414*	90**	
	M = 404* 118**		F = 410* 105**				

* Number of subjects in population

** Number of subjects selected for study

Instruments Utilized

The instrument chosen for measurement of pupils' reading readiness was the Metropolitan Readiness Tests, Form B. Socioeconomic status was measured by a modification of Hollingshead's Two Factor Index of Social Position.
Metropolitan Readiness Tests.

The Metropolitan tests were devised to measure the traits and skills of school beginners which contribute to their readiness for first grade instruction. They were designed to test pupils at the completion of the kindergarten year or the beginning of first grade. The following six subtests comprise the test: 1) Word Meaning; 2) Listening; 3) Matching; 4) Alphabet; 5) Numbers; and 6) Copying.

The reliability and validity of the Metropolitan Readiness Tests seemed to be well established. Dykstra stated:

Reliability data, reported for first grade and kindergarten children, were computed using both split-half and alternate-form techniques. Reliabilities for the total test are generally above .90 for pupils tested at the end of kindergarten or early in grade one. The reliability of the test appears adequate for the purposes for which it is intended.¹

¹Oscar K. Buros, Ed. The Seventh Mental Measurements Yearbook (Highland Park, N. J.: Gryphon Press, 1972), p. 1176.

Singer stated that the split-half reliability of the test ranges from .79 to .85.¹

Providing information on construct validity of the Metropolitan Readiness Tests, the manual of directions reported the correlation of the MRT to be .80 with the Murphy-Durrell Reading Readiness Analysis and to be .70 with the Lee-Clark Reading Readiness Test. Predictive validity was calculated by correlations with the Stanford Achievement Test; Primary I, Form B. The manual stated that the correlations between the subtests of the Metropolitan Readiness Tests and the six Stanford subtests ranged from .57 to .67. The manual further stated:

Since these observed correlations are with single subtests or achievement, one may justifiably conclude that the correlation with total overall achievement, were there such a measure, would be at a level of at least .65.²

Reliability for the total score on the Metropolitan test was evaluated by split-half and alternate-form for both Forms A and B. Split-half reliabilities ranged from .90 to .95; alternate-form reliability was given as .91.³

Hollingshead's Two Factor Index of Social Position was designed to determine socioeconomic status (SES)

¹Ibid., p. 17.

²Gertrude H. Hildreth, Nellie L. Griffiths, Mary E. McGauvran. Manual of Directions - Metropolitan Readiness Tests (New York, N. Y.: Harcourt, Brace & World, Inc., 1969), p. 17.

³Ibid., p. 28.

from the factors, occupation and educational attainment of the head of the household.

The Index of Social Position (ISP) grew out of Hollingshead's social investigations between 1933 and 1949. It was developed in 1951 as an instrument to determine social position in a large-scale study of interrelations between social stratification and the care mentally ill members of the community were receiving from psychiatric agencies in the New Haven, Connecticut area. The determination of placement of individuals in the social structure was done in two ways: 1) Hollingshead and Jerome K. Myers, Professors of Sociology at Yale University, first made a detailed study of differentiation in the New Haven community. 2) Then a systematic sample was drawn of 5 percent of the households in the community. There were 3,559 households in the sample. Each household was interviewed in 1951 with a schedule of questions on the size of the household, the age and sex of its members, the occupation of the head of the household and any other members who were in the labor force, the years of school the adult members had completed, marital status, religious identification and participation, reading habits, recreations, and so forth.

From this information a three-factor index of social position was developed to enable the research group to stratify the households in the sample in a manner similar

to the Alba Edwards (1938) scale. The three factors used were; 1) area of residence in the community, 2) occupation of the head of the household, and 3) years of school completed by the head of the household. The Three Factor Index of Social Position was published as Appendices Two and Three of Social Class and Mental Illness (Hollingshead and Redlich, 1958).

Because of the realization that before the Three Factor Index could be used in a similar urban community, that community would have to be mapped in detail by the same procedure Davie and Myers had used in New Haven, Hollingshead decided to reanalyze the data accumulated on the 3,559 households included in the 5 percent sample. New multiple correlations and regressions were computed. It was found that the coefficient of multiple correlation between judged class position and occupation and education of the head of the household was .975. This finding revealed that the residence scale contributed very little to the determination of estimated class position. Therefore, the residential scale was dropped. The data were then analyzed to determine the appropriate weights for the occupation and years of schooling of the head of the household. The regression equation indicated that occupation should be assigned a weight of 7 and years of school completed

(education) should be assigned a weight of 4. Thus, the Two Factor Index of Social Position came into being, and was first published in 1957.¹

According to Cuber and Kenkel:

Warner, Hollingshead, and West seem to be correct in their approach to "social class" as a group of people assigned a more or less similar status, or status range, within the community, using as criteria of this unity the agreements among persons in the community; (a) that these units exist, (b) that a certain definite number of people are "in" and "out" of each unit, and (c) that it makes a difference both subjectively and objectively in which segment of the community one is.

The strength of the items included in the ISP was verified by a factor analysis study by Kahl and Davis. They analyzed a battery of 19 standard measurement tools of socioeconomic status. Use of the centroid method revealed a general factor with high correlation with many of the variables, ranging from a high of .88 to a low of .49. In addition, the battery of indexes showed two common factors.

The first was composed of the various measures of occupation, plus certain variables closely related to occupation, such as education, self identification, and the interviewers' impressionistic rating of the

¹August B. Hollingshead, "Commentary on 'The Indiscriminate State of Social Class Measurement,'" Social Forces 49 (June 1971): 563-567.

²John F. Cuber and William F. Kenkel, Social Stratification in the United States (New York: Appleton-Century-Crofts, 1954), p. 363.

subject. The second factor was composed of ecological measures plus those of the status of the parents of the subject and his wife.¹

Lawson and Boek conducted a correlational study of seven measures of socioeconomic status and two measures of occupation. The highest sum of intercorrelations with other measures was produced by the Warner Scale; next highest was the Hollingshead Scale. The correlation between the Hollingshead ISP and the Warner Index of Social Class (ISC) was .86, whereas the correlation between the Hollingshead Occupation Scale and the Warner ISC was .85. According to Lawson and Boek,

Of course, the sums for the Warner and Hollingshead scales are enlarged by their relationship with each other because each uses a similar seven-point occupational scale as one of its components as well as similar education information. A high correlation between the Census occupational categories and the Hollingshead Occupational category also would be expected.²

Findings from the Lawson and Boek study indicated that the Hollingshead ISP measured nearly as well as did the Warner ISC. "It was concluded that the Hollingshead seven-point occupational classification provides a practical and sufficiently reliable measure of social class for most analysis."³

¹Joseph A. Kahl and James R. Davis, "A Comparison of Indexes of Socio-Economic Status," American Sociological Review 20 (June 1955): 324.

²Edwin D. Lawson and Walter E. Boek, "Correlations of Indexes of Families' Socio-Economic Status," Social Forces 39 (December 1960): 150.

³Ibid., p. 152.

Although highly critical of the present state of all such indexes, Haug and Sussman stated, in reference to the two most used scales (Hollingshead and Duncan), "We prefer to consider the Hollingshead scale to be the more valid and the Duncan the more invalid."¹ Elsewhere, they stated, "As an immediate expedient, the Hollingshead 7-step occupational scale may be used alone, with interpolations of job titles not included in the old listing, as a best available estimator of social class."²

Ellis added support for the use of the Hollingshead scale by stating:

Hollingshead's Two-Factor Index of Social Position (ISP) remains the only procedure in common use possibly exempt from these deficiencies. Its two components of occupation and education can be applied on a society-wide basis, and the validity of the composite index score exceeds that yielded by either factor alone.³

Haug and Sussman pointed out that, "Although the occupational ordering is logically consistent with the Weberian notion of differing life chances, the allocation of specific census-listed occupations to levels is

¹Marie R. Haug and Marvin B. Sussman, "Reply to Hollingshead," Social Forces 49 (June 1971): 569.

²Haug and Sussman, "The Indiscriminate State of Social Class Measurement," Social Forces 49 (June 1971): 562.

³Robert A. Ellis, "The Index of Class Position: An Improved Intercommunity Measure of Stratification," American Sociological Review 28 (April 1963): 272.

incomplete if not out-of-date."¹ They strongly recommended up-dating the occupational component.

Updating the occupational component would at least require allocating job titles in the Alphabetical Index of Occupations to their appropriate slot in the seven levels of the Hollingshead occupational scale. Ideally, census designations should be developed which are "self-allocating" on the basis of the major category of work into which they fall.²

According to Stricker, the Hollingshead Two Factor Index of Social Position was revised in line with Haug and Sussman's recommendations. The modification involved the following changes:

a) The format was rearranged to facilitate comparisons of categories and types of occupations. b) The direction of the scores was revised so that a high score indicates high status. c) The values of businesses and farms were altered to reflect 1971 dollars. For this purpose, the original 1948 values were adjusted with implicit price defectors for total non-residential fixed investment (Council of Economic Advisors, 1972; U. S. Bureau of Economic Analysis, 1972). d) Categories were added for No Occupation, Don't Know, Not Ascertained, and Inapplicable. They were assigned scores of 96, 97, 98, and 99, respectively, to reflect their indeterminate character.³

The range of possible scores on the Hollingshead ISP is from 11 to 77, with 11 representing the lowest possible social position and 77 the highest. For the

¹Haug and Sussman, "The Indiscriminate State of Social Class Measurement," p. 561.

²Ibid.

³Lawrence J. Stricker, Measuring Social Status with Occupational Information: Some Useful Procedures (Bethesda, Md.: ERIC Document Service, ED 069 750, 1972).

purpose of this study, the continuum of scores was divided into the modified hierarchy of social class groups as follows: 11-27, Class V; 28-44, Class IV; 45-60, Class III; 61-70, Class II; and 71-77, Class I. According to Bergel, Social Class Groups I, II, III, IV, and V would be considered representative of the high, upper-middle, lower-middle, upper-lower, and lower-lower levels respectively.¹ High socioeconomic status (SES) was represented by Group I, middle SES was represented by Groups II and III, and low SES was represented by Groups IV and V. Table 3 provides the two-factor scores obtained by the subjects in the population.

Analysis of Data

Data collected for analysis in this study included:

1) Metropolitan Readiness Tests, Form B, administered in April, 1974; 2) structure of pupils' family; 3) socioeconomic status of each subject; and 4) pupil gender.

The data collected on the pupils was statistically analyzed by using factorial analysis of variance through multiple regression.²

Factorial analysis of variance made possible the consideration of the relationship of three independent

¹E. E. Bergel, Social Stratification (New York: McGraw-Hill, 1962), p. 275.

²Fred N. Kerlinger and Elazar J. Pedhazur, Multiple Regression in Behavioral Research (New York: Holt, Rinehart and Winston, 1973).

TABLE 3

DISTRIBUTION OF SCORES OBTAINED BY POPULATION USING THE TWO FACTOR INDEX OF SOCIAL POSITION

Social Class I Score - Frequency							Social Class II & III Score - Frequency							Social Class IV & V Score - Frequency						
D			R		I			D		R		I			D		R		I	
	M	F	M	F	M	F		M	F	M	F	M	F		M	F	M	F	M	F
71							45				2	1	5	11	2	1	2			
72							46							12						
73	4		2	2	19	17	47			1			3	13						
74							48	7	4	3	1	26	33	14						
75							49					1		15	1	1			2	
76							50							16						
77		3	7		10	6	51	2	7	7	3	27	28	17						
							52	1				5	8	18					1	
							53							19	3	3		1		1
							54					1		20		1	1			
							55		3	1	1	15	19	21					1	
							56							22					2	2

TABLE 3-Continued

Social Class I Score - Frequency							Social Class II & III Score - Frequency							Social Class IV & V Score - Frequency						
D			R		I		D			R		I		D			R		I	
	M	F	M	F	M	F		M	F	M	F	M	F		M	F	M	F	M	F
							57							23	4	1	1		3	2
							58	1				8	2	24					1	
							59	1				11	12	25		1				
							60						1	26		2	1	1	8	2
							61							27	1	2			1	
							62	1	2	1	2	4	6	28						1
							63					1		29			1			3
							64							30	3	1			13	12
							65	1						31						1
							66	2		4	1	16	21	32						
							67							33		1	1	1	17	17
							68							34	1	1	1		3	1
							69					3		35						

TABLE 3-Continued

Social Class I Score - Frequency						Social Class II & III Score - Frequency						Social Class IV & V Score - Frequency					
D		R		I		D		R		I		D		R		I	
M	F	M	F	M	F		M	F	M	F	M	F		M	F	M	F
						70					6	10	36				
													37	3	4	4	15
													38			1	1
													39				1
													40		2	1	5
													41	3		2	1
													42				1
													43				
													44	7		2	21
4	3	9	2	29	23		16	16	17	10	125	146		28	21	17	20
																160	168

variables (family structure, socioeconomic status, and pupil gender) to one dependent variable (reading readiness) in order to test seven hypotheses. This means of analysis produced two types of correlations: Multiple correlation (R) that indicated the relationship between the independent variables and the dependent variable, and squared multiple correlation (R^2) that indicated the proportion of variance accounted for by the independent variables and the interaction effects. It was then possible to use sums of squares regression (SS_{reg}) to test the significance of differences among group mean reading readiness scores.

The first step in the analysis of data was to draw random samples of 15 socioeconomic status scores from each of the three socioeconomic groups to compute Analysis of Variance (ANOVA) to determine if the three groups were significantly different. Means and standard deviations were computed and the ANOVA computed. In the event of a significant F-value, the Scheffe' method of multiple comparisons between means, the S-method, was used to determine which of the means differed significantly from each other.

The second step in the data analysis was to compute means (M) and standard deviations (S) of reading readiness scores for the total sample and each of the sub-samples used in the study.

The third step in the data analysis was to prepare data cards for computing (SS_{reg}) for testing the seven

hypotheses. Appendix A presents the data organized and coded for regression analysis.

Since the computer program calculated SS_{reg} on the basis of the number of variables entered, it was necessary to generate 17 coded vectors to represent membership in the groups and sub-groups constituting the three independent variables. This arrangement of data was necessary in order to acquire SS_{reg} for the three main effects and first- and second-order interactions from the computer program. The relationship between vectors is depicted in Appendix A.

The 17 coded vectors represented the following contrasts (comparisons): Vector 1 represented a contrast between the mean reading readiness scores of pupils from divorced and restructured families; Vector 2 represented a contrast of the average mean reading readiness score of pupils from divorced and restructured families with the mean score of pupils from intact families; Vector 3 represented a contrast between mean reading readiness scores of pupils from high and middle socioeconomic status families; Vector 4 represented a contrast of the average mean reading readiness score of pupils from high and middle socioeconomic status families with the mean score of pupils from low socioeconomic status families; Vector 5 represented a contrast between the mean reading readiness scores of male and female pupils; Vector 6 represented a contrast between

the group means represented by Vectors 1 and 3; Vector 7 represented a contrast between the group means represented by Vectors 1 and 4; Vector 8 represented a contrast between the group means represented by Vectors 1 and 5; Vector 9 represented a contrast between the group means represented by Vectors 2 and 3; Vector 10 represented a contrast between the group means represented by Vectors 2 and 4; Vector 11 represented a contrast between the group means represented by Vectors 2 and 5; Vector 12 represented a contrast between the group means represented by Vectors 3 and 5; Vector 13 represented a contrast between the group means represented by Vectors 4 and 5; Vector 14 represented a contrast among group means represented by Vectors 1, 3, and 5; Vector 15 represented a contrast among the group means represented by Vectors 1, 4, and 5; Vector 16 represented a contrast among the groups means represented by Vectors 2, 3, and 5; and Vector 17 represented a contrast among the group means represented by Vectors 2, 4, and 5.¹

The fourth step in the data analysis was to compute SS_{reg} for the 17 coded vectors by processing the data cards using the BMD03R program² at the Merrick Computer Center, University of Oklahoma.

¹Kerlinger and Pedhazur, p. 133.

²W. J. Dixon, ed., BMD: Biomedical Computer Programs (Berkley: University of California Press, 1970).

The fifth step in the data analysis was to generate SS_{reg} for each of the three factors and four interactions by combining SS_{reg} for certain vectors. Vectors 1 and 2 produced SS_{reg} for Factor A, family structure; Vectors 3 and 4 produced SS_{reg} for Factor B, socioeconomic status; Vector 5 produced SS_{reg} for Factor C, pupil gender; Vectors 6, 7, 9, and 10 produced SS_{reg} for Interaction AxB; Vectors 8 and 11 produced SS_{reg} for Interaction AxC; Vectors 12 and 13 produced SS_{reg} for Interaction BxC; and Vectors 14, 15, 16, and 17 produced SS_{reg} for Interaction AxBxC. The total SS_{reg} , sum of squares residual (SS_{res}), and sum of squares total (SS_{tot}) were reported directly on the computer printout.

The final step in the data analysis was to compute mean squares regression (MS_{reg}) and F-values for each of the three factors and four interactions. In the event of a significant F-value for any of the items, the Scheffe' method of multiple comparisons between means, the S-method, was used to determine which of the means differed significantly from each other. In the Scheffe' comparisons, a given comparison was considered statistically significant if $|D|$ (the absolute value of D) exceeded a computed value S.¹

¹Ibid., p. 129.

CHAPTER IV

FINDINGS AND DISCUSSION

The statistical data and analysis were presented within the limitations imposed by the variables that the instruments purported to measure. The sample of 223 first grade pupils were randomly selected in March, 1975, from 15 elementary schools in the Midwest City-Del City School System. Subgroups of the sample consisted of 67 pupils from one-parent families, 66 pupils from restructured families, 90 pupils from intact families; 48 pupils from high socioeconomic families, 85 pupils from middle socioeconomic families, 90 pupils from low socioeconomic families; 118 male pupils, and 105 female pupils. The data used in the study consisted of the structure of the family in which the child lived; level of education achieved by the head of the household, the description of the occupation of the head of the household; pupil gender; and reading readiness scores. Data was provided from information recorded on pupils' enrollment cards and permanent record folders. The data was collected and reported to the researcher by members of the secretarial staff of the Midwest City-Del City School System.

Socioeconomic status scores were calculated for each pupil and recorded with the other data. The means and standard deviations of the socioeconomic status scores for the high, middle, and low socioeconomic groups in the three samples were computed and are reported in Table 4.

TABLE 4
MEANS AND STANDARD DEVIATIONS OF SOCIOECONOMIC STATUS SCORES
FOR PUPILS GROUPED BY SOCIOECONOMIC STATUS

	High	Middle	Low
Mean	74.40	51.87	34.53
St. D.	6.00	5.96	6.85

In order to determine if differences between means of socioeconomic status scores were significant, an Analysis of Variance (ANOVA) was computed. An F-value of 151.64 was obtained. The F-value was significant at or beyond the .001 level of significance (8.25, $df = 2/44$) and indicated a significant difference among the mean socioeconomic status scores for the groups. The results of the ANOVA are presented in Table 5.

In order to determine if the difference between pairs of socioeconomic status scores was such that the

TABLE 5

SUMMARY OF ANALYSIS OF VARIANCE RESULTS, COMPARING SOCIO-ECONOMIC STATUS SCORES FOR PUPILS FROM HIGH, MIDDLE, AND LOW SOCIOECONOMIC STATUS FAMILIES

	df	SS	MS	F	p
Between	2	11,987.7	5,993.85	151.64	.001
Within	42	1,660.1	39.53		
Total	44	13,647.8			

groups could legitimately be treated as independent groups, Scheffe' tests were made between the means of the three groups. The comparison of means for high and middle socioeconomic groups indicated the difference was significant ($D = 22.53$, $S = 7.60$). The comparison of means for high and low socioeconomic groups was significant ($D = 39.87$, $S = 7.60$). Likewise, the comparison of means for middle and low socioeconomic groups was significant ($D = 17.34$, $S = 7.60$). All comparisons were tested at the .01 level of significance. As the results of comparisons of all means presented in Table 6 indicate, the groups could legitimately be treated as independent groups.

TABLE 6
COMPARISON OF MEANS OF SOCIOECONOMIC STATUS SCORES FOR PUPILS
FROM HIGH, MIDDLE, AND LOW SOCIOECONOMIC STATUS FAMILIES

Groups	Means	D	S	Significance at .01 Level
High and Middle	74.40 51.87	22.53	7.60	S. D.
High and Low	74.40 34.53	39.87	7.60	S. D.
Middle and Low	51.87 34.53	17.34	7.60	S. D.

Groups means and standard deviations on the dependent variable (reading readiness) were computed for each of the 18 subgroups in the study. Means and standard deviations for each of the 18 subgroups are reported in Table 7. Although the data produced unequal n's when sampled, Table 7 indicates that small standard deviations are associated with small n's and large standard deviations are associated with large n's. Further, according to Linquist, the Norton study indicated that "When the heterogeneity of form or variance is 'marked' but not 'extreme', allowance

TABLE 7

MEANS AND STANDARD DEVIATIONS OF READING READINESS SCORES FOR PUPILS GROUPED BY FAMILY
STRUCTURE, SOCIOECONOMIC STATUS, AND GENDER

	High B1		Middle B2		Low B3		
	M C1	F C2	M	F	M	F	
D A1	N=4 M=77.75 S=9.39	N=3 M=82.67 S=9.02	N=15 M=70.60 S=13.59	N=15 M=76.80 S=8.78	N=15 M=61.53 S=14.83	N=15 M=63.13 S=16.02	N=67 M=69.25 S=14.53
R A2	N=9 M=77.44 S=8.87	N=2 M=84.50 S=8.44	N=15 M=65.20 S=18.17	N=10 M=68.70 S=15.67	N=15 M=55.33 S=17.16	N=15 M=62.07 S=11.54	N=66 M=65.03 S=16.30
I A3	N=15 M=77.07 S=12.71	N=15 M=82.60 S=9.89	N=15 M=69.73 S=15.22	N=15 M=75.40 S=13.79	N=15 M=65.07 S=13.18	N=15 M=72.47 S=14.70	N=90 M=73.72 S=14.13
	N=48 M=79.58 S=10.37		N=85 M=71.21 S=14.55		N=90 M=63.27 S=15.15		N=223 M=69.81 S=15.14
	M = N=118 M=67.59 S=15.76			F = N=105 M=72.29 S=14.41			

may be made for this fact by setting a higher 'apparent' level of significance for the tests of treatment effects than would otherwise be employed."¹ Therefore, it was assumed that regression analysis of variance would be sufficiently robust to adequately identify differences among means of groups with unequal n's.

Regression Analysis of Variance (ANOVA) was computed, using 17 coded vectors to represent the main effects and first- and second-order interactions as scores by the BMD03R computer program. The Grand Mean (M) computed was 69.81, and the Standard Deviation (S) computed was 15.14. The analysis of variance for the total variance due to regression produced an F-value of 4.00 (df = 17/205). The F-value was significant at or beyond the .001 level of significance, indicating that the relationship between group membership and reading readiness scores was significant ($R = .499$). F-values were also computed for each of the 17 coded vectors.

The F-value computed for Vector 1, which contrasted mean readiness scores for pupils from divorced and restructured families, was 3.19 (df = 1/205) which was not significant at the .10 level of significance. An F-value

¹E. F. Linquist, Design and Analysis of Experiments (Boston: Houghton Mifflin, 1953), pp. 78-86.

of this size indicated no significant difference between the two means. The F-value computed for Vector 2, which contrasted the average of means for pupils from divorced and restructured families with the mean of pupils from intact families was 12.64 ($df = 1/205$), which was significant at or beyond the .001 level of significance. The F-value indicated that there was a significant difference between the average mean score of pupils from divorced and restructured families and the mean score of pupils from intact families. The SS_{reg} for Vectors 1 and 2 were combined to produce SS_{reg} for Factor A, family structure.

The F-value computed for Vector 3, which contrasted the mean reading readiness scores for pupils from high- and middle-SES families, was 8.20 ($df = 1/205$), which was significant at or beyond the .005 level of significance. The F-value indicated a significant difference between the mean scores of pupils from high- and middle-SES families. The F-value computed for Vector 4, which contrasted the average of means for pupils from high- and middle-SES families with the mean for pupils from low-SES families was 31.09 ($df = 1/205$), which was significant at or beyond the .001 level of significance. The F-value indicated a significant difference between average mean score of pupils from high- and middle-SES families and the mean score of pupils from low-SES families. The SS_{reg}

for Vectors 3 and 4 were combined to produce SS_{reg} for Factor B, socioeconomic status.

The F-value computed for Vector 5, which contrasted the means for male and female pupils, was 7.53 ($df = 1/205$), which was significant at or beyond the .01 level of significance. The F-value indicated a significant difference between the mean reading readiness scores for boys and girls. The SS_{reg} for Vector 5 produced the SS_{reg} for Factor C, pupil gender.

The F-value computed for Vector 6, which contrasted Vectors 1 and 3, was 1.23 ($df = 1/205$), and was not significant. The F-value indicated no interaction between the groups compared. The F-value computed for Vector 7, which contrasted Vectors 1 and 4, was less than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups compared. The F-value computed for Vector 9, which contrasted Vectors 2 and 3, was less than 1 ($df = 1/205$). The F-value was not significant and indicated no interaction between the groups compared. The F-value computed for Vector 10, which contrasted Vectors 2 and 4, was 3.24 ($df = 1/205$). The F-value was significant at or beyond the .10 level of significance, thus indicating a slight interaction

between the groups compared. The SS_{reg} for Vectors 6, 7, 9, and 10 were combined to produce the SS_{reg} for First-order interaction AxB.

The F-value computed for Vector 8, which contrasted Vectors 1 and 5, was less than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups compared. The F-value computed for Vector 11, which contrasted Vectors 2 and 5, was less than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups. The SS_{reg} for Vectors 8 and 11 were combined to produce the SS_{reg} for First-order interaction AxC.

The F-value computed for Vector 12, which contrasted Vectors 3 and 5, was less than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups compared. The F-value computed for Vector 13, which contrasted Vectors 4 and 5, was less than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups compared. The SS_{reg} for Vectors 12 and 13 were combined to produce the SS_{reg} for First-order interaction BxC.

The F-value computed for Vector 14, which contrasted Vectors 1, 3, and 5, was less than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups compared. The F-value computed for Vector 15, which contrasted Vectors 1, 4, and 5, was less

TABLE 8

SUMMARY OF REGRESSION ANALYSIS RESULTS, COMPARING GROUP MEMBERSHIP DATA AND READING
READINESS SCORES

Source	df	SS	MS	F	p
Total Regression	17	12,672.84	745.46	4.00	< .001
Regression due to					
Vector 1	1	593.01	593.01	3.19	> .10
Vector 2	1	2,312.97	2,312.97	12.64	< .001
Factor A	2	2,905.98	1,453.00	7.81	< .001
Vector 3	1	1,524.61	1,524.61	8.20	< .005
Vector 4	1	5,782.71	5,782.71	31.09	< .001
Factor B	2	7,307.32	3,654.00	19.65	< .001
Vector 5	1	1,401.18	1,401.18	7.53	< .01
Factor C	1	1,401.18	1,401.18	7.53	< .01
Vector 6	1	229.41	229.41	1.23	> .25
Vector 7	1	1.00	1.00	< 1.00	> .25
Vector 9	1	52.97	52.97	< 1.00	> .25
Vector 10	1	602.97	602.97	3.24	< .10

TABLE 8-Continued

Source	df	SS	MS	F	p
Interaction AxB	4	885.44	.00	1.19	> .25
Vector 8	1	8.37	8.37	< 1.00	> .25
Vector 11	1	27.12	27.12	< 1.00	> .25
Interaction AxC	2	35.49	17.74	< 1.00	> .25
Vector 12	1	1.00	1.00	< 1.00	> .25
Vector 13	1	1.00	1.00	< 1.00	> .25
Interaction BxC	2	.17	.59	< 1.00	> .25
Vector 14	1	41.53	41.53	< 1.00	> .25
Vector 15	1	68.51	68.51	< 1.00	> .25
Vector 16	1	2.03	2.03	< 1.00	> .25
Vector 17	1	25.28	25.28	< 1.00	> .25
Interaction AxBxC	4	137.35	34.00	< 1.00	> .25
Residual	205	38,204.16	186.00		
Total	222	50,877.00			

than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups compared. The F-value computed for Vector 16, which contrasted Vectors 2, 3, and 5, was less than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups compared. The F-value computed for Vector 17, which contrasted Vectors 2, 4, and 5, was less than 1 ($df = 1/205$). The F-value was not significant, indicating no interaction between the groups compared. The SS_{reg} for Vectors 14, 15, 16, and 17 were combined to produce SS_{reg} for the Second-order interaction $A \times B \times C$. The results of the Regression ANOVA for the 17 coded vectors are reported in Table 8.

The first hypothesis concerned the reading readiness scores of pupils from divorced, restructured, and intact families, Factor A. The means and standard deviations of the reading readiness scores used in the statistical comparisons are presented in Table 9.

The alternative hypothesis predicted that when pupils are grouped by family structure, differences among mean reading readiness scores will favor pupils from intact, divorced, and restructured families in that order. Means calculated for the groups were 73.72 for the intact group, 69.25 for the divorced group, and 65.03 for the restructured group. Therefore the prediction for $H_{a1.0}$ proved to be correct.

TABLE 9
MEANS AND STANDARD DEVIATIONS OF READING READINESS SCORES
FOR PUPILS GROUPED BY FAMILY STRUCTURE

	Divorced (N=67)	Restructured (N=66)	Intact (N=90)
Mean	69.25	65.03	73.72
St. D.	14.53	16.30	14.13

A Regression ANOVA was computed to test the null hypothesis of no significant differences to determine if the observed differences among the three group means were significant. An F-value of 7.81 ($df = 2/205$) was obtained. This value exceeded the criteria for the .05 level of significance (3.00, $df = 2/205$). $H_{0.10}$, which predicted no significant difference among mean reading readiness scores when pupils are grouped by family structure, was rejected. Indications were that there was a significant difference among the mean reading readiness scores for the three groups. One or more of the groups had obtained a mean score that was significantly different--either higher or lower--than the grand mean of the groups. This analysis is reported in Table 10.

TABLE 10
SUMMARY OF REGRESSION ANALYSIS, TABLE 8 REDUCED TO SEVEN ITEMS

	df	Property of Variance	SS	MS	F	p
Total Regression	17	.2490	12,672.84	745.46		
A	2	.0571	2,905.98	1,453.00	7.81	< .001
B	2	.1436	7,307.32	3,654.00	19.65	< .001
C	1	.0275	1,401.18	1,401.00	7.53	< .01
AxB	4	.0174	885.44	221.00	1.19	> .25
AxC	2	.0007	35.49	18.00	.10	> .25
BxC	2	.0000	.17	.09	< .10	> .25
AxBxC	4	.0027	137.35	34.00	.18	> .25
Residual	205	.7510	38,204.16	186.00		
Total	222	1.0000	50,877.00			

Since the resulting F-value was significant, it was necessary to compare mean reading readiness scores for pupils from the three family structures in order to determine which group means differed significantly from the others. The Scheffe' method of multiple comparisons, the S-method, was used to compare mean reading readiness scores for the three groups. Results of the comparisons are reported in Table 11.

TABLE 11
COMPARISON OF MEANS OF READING READINESS SCORES FOR PUPILS
FROM DIVORCED, RESTRUCTURED, AND INTACT FAMILIES

Groups	Means	D	S	Significance at .01 Level
Divorced and Restructured	69.25 65.03	4.22	7.24	N. S. D.
Divorced and Intact	69.25 73.72	-4.47	6.75	N. S. D.
Restructured and Intact	65.03 73.72	-8.69	6.78	S. D.

The comparisons of means for the divorced and restructured groups indicated that the difference between means was not significant ($D = 4.22$, $S = 7.24$). Likewise, the comparison of means for the divorced and intact groups indicated no

significant difference ($D = -4.47$, $S = 6.75$). However, the comparison of means for the restructured and intact groups indicated a significant difference ($D = -8.69$, $S = 6.78$). All comparisons were tested at the .01 level of significance.

The second hypothesis concerned the reading readiness scores of pupils from high, middle, and low socioeconomic families, Factor B. The means and standard deviations of the reading readiness scores used in the statistical comparisons are presented in Table 12. The alternate hypothesis predicted that when pupils are grouped by socioeconomic status, differences among mean reading readiness scores would favor pupils from high, middle, and low socioeconomic families in that order. Means computed for the three groups were 79.58 for the high-SES group, 71.21 for the middle-SES group, and 63.27 for the low-SES group. Therefore, the prediction for $H_{a2.0}$ proved to be correct.

TABLE 12
MEANS AND STANDARD DEVIATIONS OF READING READINESS SCORES FOR
PUPILS GROUPED BY SOCIOECONOMIC STATUS

	High (N=48)	Middle (N=85)	Low (N=90)
Mean	79.58	71.21	63.27
St. D.	10.37	14.55	15.15

A Regression ANOVA was computed to test the null hypothesis of no significant differences in order to determine if the differences among the group mean reading readiness scores were significant. An F-value of 19.65 ($df = 2/205$) was obtained. This value exceeded the criteria for the .05 level of significance (3.00, $df = 2/205$). Therefore the $H_{0.05}$, which predicted no significant differences among mean reading readiness scores when pupils are grouped by socioeconomic status, was rejected. The analysis indicated that highly significant differences existed among group mean scores. This analysis was reported in Table 10.

The resulting significant F-value necessitated further analysis to determine where the significant differences among means existed. Scheffe' tests were made to compare mean reading readiness scores for the three groups. Results of the comparison are reported in Table 13. The comparisons of means for the high- and middle-SES groups indicated that the difference between means was significant when tested at the .01 level of significance ($D = 8.37$, $S = 7.33$). Likewise, the comparisons of means for the high- and low-SES groups indicated significant difference ($D = 16.31$, $S = 7.27$). When means for the

TABLE 13
COMPARISON OF MEANS OF READING READINESS SCORES FOR PUPILS
FROM HIGH, MIDDLE, AND LOW SOCIOECONOMIC FAMILIES

Groups	Means	D	S	Significance at .01 Level
High and Middle	79.58 71.21	8.37	7.33	S. D.
High and Low	79.58 63.27	16.31	7.27	S. D.
Middle and Low	71.21 63.27	7.94	6.17	S. D.

middle- and low-SES groups were compared, this difference also was significant ($D = 7.94$, $S = 6.17$).

The third hypothesis concerned the reading readiness scores of male and female pupils, Factor C. The means and standard deviations of the reading readiness scores used in this statistical comparison are presented in Table 14. The alternate hypothesis predicted that when pupils are grouped by gender, differences between mean reading readiness scores would favor girls. The means computed for the two groups were 67.59 for boys and 72.29 for girls. Therefore, the prediction for $H_{a_{3.0}}$ proved to be correct.

TABLE 14
MEANS AND STANDARD DEVIATIONS OF READING READINESS SCORES
FOR PUPILS GROUPED BY GENDER

	Males (N=118)	Females (N=105)
Mean	67.59	72.29
St. D.	15.76	14.41

A Regression ANOVA was computed to test the null hypothesis of no significant differences among means in order to determine if the observed difference between the two group mean reading readiness scores was significant. An F-value of 7.53 ($df = 1/205$) was obtained. This value exceeded the criteria for the .05 level of significance (3.84, $df = 1/205$). Therefore the $H_{0.05}$, which predicted no significant difference between mean reading readiness scores when pupils are grouped by gender, was rejected. The resulting F-value indicated the mean reading readiness scores for boys and girls were significantly different. This analysis was reported in Table 10.

A Scheffe' test was made to further verify that the two means differed significantly. Results of the Scheffe'

comparison is reported in Table 15. The comparison of male and female means indicated a significant difference when tested at the .01 level of significance ($D = -4.7$, $S = 3.86$).

TABLE 15
COMPARISON OF MEANS OF READING READINESS SCORES FOR MALE
AND FEMALE PUPILS

Groups	Means	D	S	Significance at .01 Level
Male and Female	67.59 72.29	-4.7	3.86	S. D.

The fourth hypothesis concerned the reading readiness scores of pupils grouped by family structure and socioeconomic status, Interaction AxB. The means and standard deviations of the reading readiness scores used in this statistical comparison are presented in Table 16. The alternate hypothesis predicted that when pupils were grouped by family structure and socioeconomic status, differences among mean reading readiness scores would favor pupils from high and middle socioeconomic status intact families. The means computed for these six groups were 79.85 for the high-SES-divorced group, 73.70 for the middle-SES-divorced group, 62.33 for the low-SES-divorced group, 78.73 for the high-SES-restructured group, 66.60 for the

middle-SES-restructured group, 58.70 for the low-SES-restructured group; 79.83 for the high-SES-intact group, 72.57 for the middle-SES-intact group, and 68.77 for the low-SES-intact group. The prediction for $H_{a_{4.0}}$ proved to be incorrect since the high-SES- and middle-SES-divorced group means exceeded those of the intact groups.

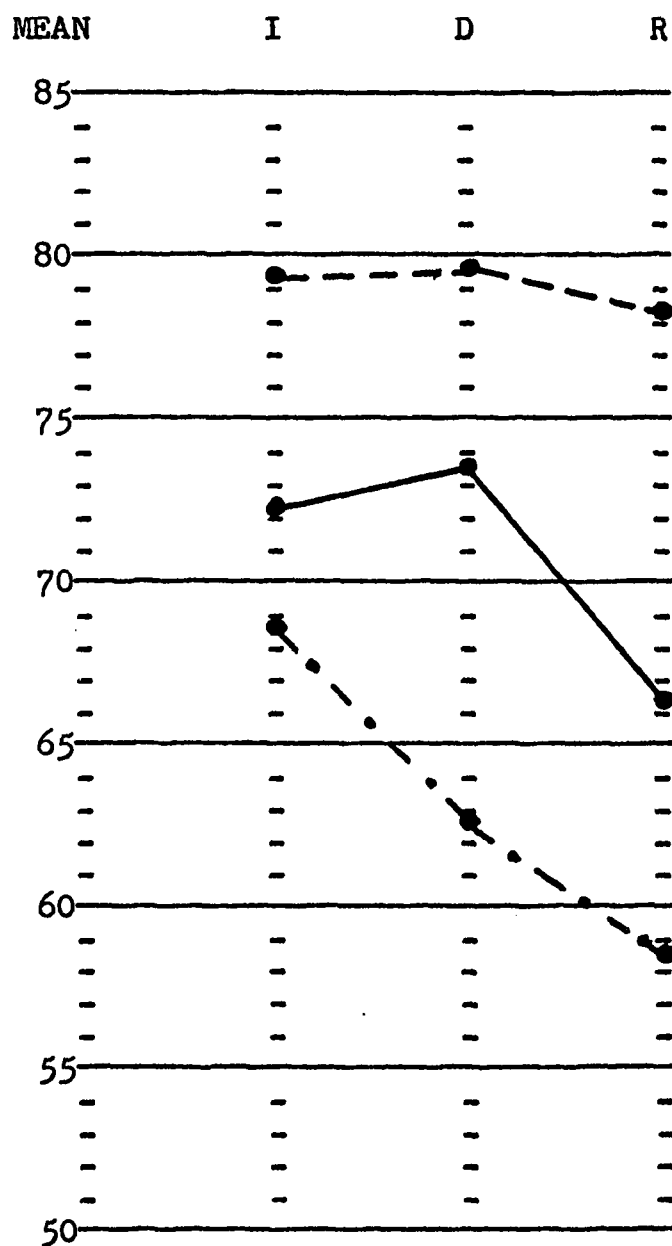
TABLE 16
MEANS AND STANDARD DEVIATIONS OF READING READINESS SCORES
FOR PUPILS GROUPED BY FAMILY STRUCTURE AND SOCIOECONOMIC
STATUS

Divorced	High (N=7)	Middle (N=30)	Low (N=30)
Mean	79.85	73.70	62.33
St. D.	8.84	11.68	15.19
Restructured	(N=11)	(N=25)	(N=30)
Mean	78.73	66.60	58.70
St. D.	8.44	16.96	14.77
Intact	(N=30)	(N=30)	(N=30)
Mean	79.83	72.57	68.77
St. D.	11.54	14.56	14.22

A Regression ANOVA was computed to test the null hypothesis of no significant interaction in order to

determine if the observed relationship among the mean reading readiness scores for the nine groups was significantly changed by the multiple-factor grouping. An F-value of 1.19 ($df = 4/205$) was obtained. This value failed to reach the .05 level of significance (2.37, $df = 4/205$). Therefore the $H_{04.0}$, which predicted no significant interaction among mean reading readiness scores when pupils are grouped by family structure and socioeconomic status, was not rejected. As Figure 1 indicates, probably no interaction effects existed among the group means, and therefore no change in group-mean relationship occurred when pupils were grouped by more than one variable. Since the F-value was not significant, no further analysis was necessary. This analysis was reported in Table 10.

The fifth hypothesis concerned the reading readiness scores of pupils grouped by family structure and gender, Interaction $A \times C$. The means and standard deviations of the reading readiness scores used in this statistical comparison are presented in Table 17. The alternate hypothesis predicted that when pupils are grouped by family structure and gender, differences among mean reading readiness scores would favor girls from intact families. The computed means for the six groups were 68.29 for boys and 71.12 for girls from divorced families, 64.23 for boys and 66.18 for girls from restructured families, and 70.62 for boys and 76.82 for girls from intact families. Therefore the prediction for $H_{a5.0}$ proved to be correct.



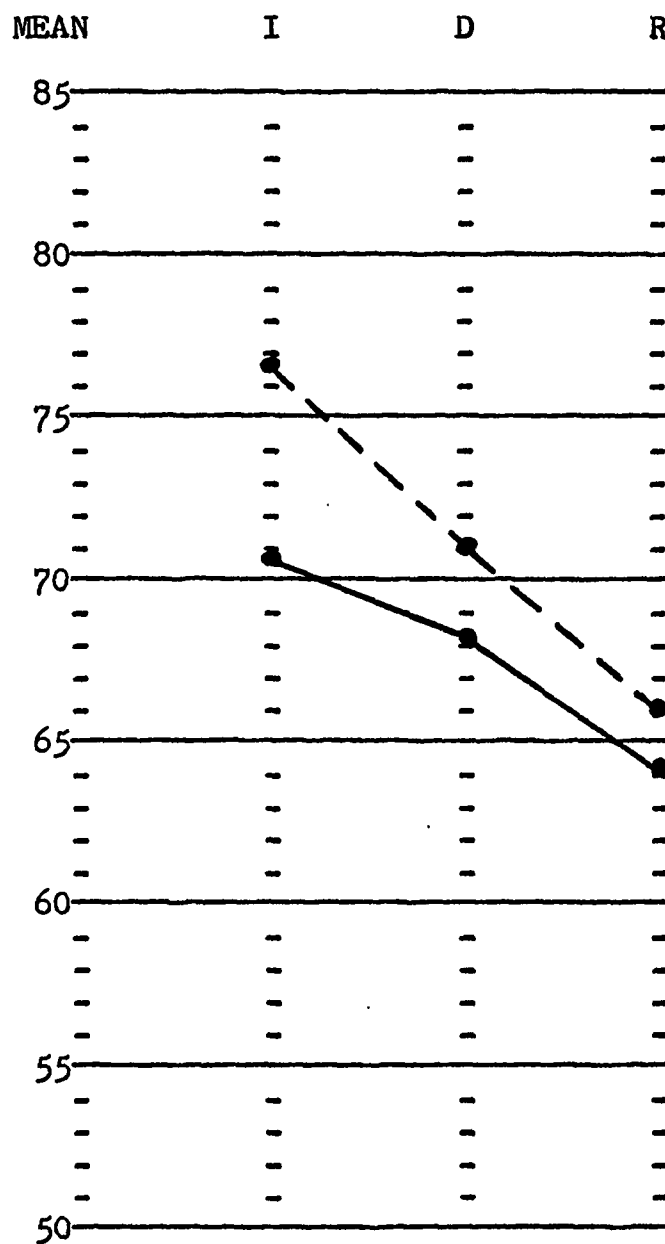
High SES -----
Middle SES -----
Low SES - • - • - • - • -

Fig. 1. -- INTERACTION AxB -- PUPILS GROUPED BY
FAMILY STRUCTURE AND SOCIOECONOMIC STATUS

TABLE 17
MEANS AND STANDARD DEVIATIONS OF READING READINESS SCORES
FOR PUPILS GROUPED BY FAMILY STRUCTURE AND GENDER

	Divorced	Restructured	Intact
Males	(N=34)	(N=39)	(N=45)
Mean	68.29	64.23	70.62
St. D.	14.59	17.88	14.33
Females	(N=33)	(N=27)	(N=45)
Mean	71.12	66.18	76.82
St. D.	14.76	13.95	13.38

A Regression ANOVA was computed to test the null hypothesis of no significant interaction in order to determine if the observed relationship among the mean reading readiness scores for the six groups was significantly changed by the multiple-factor grouping. An F-value less than 1 ($df = 2/205$) was obtained. This value failed to reach the .05 level of significance (3.00, $df = 2.205$). Therefore the $H_{0.05}$, which predicted no significant interaction among mean reading readiness scores when pupils are grouped by family structure and gender, was not rejected. As Figure 2 indicates, probably no significant interaction effects existed among means. Since the F-value was not



Males —————
Females - - - - -

Fig. 2. -- INTERACTION AxC -- PUPILS GROUPED BY
FAMILY STRUCTURE AND GENDER

significant, no further analysis was necessary. This analysis was reported in Table 10.

The sixth hypothesis concerned the reading readiness scores of pupils grouped by socioeconomic status and gender, Interaction BxC. The means and standard deviations of reading readiness scores used in this analysis are presented in Table 18. The alternate hypothesis predicted that when pupils are grouped by socioeconomic status and gender, differences among mean reading readiness scores would favor girls from high and middle socioeconomic status (SES) families. The means computed for these six groups were 77.29 for boys and 82.80 for girls from the high-SES group, 68.51 for boys and 74.25 for girls from the middle-SES group, and 60.64 for boys and 65.89 for girls from the low-SES group. The prediction of $H_{a_{6.0}}$ proved to be correct since the means for girls exceeded the means for boys in all categories.

A Regression ANOVA was computed to test the null hypothesis of no significant interaction in order to determine if the observed relationship among the mean reading readiness scores for these six groups was significantly changed by the multiple-factor grouping. An F-value less than 1.00 ($df = 2/205$) was obtained. This value failed to reach the .05 level of significance (3.00, $df = 2/205$). Therefore the $H_{o_{6.0}}$, which predicted no significant interaction among mean reading readiness scores when pupils

TABLE 18
MEANS AND STANDARD DEVIATIONS OF READING READINESS SCORES
FOR PUPILS GROUPED BY SOCIOECONOMIC STATUS AND GENDER

	High	Middle	Low
	(N=28)	(N=45)	(N=45)
Males			
Mean	77.29	68.51	60.64
St. D.	10.81	15.58	15.34
Females	(N=20)	(N=40)	(N=45)
Mean	82.80	74.25	65.89
St. D.	9.00	12.79	14.89

are grouped by socioeconomic status and gender, was not rejected. As Figure 3 indicates, probably no interaction effects existed among the means of the six groups. No further analysis was necessary in view of the non-significant F-value. This analysis was reported in Table 10.

The seventh hypothesis concerned the reading readiness scores of pupils grouped by family structure, socioeconomic status, and gender, Interaction AxBxC. The means and standard deviations of reading readiness scores used in this analysis are presented in Table 19. The alternate hypothesis predicted that when pupils are grouped by family structure, socioeconomic status, and gender, differences

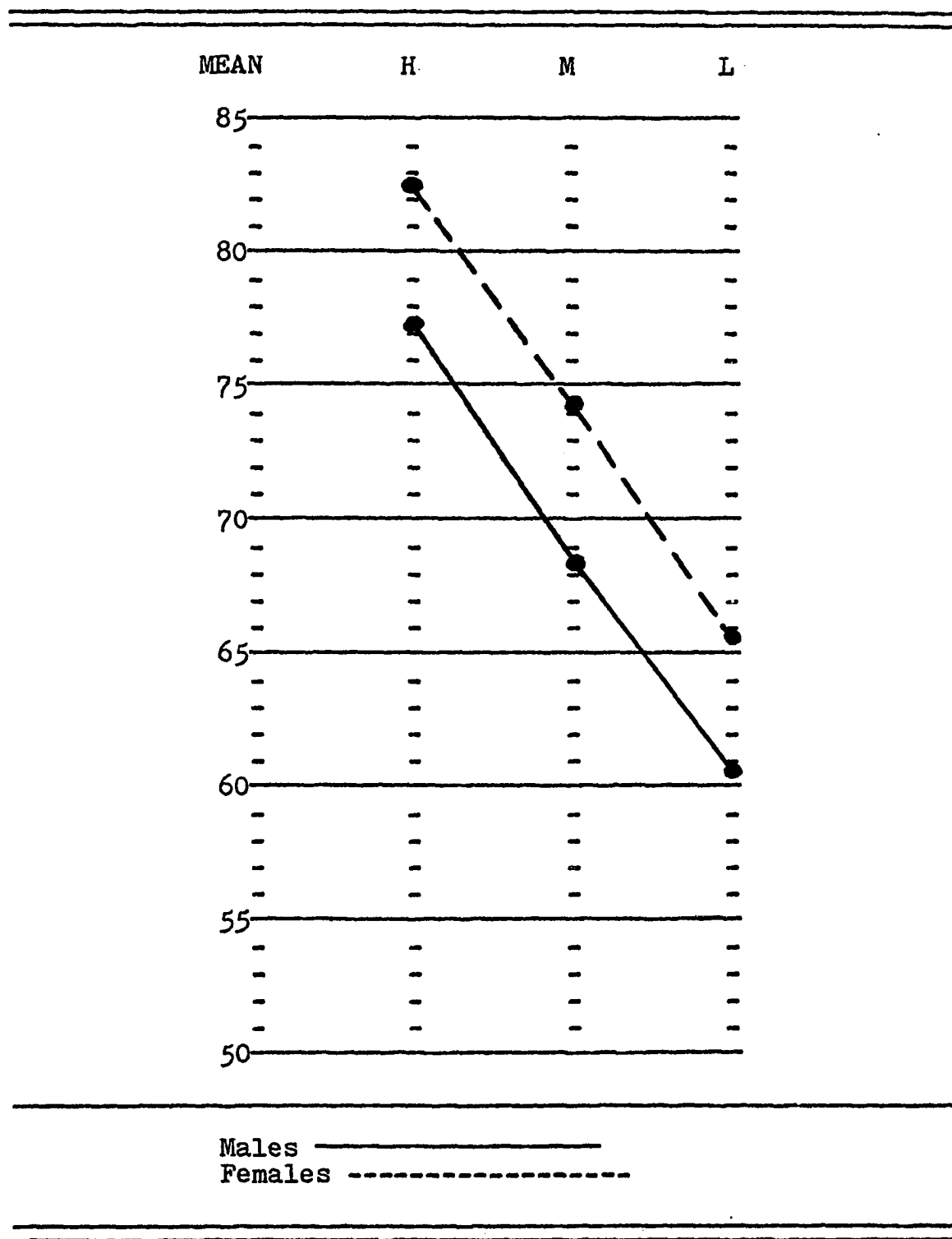


Fig. 3. -- INTERACTION BxC -- PUPILS GROUPED BY
SOCIOECONOMIC STATUS AND GENDER

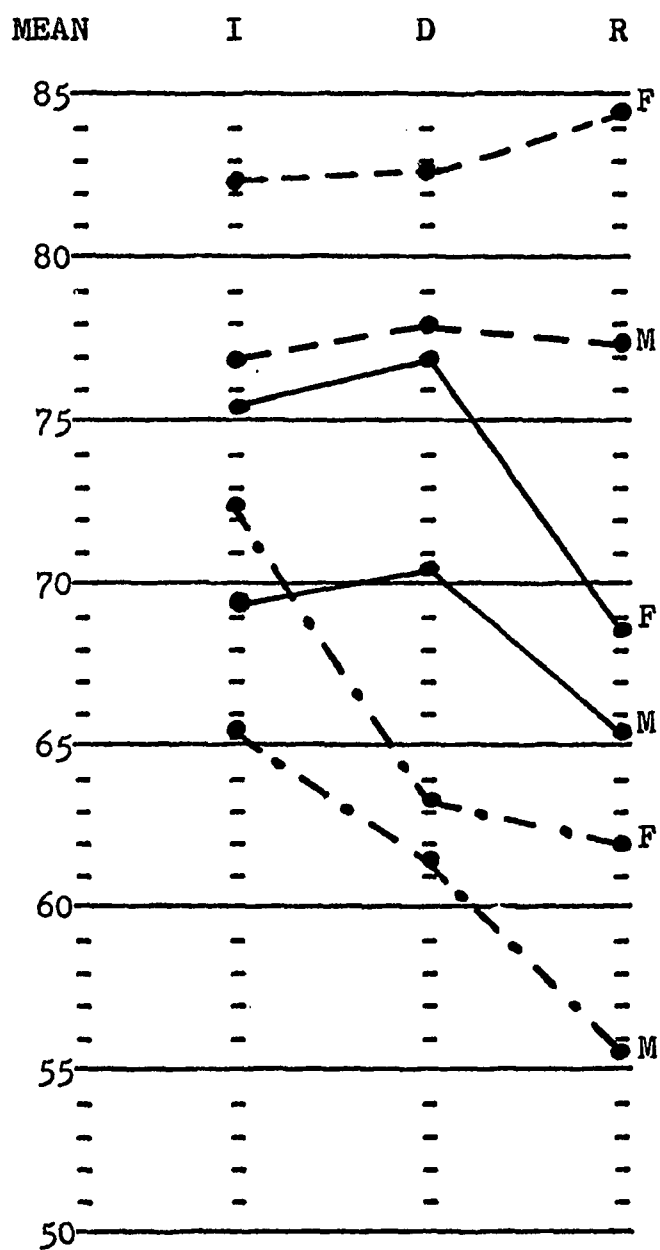
among mean reading readiness scores will favor girls from high- and middle-SES-intact families. The means for these eighteen groups were 77.75 for boys and 82.67 for girls from high-SES-divorced families, 70.60 for boys and 76.80 for girls from middle-SES-divorced families, 61.53 for boys and 63.13 for girls from low-SES-divorced families, 77.44 for boys and 84.50 for girls from high-SES-restructured families, 65.20 for boys and 68.70 for girls from middle-SES-restructured families, 55.33 for boys and 62.07 for girls from low-SES-restructured families, 77.07 for boys and 82.60 for girls from high-SES-intact families, 69.73 for boys and 75.40 for girls from middle-SES-intact families, and 65.07 for boys and 72.47 for girls from low-SES-intact families. The prediction of $H_{a7.0}$ proved to be incorrect in that the means for girls from the high-SES- and middle-SES-divorced groups exceeded the means for girls from high-SES- and middle-SES-intact groups. However, the means for girls exceeded the means for boys within all matched categories.

A Regression ANOVA was computed to test the null hypothesis of no significant interaction in order to determine if the observed relationship among mean reading readiness scores for the 18 groups was significantly changed by the multiple-factor grouping. An F-value less than 1.00 ($df = 4/205$) was obtained. This value failed to reach

TABLE 19

MEANS AND STANDARD DEVIATIONS OF READING READINESS SCORES FOR PUPILS GROUPED BY FAMILY
STRUCTURE, SOCIOECONOMIC STATUS, AND GENDER

	High B1		Middle B2		Low B3	
	M C1	F C2	M	F	M	F
D A1	M=77.75 S=9.39	M=82.67 S=9.02	M=70.60 S=13.59	M=76.80 S=8.78	M=61.53 S=14.83	M=63.13 S=16.02
R A2	M=77.44 S=8.87	M=84.50 S=8.44	M=65.20 S=18.17	M=68.70 S=15.67	M=55.33 S=17.16	M=62.07 S=11.54
I A3	M=77.07 S=12.71	M=82.60 S=9.89	M=69.73 S=15.22	M=75.40 S=13.79	M=65.07 S=13.18	M=72.47 S=14.70



High SES -----
 Middle SES -----
 Low SES -

Fig. 4. --INTERACTION AxBxC -- PUPILS GROUPED BY
 FAMILY STRUCTURE, SOCIOECONOMIC STATUS, AND GENDER

the .05 level of significance (2.37, $df = 4/205$). Therefore the $H_{07.0}$, which predicted no significant interaction among mean reading readiness scores when pupils are grouped by family structure, socioeconomic status, and gender, was not rejected. As Figure 4 indicates, probably no significant interaction effects existed among group means. The non-significant F-value indicated no need for further analysis. This analysis was reported in Table 10.

SUMMARY OF FINDINGS

The first analysis in the study was computed to determine if the three socioeconomic groups were significantly different. The differences among means of socioeconomic status scores for the high, middle, and low groups were found to be significant beyond the .01 level of significance by multiple comparison of means tests. Therefore, the three groups were allowed to be treated as independent groups.

Examination of the group means reported in Table 7, when related to the alternative hypotheses, indicated that when pupils are grouped 1) by family structure, reading readiness scores favored pupils from intact, divorced, and restructured families in that order; 2) by socioeconomic status, mean scores favored pupils from high, middle, and low status in that order; 3) by gender, mean scores favored girls; 4) by family structure and socioeconomic status, mean scores favored the divorced groups in high and middle

socioeconomic status, but favored the intact group in low socioeconomic groups; 5) by family structure and gender, mean scores favored girls from divorced families; 6) by socioeconomic status and gender, mean scores favored girls over boys in all three groups; and 7) by family structure, socioeconomic status, and gender, mean scores favored girls from high- and middle-socioeconomic status, divorced homes.

The Regression ANOVA computed by the BMD03R program produced an F-value of 4.00 ($df = 17/205$). This value indicated that membership in the three independent variable groups was significantly related to reading readiness scores.

The Regression ANOVA of the mean reading readiness scores for the three family-structure groups, the three socioeconomic-status groups, and the two gender groups all indicated significant differences among means beyond the .05 level of significance. However, the ANOVA for the four interaction effects for the three variables failed to indicate significant interaction on any combinations of variables.

The Scheffe' comparisons of means for the three family structures, made as a result of the significant F-values obtained by Regression ANOVA, indicated no significant difference between the mean reading readiness scores

for the divorced and restructured groups or between the divorced and intact groups when tested at the .01 level of significance. However, the Scheffe' test did show a significant difference between the mean reading readiness scores for the restructured and intact groups.

The Scheffe' comparison of means for the three socioeconomic groups showed that all three means differed significantly from each other when tested at the .01 level of significance. The Scheffe' test further substantiated the significance of differences indicated by the results of the Regression ANOVA computed on the mean reading readiness scores for the two genders.

The Regression ANOVA of the mean reading readiness scores indicated significant differences on the main effects, but the four interaction effects were not significant. Indications were that a significant proportion of the variance among the groups was accounted for by the main effects constituted by the three variables, family structure, socioeconomic status, and pupil gender ($R^2 = .249$).

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Educators concerned with the teaching of reading have been investigating predictors of reading achievement for fifty years. During this time, researchers have verified that many variables individually and in various combinations do predict reading achievement with varying degrees of success.

For years, there has been research evidence to support the concept that there is a significant relationship between pupil gender and academic achievement. More recently, research has indicated a strong relationship between the socioeconomic status of pupils' families and academic achievement. In addition, sociologists and researchers of social factors have concluded that the psychological and social trauma experienced by children because of changes in family structure may have direct relationships with academic achievement. This study investigated the relationship of the combined factors of family structure, socioeconomic status, and pupil gender to reading readiness scores. Specifically, the study attempted to determine if there were significant differences among mean

reading readiness scores when pupils were grouped 1) by family structure, 2) by socioeconomic status, 3) by gender, 4) by family structure and socioeconomic status, 5) by family structure and gender, 6) by socioeconomic status and gender, and 7) by family structure, socioeconomic status, and gender.

The population for the study consisted of 814 first grade pupils from 15 elementary schools in the Midwest City-Del City School System of Midwest City, Oklahoma. Each pupil was classified by divorced, restructured, or intact family structure; high, middle, or low socioeconomic status; and male or female gender. A maximum of 15 pupils were randomly selected from each of the 18 subpopulations for study in the investigation. Data for the study was acquired from pupils' enrollment cards and permanent record folders, and included 1) job description of head of the household, 2) education attainment of head of the household, 3) pupil gender, and 4) reading readiness score.

Statistical analysis of the data collected was accomplished through the use of Regression Analysis of Variance (ANOVA). Regression analysis was computed by using the BMD03R program available at the Merrick Computer Center, University of Oklahoma.

The analysis of data resulted in the following findings:

1. There were significant differences among mean reading readiness scores favoring pupils from intact and divorced families when pupils were grouped by family structure ($F = 7.81$; $df = 2/205$; $p < .001$).

2. There were significant differences among mean reading readiness scores favoring pupils from high- and middle-SES families when pupils were grouped by socioeconomic status ($F = 19.65$; $df = 2/205$; $p < .001$).

3. There were significant differences among mean reading readiness scores favoring girls when pupils were grouped by gender ($F = 7.53$; $df = 1/205$; $p < .01$).

4. There was no significant interaction among mean reading readiness scores when pupils were grouped by family structure and socioeconomic status ($F = 1.19$; $df = 4/205$; $p > .25$).

5. There was no significant interaction among mean reading readiness scores when pupils were grouped by family structure and gender ($F < 1$; $df = 2/205$; $p > .25$).

6. There was no significant interaction among mean reading readiness scores when pupils were grouped by socioeconomic status and gender ($F < 1$; $df = 2/205$; $p > .25$).

7. There was no significant interaction among mean reading readiness scores when pupils were grouped by

family structure, socioeconomic status, and gender ($F < 1$; $df = 4/205$; $p > .25$).

Conclusions

It was concluded from the examination of the results of the data analysis obtained in this study that:

1. The proposition that reading readiness scores for pupils from divorced and restructured families will be significantly lower than those from intact families held true only for pupils from restructured families.

2. Although pupils from divorced and restructured families probably suffered traumatic experiences by changes in family structure, the disruptions and adjustments experienced were serious enough to affect reading readiness scores only in case the pupil had experienced both parental divorce and remarriage.

3. As research has indicated for other areas of academic achievement, socioeconomic status apparently affects reading readiness scores.

4. In general, one can expect pupils from higher socioeconomic levels to score significantly higher on reading readiness than pupils from lower socioeconomic levels across all three family structures.

5. As has been indicated by the results of research concerned with other areas of academic achievement, girls can be expected to score higher on reading readiness than boys.

6. Family structure alone is apparently an inadequate predictor of reading readiness scores.

7. The combination of variables family structure, socioeconomic status, and gender accounted for a significant proportion of the variance in reading readiness scores; therefore, these three variables could be used to predict general reading readiness scores.

Recommendations

The following recommendations are offered on the basis of the findings of this study and the review of related literature:

1. In view of finding that family structure affected reading readiness scores, similar studies should be conducted using other areas of reading as a criterion variable.

2. Similar studies should be conducted using pupils from other levels of the primary grades, in view of the fact that very few studies have investigated the effects of family structure on the academic achievement of young children.

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APPENDIX A

APPENDIX A

DATA FOR TABLE 7, ORGANIZED AND CODED FOR REGRESSION ANALYSIS

Subject No.	Readiness Score	Family Structure		Social Structure		Gender	(1x3)	(1x4)	(1x5)	(2x3)
		Factors - A		B		C	(AxB)	(AxB)	(AxC)	(AxB)
		Vectors - 1	2	3	4	5	6	7	8	9
Cell A1B1C1		Vector weights for each subject in Cell A1B1C1								
1	70	.66	.90	.85	.90	1.05	.56	.59	.69	.77
2	82									
3	89									
4	70	.66	.90	.85	.90	1.05	.56	.59	.69	.77
Cell A2B1C1		Vector weights for each subject in Cell A2B1C1								
5	81	.67	.90	.85	.90	1.05	.57	.60	.70	.77
6	78									
7	90									
8	78									
9	65									
10	79									
11	76									
12	87									
13	63	.67	.90	.85	.90	1.05	.57	.60	.70	.77
Cell A3B1C1		Vector weights for each subject in Cell A3B1C1								
14	57	.00	-1.33	.85	.90	1.05	.00	.00	.00	-1.33
15	83									
16	82									
17	63									
18	72									
19	55									

APPENDIX. A EXTENSION

Subject No.	(2x4) (AxB) 10	(2x5) (AxC) 11	(3x5) (BxC) 12	(4x5) (BxC) 13	(1x3x5) (AxBxC) 14	(1x4x5) (AxBxC) 15	(2x3x5) (AxBxC) 16	(2x4x5) (AxBxC) 17
Cell A1B1C1	Vector weights for each subject in Cell A1B1C1							
1	.81	.95	.89	.95	.59	.62	.80	.85
2								
3								
4	.81	.95	.89	.95	.59	.62	.80	.85
Cell A2B1C1	Vector weights for each subject in Cell A2B1C1							
5	.81	.95	.89	.95	-.60	-.63	.80	.85
6								
7								
8								
9								
10								
11								
12								
13	.81	.95	.89	.95	-.60	-.63	.80	.85
Cell A3B1C1	Vector weights for each subject in Cell A3B1C1							
14	-1.20	-1.40	.89	.95	.00	.00	-1.19	-1.26
15								
16								
17								
18								
19								

APPENDIX A-Continued

Subject No.	Readiness Score	Vectors								
		1	2	3	4	5	6	7	8	9
20	99									
21	83									
22	85									
23	86									
24	67									
25	95									
26	78									
27	75									
28	76	.00	-1.33	.85	.90	1.05	.00	.00	.00	-1.13
Cell A1B1C2		Vector weights for each subject in Cell A1B1C2								
29	92	.66	.90	.85	.90	-1.18	.56	.59	-.78	.77
30	82									
31	74	.66	.90	.85	.90	-1.18	.56	.59	-.78	.77
Cell A2B1C2		Vector weights for each subject in Cell A2B1C2								
32	85	-.67	.90	.85	.90	-1.18	-.57	-.60	.79	.77
33	84	-.67	.90	.85	.90	-1.18	-.57	-.60	.79	.77
Cell A3B1C2		Vector weights for each subject in Cell A3B1C2								
34	85	.00	-1.33	.85	.90	-1.18	.00	.00	.00	-1.13
35	77									
36	97									
37	72									
38	91									
39	94									
40	67									
41	75									
42	94									

APPENDIX A EXTENSION-Continued

Subject No.	10	11	12	Vectors 13	14	15	16	17
20								
21								
22								
23								
24								
25								
26								
27								
28	-1.20	-1.40	.89	.95	.00	.00	-1.19	-1.26
Cell A1B1C2	Vector weights for each subject in Cell A1B1C2							
29	.81	-1.06	-1.00	-1.06	-.66	-.70	-.90	-.96
30								
31	.81	-1.06	-1.00	-1.06	-.66	-.70	-.90	-.96
Cell A2B1C2	Vector weights for each subject in Cell A2B1C2							
32	.81	-1.06	-1.00	-1.06	.67	.71	-.90	-.96
33	.81	-1.06	-1.00	-1.06	.67	.71	-.90	-.96
Cell A3B1C2	Vector weights for each subject in Cell A3B1C2							
34	-1.20	1.57	-1.00	-1.06	.00	.00	1.33	1.41
35								
36								
37								
38								
39								
40								
41								
42								

APPENDIX A-Continued

Subject No.	Readiness Score	Vectors								
		1	2	3	4	5	6	7	8	9
43	90									
44	87									
45	83									
46	85									
47	67									
48	75	.00	-1.33	.85	.90	-1.18	.00	.00	.00	-1.13
Cell A1B2C1		Vector weights for each subject in Cell A1B2C1								
49	85	.66	.90	-.48	.90	1.05	-.32	.59	.69	-.43
50	77									
51	73									
52	68									
53	52									
54	65									
55	81									
56	77									
57	77									
58	66									
59	49									
60	77									
61	59									
62	80									
63	73	.66	.90	-.48	.90	1.05	-.32	.59	.69	-.43
Cell A2B2C1		Vector weights for each subject in Cell A2B2C1								
64	40	-.67	.90	-.48	.90	1.05	.32	-.60	-.70	-.43
65	62									
66	53									
67	83									
68	79									

APPENDIX A EXTENSION-Continued

Subject No.	10	11	12	13	14	15	16	17
43								
44								
45								
46								
47								
48	-1.20	1.57	-1.00	-1.06	.00	.00	1.33	1.41
Cell A1B2C1	Vector weights for each subject in Cell A1B2C1							
49	.81	.95	-.50	.95	-.33	.62	-.45	.85
50								
51								
52								
53								
54								
55								
56								
57								
58								
59								
60								
61								
62								
63	.81	.95	-.50	.95	-.33	.62	-.45	.85
Cell A2B2C1	Vector weights for each subject in Cell A2B2C1							
64	.81	.95	-.50	.95	.34	-.63	-.45	.85
65								
66								
67								
68								

APPENDIX A-Continued

Subject No.	Readiness Score	Vectors								
		1	2	3	4	5	6	7	8	9
69	88									
70	84									
71	61									
72	32									
73	51									
74	76									
75	83									
76	41									
77	73									
78	72	-.67	.90	-.48	.90	1.05	.32	-.60	-.70	-.43
Cell A3B2C1		Vector weights for each subject in Cell A3B2C1								
79	67	.00	-1.33	-.48	.90	1.05	.00	.00	.00	.64
80	95									
81	77									
82	80									
83	57									
84	63									
85	51									
86	44									
87	78									
88	70									
89	77									
90	75									
91	68									
92	49									
93	95	.00	-1.33	-.48	.90	1.05	.00	.00	.00	.64
Cell A1B2C2		Vector weights for each subject in Cell A1B2C2								
94	76	.66	.90	-.48	.90	-1.18	-.32	.59	-.78	-.43

APPENDIX A EXTENSION-Continued

Subject No.	10	11	12	13	Vectors 14	15	16	17
69								
70								
71								
72								
73								
74								
75								
76								
77								
78	.81	.95	-.50	.95	.34	-.63	-.45	.85
Cell A3B2C1	Vector weights for each subject in Cell A3B2C1							
79	-1.20	-1.40	-.50	.95	.00	.00	.64	-1.26
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								
92								
93	-1.20	-1.40	-.50	.95	.00	.00	.64	-1.26
Cell A1B2C2	Vector weights for each subject in Cell A1B2C2							
94	.81	-1.06	.57	-1.06	.37	-.70	.51	-.96

APPENDIX A - Continued

Subject No.	Readiness Score	Vectors								
		1	2	3	4	5	6	7	8	9
95	76									
96	81									
97	82									
98	78									
99	63									
100	72									
101	85									
102	60									
103	82									
104	85									
105	67									
106	86									
107	89									
108	70	.66	.90	-.48	.90	-1.18	-.32	.59	-.78	-.43
Cell A2B2C2		Vector weights for each subject in Cell A2B2C2								
109	82	-.67	.90	-.48	.90	-1.18	.32	-.60	.79	-.43
110	61									
111	77									
112	62									
113	78									
114	49									
115	84									
116	38									
117	82									
118	74	-.67	.90	-.48	.90	-1.18	.32	-.60	.79	-.43
Cell A3B2C2		Vector weights for each subject in Cell A3B2C2								
119	65	.00	-1.33	-.48	.90	-1.18	.00	.00	.00	.64
120	60									

APPENDIX A EXTENSION-Continued

Subject No.	10	11	12	13	Vectors 14	15	16	17
95								
96								
97								
98								
99								
100								
101								
102								
103								
104								
105								
106								
107								
108	.81	-1.06	.57	-1.06	.37	-.70	.51	-.96
Cell A2B2C2 Vector weights for each subject in Cell A2B2C2								
109	.81	-1.06	.57	-1.06	-.40	.71	.51	-.96
110								
111								
112								
113								
114								
115								
116								
117								
118	.81	-1.06	.57	-1.06	-.40	.71	.51	-.96
Cell A3B2C2 Vector weights for each subject in Cell A3B2C2								
119	-1.20	1.57	.57	-1.06	.00	.00	-.75	1.41
120								

APPENDIX A-Continued

Subject No.	Readiness Score	Vectors								
		1	2	3	4	5	6	7	8	9
121	78									
122	41									
123	78									
124	87									
125	80									
126	93									
127	68									
128	87									
129	63									
130	87									
131	87									
132	75									
133	82	.00	-1.33	-.48	.90	-1.18	.00	.00	.00	.64
Cell A1B3C1		Vector weights for each subject in Cell A1B3C1								
134	65	.66	.90	.00	-1.33	1.05	.00	-.88	.69	.00
135	70									
136	59									
137	77									
138	37									
139	69									
140	62									
141	36									
142	65									
143	39									
144	56									
145	61									
146	88									
147	64									
148	75	.66	.90	.00	-1.33	1.05	.00	-.88	.69	.00

APPENDIX A EXTENSION-Continued

Subject No.	10	11	12	13	14	15	16	17
121								
122								
123								
124								
125								
126								
127								
128								
129								
130								
131								
132								
133	-1.20	1.57	.57	-1.06	.00	.00	-.75	1.41
Cell A1B3C1	Vector weights for each subject in Cell A1B3C1							
134	-1.20	.95	.00	-1.40	.00	.92	.00	-1.26
135								
136								
137								
138								
139								
140								
141								
142								
143								
144								
145								
146								
147								
148	-1.20	.95	.00	-1.40	.00	.92	.00	-1.26

APPENDIX A-Continued

Subject No.	Readiness Score	Vectors								
		1	2	3	4	5	6	7	8	9
Cell A2B3C1		Vector weights for each subject in Cell A2B3C1								
149	76	-.67	.90	.00	-1.33	1.05	.00	.89	-.70	.00
150	66									
151	38									
152	77									
153	78									
154	59									
155	58									
156	68									
157	47									
158	40									
159	26									
160	29									
161	69									
162	48									
163	51	-.67	.90	.00	-1.33	1.05	.00	.89	-.70	.00
Cell A3B3C1		Vector weights for each subject in Cell A3B3C1								
164	57	.00	-1.33	.00	-1.33	1.05	.00	.00	.00	.00
165	66									
166	65									
167	80									
168	81									
169	70									
170	51									
171	32									
172	63									
173	75									
174	76									
175	77									

APPENDIX A EXTENSION-Continued

Subject No.	10	11	12	13	Vectors 14	15	16	17
Cell A2B3C1	Vector weights for each subject in Cell A2B3C1							
149	-1.20	.95	.00	-1.40	.00	.94	.00	-1.26
150								
151								
152								
153								
154								
155								
156								
157								
158								
159								
160								
161								
162								
163	-1.20	.95	.00	-1.40	.00	.94	.00	-1.26
Cell A3B3C1	Vector weights for each subject in Cell A3B3C1							
164	1.77	-1.40	.00	-1.40	.00	.00	.00	1.86
165								
166								
167								
168								
169								
170								
171								
172								
173								
174								
175								

APPENDIX A-Continued

Subject No.	Readiness Score	1	2	3	4	5	6	7	8	9
176	51									
177	68									
178	64	.00	-1.33	.00	-1.33	1.05	.00	.00	.00	.00
Cell A1B3C2		Vector weights for each subject in Cell A1B3C2								
179	51	.66	.90	.00	-1.33	-1.18	.00	-.88	-.78	.00
180	62									
181	62									
182	94									
183	87									
184	48									
185	69									
186	44									
187	82									
188	48									
189	74									
190	60									
191	70									
192	54									
193	42	.66	.90	.00	-1.33	-1.18	.00	-.88	-.78	.00
Cell A2B3C2		Vector weights for each subject in Cell A2B3C2								
194	62	-.67	.90	.00	-1.33	-1.18	.00	.89	.79	.00
195	77									
196	41									
197	44									
198	62									
199	65									
200	80									
201	77									

APPENDIX A EXTENSION-Continued

Subject No.	10	11	12	13	14	15	16	17
176								
177								
178	1.77	-1.40	.00	-1.40	.00	.00	.00	1.86
Cell A1B3C2	Vector weights for each subject in Cell A1B3C2							
179	-1.20	-1.06	.00	1.57	.00	1.04	.00	1.41
180								
181								
182								
183								
184								
185								
186								
187								
188								
189								
190								
191								
192								
193	-1.20	-1.06	.00	1.57	.00	1.04	.00	1.41
Cell A2B3C2	Vector weights for each subject in Cell A2B3C2							
194	-1.20	-1.06	.00	1.57	.00	-1.05	.00	1.41
195								
196								
197								
198								
199								
200								
201								

APPENDIX A-Continued

Subject No.	Readiness Score	1	2	3	4	5	6	7	8	9
202	51									
203	74									
204	57									
205	57									
206	62									
207	61									
208	61	-.67	.90	.00	-1.33	-1.18	.00	.89	.79	.00
Cell A3B3C2		Vector weights for each subject in Cell A3B3C2								
209	65	.00	-1.33	.00	-1.33	-1.18	.00	.00	.00	.00
210	63									
211	92									
212	84									
213	49									
214	81									
215	62									
216	54									
217	53									
218	80									
219	67									
220	90									
221	92									
222	84									
223	71	.00	-1.33	.00	-1.33	-1.18	.00	.00	.00	.00

APPENDIX A EXTENSION-Continued

Subject No.	10	11	12	13	Vectors 14	15	16	17
202								
203								
204								
205								
206								
207								
208	-1.20	-1.06	.00	1.57	.00	-1.05	.00	1.41
Cell A3B3C2	Vector weights for each subject in Cell A3B3C2							
209	1.77	1.57	.00	1.57	.00	.00	.00	-2.09
210								
211								
212								
213								
214								
215								
216								
217								
218								
219								
220								
221								
222								
223	1.77	1.57	.00	1.57	.00	.00	.00	-2.09