

Summer 1972

## A Comparison of Children's Achievement Whose Mothers Are Employed Full Time and Those Whose Mothers Are Homemakers

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A COMPARISON OF CHILDREN'S ACHIEVEMENT  
WHOSE MOTHERS ARE EMPLOYED FULL TIME  
AND THOSE WHOSE MOTHERS ARE HOMEMAKERS

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A Thesis  
Presented to  
the Graduate Faculty  
Central Washington State College

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In Partial Fulfillment  
of the Requirements for the Degree  
Master of Education

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by  
Thomas R. Funk  
July 31, 1972

APPROVED FOR THE GRADUATE FACULTY

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## ACKNOWLEDGEMENTS

The writer wishes to express gratitude to the members of his committee, Dr. Eldon Jacobsen and Dr. Dohn Miller, for their continual interest and assistance. To the chairman, Dr. Colin Condit, special thanks are in order for the many hours of guidance and support so freely given. Also, many thanks to my wife, Diane, for her continual support and typing skill.

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A COMPARISON OF CHILDREN'S ACHIEVEMENT  
WHOSE MOTHERS ARE EMPLOYED FULL TIME  
AND THOSE WHOSE MOTHERS ARE HOMEMAKERS

by

Thomas R. Funk

July 31, 1972

This study undertook to examine the relationship between mothers' employment status and the children's achievement. 728 third grade students in the Bellingham Public Schools were used as subjects. The data was analyzed by two way analysis of variance and multiple correlation procedures. There was no relationship found between the mothers' employment status and the children's achievement. However, there was a relationship between fathers' occupational level, family size, children's intelligence, and children's sex and some of the achievement tests.

## BACKGROUND OF THE PROBLEM

During the Second World War there was a great need for women to work due to the shortage of men as laborers. Since that time, women have become a greater part of the working force (Nye and Hoffman, 1963). In fact, the number of women employed has increased about 50 percent since 1950 (Bernard, 1966).

It has been argued that the mothers working is detrimental to the children's general well-being. Information gathered from institutional settings for children suggest that children who are without parents seem to deteriorate both physically as well as psychologically at a faster rate than children who live with their parents (Nye and Hoffman, 1963). It has been assumed from this that any minimization of mother-child contact would be detrimental to the child (Nye and Hoffman, 1963). Burlingham and Freud (1955) and Bowlby (1965) argued logically from this that mothers working was not good for the child's well-being. It should be pointed out that these authors did not look at the working mother-child relationship directly, but used the institutional information and generalized from it.

Margaret Mead (1949) pointed out that in Samoa the younger children were cared for by the older children of the

village during the day while their mothers worked in the fields. This practice did not seem to be detrimental to the children. Also, Spiro (1965) indicated that there doesn't seem to be any harmful effects on the children of the kibbutz who are left with other women while their mothers work.

It should be noted, however, that in both of these instances most or all of the children were cared for by mother substitutes while the mother works. The fact of mothers working in both cultures was accepted and planned for within the culture. Perhaps in our culture where mothers generally do not work, the attitude toward the minority of children whose mothers do work would effect these children detrimentally.

Among the more current studies some interesting things have come to light. Seegal, et al (1959) found that there was no difference between children with working mothers and homemaking mothers with respect to dependency and independency. They also found that the social status of the father's occupation was not related to the mother's occupation, and that mothers usually did not become employed until their children were in school.

Nye (1959) found no indications that children of working mothers were more anxious or anti-social than children of homemaking mothers. In fact, the tendency seemed to be in the opposite direction, but not at a significant level.

Burchinal and Roseman (1961) in a study of teenage child-



ren in the seventh and eleventh grades found no adverse effects on the children whose mothers had been employed during the first three years of their lives, the second three years, or the total first six years of the child's life. They also noted no difference in the achievement of the children of working mothers, who were employed as previously stated, and the children of homemaking mothers at the seventh and eleventh grade levels.

Nelson (1969) found that children from homes where the mothers worked full time, part time or not at all did equally well in school achievement as evidenced by grade point average.

Williamson (1970) found no difference between the achievement of teenage children whose mothers worked and those whose mothers did not. She did find that the homemaking mothers had more children than the working mothers.

The impression held by some teachers that children of working mothers do less well in school work was not supported by Nye's (1959) findings regarding children in grades 9 through 12. There was no significant relationship between maternal employment (when socio-economic status, family size, educational level of mother, rural urban residence, and sex were controlled) and educational competence as indicated by grade average. When analysis was limited to children of full-time working mothers versus homemaking mothers, the results showed a higher grade point average in children of the work-

ing mothers though the difference was not statistically significant.

Nye and Hoffman (1963) on the other hand found that white children (grades 3 through 6) of working mothers with intact families had lower intellectual performance as rated by teachers than a matched group of children whose mothers were homemakers.

"Hitchcock (1959) did not find a statistically significant difference in IQ or achievement test scores in reading and arithmetic for sons of working and non-working mothers in grades 7 through 9. The largest mean difference was in reading with sons of working mothers scoring higher." (Stoltz, 1960)

The empirical evidence would tend to indicate that there is no difference between the achievement of children of working mothers and those children whose mothers are homemakers.. However, there has been very little research conducted using school achievement as criteria at the primary level.

#### Statement of the Problem

The study sought to answer the question: Is there a difference in school achievement between third grade pupils whose mothers work full time outside of the home and those pupils whose mothers work full time in the home? Differences in achievement were studied according to: family size, fathers' occupational level, mothers' employment status, sex, and intelligence.

## CHAPTER II

### DESIGN

All of the third grade students who were enrolled in the Bellingham Public Schools during the years 1969-70 and 1970-71 who were present for the achievement test at the beginning of the third grade and the intelligence test which was given the previous year in the second grade were the subjects for this study. The total enrollment for these two years was about 1,000 students. They were divided by: fathers' occupational level, family size, intelligence and sex.

#### Definition of Terms

1. Mothers' Employment Status - The mother's length of time employed, as stated on the enrollment questionnaire, was used to determine her employment status. Mothers who were employed thirty hours or more were considered as having been employed full time outside the home. For the purposes of this study such mothers were defined as employed mothers. Mothers who were not employed outside the home were defined as homemaking mothers. Children of mothers working outside the home, but less than thirty hours were not included in the study.
2. Fathers' Occupational Level - The father's occupation as stated on the registration questionnaire was used to de-

termine his occupational level. Each occupation was classified according to the 1960 Census classification of occupations. (U.S. Bureau of the Census 1960) For the purposes of this study the fathers' occupations were categorized into three levels: unskilled, skilled, professional. The unskilled group included the following occupations: non-farm laborers, private household workers, other service workers and farm laborers. The skilled group included the following occupations: clerical workers, sales workers, craftsmen, foremen, and machine operators. The professional group included the following occupations: professional and technical, managers and officials, proprietors and farmers, and farm managers.

3. Family Size - The family size as stated on the school registration questionnaire was used for this study. Family size was subdivided into three categories: small - one to two children, average - three to four children, and large - five or more children.
4. Intelligence - The Lorge Thorndike Intelligence Test (LTI) level 2 was administered to these children in the second grade. They were divided into three groups: (1) below average (94 and below), (2) average (95-115), and (3) above average (116 and above).
5. Sex - The statement on the registration questionnaire was used to determine the children's sex.

6. Achievement - The Metropolitan Achievement Test (MAT) Elementary Battery was administered to all the third grade children in the Bellingham School District between October 5 and 15, 1969 and 1970. For the purposes of this study, achievement was defined as the standard grade equivalent scores the children received on that test. The MAT is divided into six subtests. They are as follows:

1. Word Knowledge - a 50 item vocabulary test. In each item the word to be defined is presented in a very brief sentence; the pupil selects from four choices the one which best completes the sentence, the correct choice most often being a synonym of the stimulus word. Emphasis is on knowledge of the literal meaning of the words. The words tested were selected on the basis of an analysis of thirteen reading series, and represent words that occur frequently in the reading of children in grades 3 and 4. Marked deficiency in word knowledge is, of course, an obstacle to the development of reading facility. Therefore, performance on this test that is appreciably below the norm, or appreciably below pupil's attainment in other areas, is an indication of the need for attention to vocabulary building experiences.

2. Word Discrimination - a 36-item test of ability to select a given word from among several words of similar configuration. Each item consists of a sentence from which a word has been omitted; the pupil must select the proper word to complete the sentence from among four similar-appearing words. The ability to attend to small differences in the configuration of words is an important part of word-attack skill, and low achievement on the Word Discrimination Test will generally be found to be associated with low achievement in both word knowledge and reading. This test is fairly easy for most fourth grade pupils, since the essential skills required have been fairly well developed by this time; but it is important in the total reading appraisal program to identify the still sizable number of pupils, even at the fourth grade level, who need help in this particular area.

3. Reading - consists of a series of reading selections each followed by several questions designed to measure

various aspects of reading comprehension, including the following:

a. ability to select the main thought of a passage, or to judge its general significance.

b. ability to understand the literal meaning of the selection or to locate the information explicitly set forth.

c. ability to see the relationships among the ideas set forth in the selection and to draw correct inferences from the selection.

d. ability to determine the meaning of a word from context or to judge from the context which of several possible meanings of a word is the appropriate one.

The selections are graduated in difficulty through control of vocabulary, sentence length and structure, and overall length. The questions based on each selection vary in difficulty but there is definite progression from easy to difficult as the pupil proceeds through the test. The time limit for the test is generous, so that little premium is placed on speed of reading as such.

4. Spelling - a 40 item test in which each word to be spelled is presented orally by the examiner in an illustrative sentence. The words tested were selected on the basis of an analysis of vocabulary lists and leading spelling series: they represent words occurring with greatest frequency in the spelling series at grades 3 and 4.

5. Arithmetic Computation - a 47 item measure of skill in the four fundamental operations. Practically all items are restricted to operations with whole numbers; the few remaining items call for addition or subtraction of money, or the handling of fractions of like denominator. The time limit for the test is generous, so that speed of computation has little influence on the score.

6. Arithmetic Problem Solving and Concepts. - comprises two parts - a measure of ability to solve verbal problems, and a measure of important understandings and concepts such as aspects of the number system, mathematical generalizations, approximate answers, etc. The verbal problems have content intrinsically interesting to children at these grade levels. The computation and reading aspects of the problems have been held to a low level, so that the test is genuinely a measure of problem solv-

ing ability and is very little influenced by these other factors (Directions for Administering Metropolitan Achievement Test, Elementary Battery pp. 3-4).

7. Family Configuration - This means the parental representation within the family. Only children living with two parents were used for this study; it was felt that having only one parent's attention may have an effect on achievement.
8. Race - The registration questionnaire statement plus records kept by the school which are used to file minority enrollment reports for federal aid were used to determine the children's race. Only white caucasian children were used for this study; it was felt that the minority attitude toward school achievement was different than that of caucasian families as evidenced by the poor attendance of the minority groups.
9. Age - Only children who are of average age were used for this study. They were at least 8 years old by Sept. 30, but not 10 years old in the year they attended grade 3; the children who did not fall into this range were considered atypical.

The sample numbered 728 after removing children who were from families with one parent, from a minority race, or were over age. The data for each child was placed in two categories: mothers employed thirty hours or more per week, and mothers who were employed full time at home. Scores from each of the six areas of achievement were analyzed using a

two way analysis of variance. This was done to see if there were any differences between the achievement of children whose mothers were employed outside the home and those whose mothers were employed inside the home. The level of significance was established at .05. A multiple correlation was also used in an attempt to determine whether the variables of: Mothers' Employment Status, Fathers' Occupational Level, Family Size, Children's Intelligence, and Children's Sex could be used to predict the children's achievement.



## CHAPTER III

### RESULTS

Due to the voluminous amount of information presented in this chapter, it has been divided as follows: The first twelve tables pertain to the comparisons of mothers' employment status and fathers' occupational level as a function of the children's MAT achievement; Tables 13 through 24 consider the relationships of mothers' employment status and family size as a function of the children's achievement; Tables 25 through 36 summarize the relationships between mothers' employment status and the children's intelligence as a function of the children's achievement; Tables 37 through 48 show the relationships between mothers' employment status and the children's sex as a function of the children's achievement; Table 49 considers the multiple correlation of all of the variables to the children's MAT achievement.

#### Mothers' Employment Status and Fathers' Occupational Level

Table 1 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Word Knowledge achievement. However, the data showed that fathers' occupational level was related to the children's Word Knowledge achievement. The data further showed that the combina-

tion of mothers' employment status and fathers' occupational level was related to the children's Word Knowledge achievement.

Table 2 summarizes the children's MAT Word Knowledge mean achievement scores in terms of mothers' employment status and fathers' occupational level. Achievement scores for children of employed mothers varied according to fathers' occupation. The children of employed mothers and professional fathers achieved the highest mean score, with children of employed mothers and unskilled and skilled fathers achieving mean scores in that order. Achievement scores for children of homemaking mothers also varied with fathers' occupation, but in the order: professional, skilled, and unskilled. The children's mean achievement scores for both employed and homemaking mothers and fathers' occupational level were in the following descending order: employed mothers - professional fathers, homemaking mothers - professional fathers, employed mothers - unskilled fathers, homemaking mothers - skilled fathers, employed mothers - skilled fathers, and homemaking mothers - unskilled fathers.

Table 3 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Word Discrimination achievement. However, the data showed that fathers' occupational level was related to the children's Word Discrimination achievement. The data further showed no significant relationship between the combination mothers'

TABLE 1

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN WORD  
KNOWLEDGE ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND FATHERS' OCCUPATIONAL LEVEL

Source	SS	df	MS	F
A	2.5334	1	2.5334	1.461
B	151.4150	2	75.7075	43.665**
A X B	15.7811	2	7.8906	4.551*
Error	1251.8251	722	1.7338	
Total	1421.5546	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

\*p < .02.

\*\*p < .01.

TABLE 2

CHILDREN'S METROPOLITAN WORD KNOWLEDGE ACHIEVEMENT TEST  
GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT  
STATUS AND FATHERS' OCCUPATIONAL LEVEL

Var. A	Var. B	No. Obs.	Mean Values
1	1	34	3.721
1	2	99	3.394
1	3	46	4.963
2	1	111	3.308
2	2	294	3.557
2	3	144	4.378

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

employment status and fathers' occupational level as a function of the children's Word Discrimination achievement.

Table 4 summarizes the children's MAT Word Discrimination mean achievement scores for the mothers' employment status and fathers' occupational level. These means did not vary significantly.

Table 5 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Reading achievement. However, the data showed that fathers' occupational level was related to the children's Reading achievement. The data further showed that the combination of mothers' employment status and fathers' occupational level was related to the children's Reading achievement.

Table 6 summarizes the children's MAT Reading achievement scores for mothers' employment status and fathers' occupational level. Achievement scores for children of employed mothers varied according to fathers' occupation. Children of employed mothers and professional fathers achieved the highest mean score, with children of employed mothers and unskilled and skilled fathers achieving mean scores in that order. Achievement scores for children of homemaking mothers also varied with fathers' occupation, but in the order: professional, skilled, unskilled. The children's mean achievement scores for both employed and homemaking mothers and fathers' occupational level were in the following descending order: employed mothers - professional fathers, homemaking mothers - profes-

TABLE 3

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN WORD DIS-  
CRIMINATION ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND FATHERS' OCCUPATIONAL LEVEL

Source	SS	df	MS	F
A	2.0207	1	2.0207	1.625
B	61.6691	2	30.8345	24.790**
A X B	3.1292	2	1.5646	1.258
Error	898.0412	722	1.2348	
Total	964.8602	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

\*\*p < .01.

TABLE 4

CHILDREN'S METROPOLITAN WORD DISCRIMINATION ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOY-  
MENT STATUS AND FATHERS' OCCUPATIONAL LEVEL

Var. A	Var. B	No. Obs.	Mean Values
1	1	34	3.709
1	2	99	3.588
1	3	46	4.509
2	1	111	3.521
2	2	294	3.589
2	3	144	4.160

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

TABLE 5

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN READING  
ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT STATUS  
AND FATHERS' OCCUPATIONAL LEVEL

Source	SS	df	MS	F
A	0.4879	1	0.4879	0.302
B	81.9849	2	40.9924	25.413**
A X B	10.8255	2	5.4127	3.356*
Error	1164.6130	722	1.6130	
Total	1257.9113	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

\*p < .05.

\*\*p < .01.

TABLE 6

CHILDREN'S METROPOLITAN READING ACHIEVEMENT TEST GRADE  
EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT STATUS  
AND FATHERS' OCCUPATIONAL LEVEL

Var. A	Var. B	No. Obs.	Mean Values
1	1	34	3.512
1	2	99	3.317
1	3	46	4.567
2	1	111	3.354
2	2	294	3.489
2	3	144	4.074

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

sional fathers, employed mothers - unskilled fathers, homemaking mothers - skilled fathers, homemaking mothers - unskilled fathers, and employed mothers - skilled fathers.

Table 7 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Spelling achievement. However, the data showed that fathers' occupational level was related to the children's Spelling achievement. The data further showed no significant relationship between the combination mothers' employment status and fathers' occupational level as a function of the children's Spelling achievement.

Table 8 shows the children's MAT Spelling mean achievement scores for mothers' employment status and fathers' occupational level. These means did not vary significantly.

Table 9 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Arithmetic Computation achievement. However, the data showed that fathers' occupational level was related to the children's Arithmetic Computation achievement. The data further showed no significant relationship between the combination mothers' employment status and fathers' occupational level as a function of the children's Arithmetic Computation achievement.

Table 10 shows the children's MAT Arithmetic Computation mean achievement scores for mothers' employment status and fathers' occupational level. These means did not vary

TABLE 7

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN SPELLING  
ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT STATUS  
AND FATHERS' OCCUPATIONAL LEVEL

Source	SS	df	MS	F
A	1.3855	1	1.3855	0.954
B	35.8985	2	17.9492	12.353**
A X B	3.2083	2	1.6041	1.104
Error	1049.0932	722	1.4530	
Total	1089.5855	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

\*\*p < .01.

TABLE 8

CHILDREN'S METROPOLITAN SPELLING ACHIEVEMENT TEST GRADE  
EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT STATUS  
AND FATHERS' OCCUPATIONAL LEVEL

Var. A	Var. B	No. Obs.	Mean Values
1	1	34	3.806
1	2	99	3.559
1	3	46	4.354
2	1	111	3.648
2	2	294	3.580
2	3	144	4.019

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.



TABLE 9

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN ARITHMETIC  
COMPUTATION ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND FATHERS' OCCUPATIONAL LEVEL

Source	SS	df	MS	F
A	0.6990	1	0.6990	1.793
B	19.0852	2	9.5426	24.474**
A X B	1.0201	2	0.5100	1.308
Error	281.5100	722	0.3899	
Total	302.3143	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

\*\*p < .01.

TABLE 10

CHILDREN'S METROPOLITAN ARITHMETIC COMPUTATION ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT  
STATUS AND FATHERS' OCCUPATIONAL LEVEL

Var. A	Var. B	No. Obs.	Mean Values
1	1	34	3.126
1	2	99	3.038
1	3	46	3.507
2	1	111	2.940
2	2	294	3.043
2	3	144	3.354

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

significantly.

Table 11 summarizes the findings which showed mothers' employment status was not related to the children's MAT Arithmetic Problem Solving and Concepts achievement. However, the data showed that fathers' occupational level was related to the children's Arithmetic Problem Solving and Concepts achievement. The data further showed no significant relationship between the combination mothers' employment status and fathers' occupational level, as a function of the children's Arithmetic Problem Solving and Concepts achievement.

Table 12 summarizes the children's MAT Arithmetic Problem Solving and Concepts mean achievement scores for mothers' employment status and fathers' occupational level. These means did not vary significantly.

#### Mothers' Employment Status and Family Size

Table 13 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Word Knowledge achievement. However, the data showed that family size was related to the children's Word Knowledge achievement. The data further showed no significant relationship between the combination mothers' employment status and family size as a function of the children's Word Knowledge achievement.

Table 14 shows the children's MAT Word Knowledge mean achievement scores for mothers' employment status and family

TABLE 11

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN ARITHMETIC  
PROBLEM SOLVING AND CONCEPTS ACHIEVEMENT TEST FOR MOTHERS'  
EMPLOYMENT STATUS AND FATHERS' OCCUPATIONAL LEVEL

Source	SS	df	MS	F
A	0.2407	1	0.2407	0.332
B	26.2213	2	13.1107	18.066**
A X B	2.1136	2	1.0568	1.456
Error	523.9644	722	0.7257	
Total	552.5400	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

\*\*p < .01.

TABLE 12

CHILDREN'S METROPOLITAN ARITHMETIC PROBLEM SOLVING AND CONCEPTS  
ACHIEVEMENT TEST GRADE EQUIVALENT MEANS FOR MOTHERS'  
EMPLOYMENT STATUS AND FATHERS' OCCUPATIONAL LEVEL

Var. A	Var. B	No. Obs.	Mean Values
1	1	34	3.253
1	2	99	3.189
1	3	46	3.839
2	1	111	3.274
2	2	294	3.330
2	3	144	3.681

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Fathers' Occupation: 1. Unskilled, 2. Skilled, 3. Professional.

TABLE 13

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN WORD  
KNOWLEDGE ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND FAMILY SIZE

Source	SS	df	MS	F
A	2.5334	1	2.5334	1.309
B	18.0673	2	9.0336	4.669**
A X B	3.8712	2	1.9356	1.000
Error	1397.0827	722	1.9350	
Total	1421.5546	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

\*\*p < .01.

TABLE 14

CHILDREN'S METROPOLITAN WORD KNOWLEDGE ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS'  
EMPLOYMENT STATUS AND FAMILY SIZE

Var. A	Var. B	No. Obs.	Mean Values
1	1	59	4.122
1	2	87	3.675
1	3	33	3.876
2	1	143	3.929
2	2	286	3.732
2	3	120	3.452

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

size. These means did not vary significantly.

Table 15 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Word Discrimination achievement. However, the data showed that family size was related to the children's Word Discrimination achievement. The data further showed no significant relationship between the combination mothers' employment status and family size as a function of the children's Word Discrimination achievement.

Table 16 shows the children's MAT Word Discrimination mean achievement scores for mothers' employment status and family size. These means did not vary significantly.

Table 17 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Reading achievement. However, the data showed that family size was related to the children's Reading achievement. The data further showed no significant relationship between the combination mothers' employment status and family size as a function of the children's Reading achievement.

Table 18 shows the children's MAT Reading mean achievement scores for mothers' employment status and family size. These means did not vary significantly.

Table 19 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Spelling achievement. The data further showed that family size was not related to the children's Spelling achievement,

TABLE 15

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN WORD  
DISCRIMINATION ACHIEVEMENT TEST FOR MOTHERS'  
EMPLOYMENT STATUS AND FAMILY SIZE

Source	SS	df	MS	F
A	2.0207	1	2.0207	1.535
B	8.3694	2	4.1847	3.179*
A X B	3.9967	2	1.9983	1.518
Error	950.4734	722	1.3164	
Total	964.8602	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

\*p < .05.

TABLE 16

CHILDREN'S METROPOLITAN WORD DISCRIMINATION ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS'  
EMPLOYMENT STATUS AND FAMILY SIZE

Var. A	Var. B	No. Obs.	Mean Values
1	1	59	4.071
1	2	87	3.672
1	3	33	3.909
2	1	143	3.849
2	2	286	3.743
2	3	120	3.535

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

TABLE 17

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN READING  
ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND FAMILY SIZE

Source	SS	df	MS	F
A	0.4879	1	0.4879	0.287
B	19.5353	2	0.7677	5.741**
A X B	9.4295	2	4.7147	2.771
Error	1228.4585	722	1.7015	
Total	1257.9112	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Small, 3. Large.

\*\*p < .01.

TABLE 18

CHILDREN'S METROPOLITAN READING ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS'  
EMPLOYMENT STATUS AND FAMILY SIZE

Var. A	Var. B	No. Obs.	Mean Values
1	1	59	3.954
1	2	87	3.445
1	3	33	3.785
2	1	143	3.822
2	2	286	3.649
2	3	120	3.287

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large

nor was the combination mothers' employment status and family size related to the children's Spelling achievement.

Table 20 shows the children's MAT Spelling mean achievement scores for mothers' employment status and family size. These means did not vary significantly.

Table 21 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Arithmetic Computation achievement. However, the data showed that family size was related to the children's Arithmetic Computation achievement. The data further showed no significant relationship between the combination mothers' employment status and family size as a function of the children's Arithmetic Computation achievement.

Table 22 shows the children's MAT Arithmetic Computation mean achievement scores for mothers' employment status and family size. These means did not vary significantly.

Table 23 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Arithmetic Problem Solving and Concepts achievement. The data further showed that family size was not related to the children's Arithmetic Problem Solving and Concepts achievement, nor was the combination mothers' employment status and family size related to the children's Arithmetic Problem Solving and Concepts achievement.

Table 24 shows the children's MAT Arithmetic Problem Solving and Concepts mean achievement scores for mothers' em-



TABLE 19

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN SPELLING  
ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND FAMILY SIZE

Source	SS	df	MS	F
A	1.3855	1	1.3855	0.925
B	3.8152	2	1.9075	1.274
A X B	3.2935	2	1.6468	1.100
Error	1081.0912	722	1.4974	
Total	1089.5854	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

TABLE 20

CHILDREN'S METROPOLITAN SPELLING ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS'  
EMPLOYMENT STATUS AND FAMILY SIZE

Var. A	Var. B	No. Obs.	Mean Values
1	1	59	3.897
1	2	87	3.695
1	3	33	3.958
2	1	143	3.815
2	2	286	3.723
2	3	120	3.547

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

TABLE 21

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN ARITHMETIC  
COMPUTATION ACHIEVEMENT TEST FOR MOTHERS' EMPLOY-  
MENT STATUS AND FAMILY SIZE

Source	SS	df	MS	F
A	0.6990	1	0.6990	1.700
B	2.6389	2	1.3194	3.208*
A X B	2.0458	2	1.0229	2.487
Error	296.9306	722	0.4113	
Total	302.3143	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

\*p < .05.

TABLE 22

CHILDREN'S METROPOLITAN ARITHMETIC COMPUTATION ACHIEVE-  
MENT TEST GRADE EQUIVALENT MEANS FOR MOTHERS'  
EMPLOYMENT STATUS AND FAMILY SIZE

Var. A	Var. B	No. Obs.	Mean Values
1	1	59	3.363
1	2	87	3.070
1	3	33	3.118
2	1	143	3.135
2	2	286	3.130
2	3	120	3.003

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

TABLE 23

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN ARITHMETIC  
PROBLEM SOLVING AND CONCEPTS ACHIEVEMENT TEST FOR  
MOTHERS' EMPLOYMENT STATUS AND FAMILY SIZE

Source	SS	df	MS	F
A	0.2407	1	0.2407	0.317
B	3.1541	2	1.5770	2.077
A X B	0.9991	2	0.4996	0.658
Error	548.1461	722	0.7592	
Total	552.5400	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

TABLE 24

CHILDREN'S METROPOLITAN ARITHMETIC PROBLEM SOLVING AND  
CONCEPTS ACHIEVEMENT TEST GRADE EQUIVALENT MEANS  
FOR MOTHERS' EMPLOYMENT STATUS AND FAMILY SIZE

Var. A	Var. B	No. Obs.	Mean Values
1	1	59	3.525
1	2	87	3.268
1	3	33	3.352
2	1	143	3.495
2	2	286	3.401
2	3	120	3.331

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Family Size: 1. Small, 2. Medium, 3. Large.

ployment status and family size. These means did not vary significantly.

Mothers' Employment Status and the Children's Intelligence

Table 25 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Word Knowledge achievement. However, the data showed that the children's intelligence was related to the children's Word Knowledge achievement. The data further showed no significant relationship between the combination mothers' employment status and the children's intelligence as a function of the children's Word Knowledge achievement.

Table 26 shows the children's MAT Word Knowledge mean achievement scores for mothers' employment status and the children's intelligence. These means did not vary significantly.

Table 27 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Word Discrimination achievement. However, the data showed that the children's intelligence was related to the children's Word Discrimination achievement. The data further showed no significant relationship between the combination mothers' employment status and the children's intelligence as a function of the children's Word Discrimination achievement.

Table 28 shows the children's MAT Word Discrimination mean achievement scores for mothers' employment status and

TABLE 25

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN WORD  
KNOWLEDGE ACHIEVEMENT TEST FOR MOTHERS' EMPLOY-  
MENT STATUS AND CHILDREN'S INTELLIGENCE

Source	SS	df	MS	F
A	2.5334	1	2.5334	1.498
B	200.3080	2	100.1540	59.225**
A X B	2.2336	2	1.1168	0.660
Error	1220.9468	722	1.6911	
Total	1426.0218	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

\*\*p < .01.

TABLE 26

CHILDREN'S METROPOLITAN WORD KNOWLEDGE ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOY-  
MENT STATUS AND CHILDREN'S INTELLIGENCE

Var. A	Var. B	No. Obs.	Mean Values
1	1	23	3.087
1	2	120	3.734
1	3	36	4.769
2	1	111	3.006
2	2	360	3.703
2	3	78	4.829

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

TABLE 27

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN WORD  
DISCRIMINATION ACHIEVEMENT TEST FOR MOTHERS' EMPLOY-  
MENT STATUS AND CHILDREN'S INTELLIGENCE

Source	SS	df	MS	F
A	2.0207	1	2.0207	1.700
B	98.6721	2	49.3361	41.507**
A X B	5.9910	2	2.9955	2.520
Error	858.1764	722	1.1886	
Total	964.8602	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

\*\*p < .01.

TABLE 28

CHILDREN'S METROPOLITAN WORD DISCRIMINATION ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOY-  
MENT STATUS AND CHILDREN'S INTELLIGENCE

Var. A	Var. B	No. Obs.	Mean Values
1	1	23	3.239
1	2	120	3.872
1	3	36	4.153
2	1	111	3.195
2	2	360	3.696
2	3	78	4.612

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

the children's intelligence. These means did not vary significantly.

Table 29 summarizes the findings which showed that mothers' employment was not related to the children's MAT Reading achievement. However, the data showed that the children's intelligence was related to the children's Reading achievement. The data further showed that the combination of mothers' employment status and the children's intelligence was related to the children's Reading achievement.

Table 30 shows the children's MAT Reading mean achievement scores in terms of mothers' employment status and the children's intelligence. Achievement scores for children of employed mothers varied according to the children's intelligence. The children with above average intelligence and employed mothers achieved the highest mean scores, with average intelligence and below average intelligence achieving mean scores in that order. Achievement scores for children of homemaking mothers varied according to the children's intelligence in the same order as children of employed mothers. The children's mean achievement scores for both employed and homemaking mothers and the children's intelligence were in the following descending order: employed mothers - above average intelligence, homemaking mothers - above average intelligence, employed mothers - average intelligence, homemaking mothers - average intelligence, employed mothers - below average intelligence, and homemaking mothers - below average

TABLE 29

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN READING  
ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S INTELLIGENCE

Source	SS	df	MS	F
A	0.4879	1	0.4879	0.330
B	181.1075	2	90.5537	61.307**
A X B	9.8891	2	4.9445	3.348*
Error	1066.4268	722	1.4770	
Total	1257.9113	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

\*p < .05.

\*\*p < .01.

TABLE 30

CHILDREN'S METROPOLITAN READING ACHIEVEMENT TEST GRADE  
EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S INTELLIGENCE

Var. A	Var. B	No. Obs.	Mean Values
1	1	23	2.948
1	2	120	3.666
1	3	36	4.172
2	1	111	2.879
2	2	360	3.586
2	3	78	4.800

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.



intelligence.

Table 31 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Spelling achievement. However, the data showed that the children's intelligence was related to the children's Spelling achievement. The data further showed no significant relationship between the combination mothers' employment status and the children's intelligence as a function of the children's Spelling achievement.

Table 32 shows the children's MAT Spelling mean achievement scores for mothers' employment status and the children's intelligence. These means did not vary significantly.

Table 33 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Arithmetic Computation achievement. However, the data showed the children's intelligence was related to the children's Arithmetic Computation achievement. The data further showed no significant relationship between the combination mothers' employment status and the children's intelligence as a function of the children's Arithmetic Computation achievement.

Table 34 shows the children's MAT Arithmetic Computation mean achievement scores for mothers' employment status and children's intelligence. These means did not vary significantly.

Table 35 summarizes the findings which showed that mothers' employment status was not related to the children's MAT

TABLE 31

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN SPELLING  
ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S INTELLIGENCE

Source	SS	df	MS	F
A	1.3855	1	1.3855	0.984
B	67.0836	2	33.5418	23.830**
A X B	4.8652	2	2.4326	1.728
Error	1016.2511	722	1.5076	
Total	1089.5854	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

\*\*p < .01.

TABLE 32

CHILDREN'S METROPOLITAN SPELLING ACHIEVEMENT TEST GRADE  
EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S INTELLIGENCE

Var. A	Var. B	No. Obs.	Mean Values
1	1	23	3.404
1	2	120	3.806
1	3	36	4.083
2	1	111	3.323
2	2	360	3.657
2	3	78	4.494

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

TABLE 33

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN ARITHMETIC  
COMPUTATION ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S INTELLIGENCE

Source	SS	df	MS	F
A	0.6990	1	0.6990	1.875
B	32.5346	2	16.2673	43.626**
A X B	0.1383	2	0.0692	9.185
Error	269.2189	722	0.3729	
Total	302.5908	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

\*\*p < .01.

TABLE 34

CHILDREN'S METROPOLITAN ARITHMETIC COMPUTATION ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S INTELLIGENCE

Var. A	Var. B	No. Obs.	Mean Values
1	1	23	2.722
1	2	120	3.182
1	3	36	3.444
2	1	111	2.776
2	2	360	3.116
2	3	78	3.513

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

Arithmetic Problem Solving and Concepts achievement. However, the data showed that the children's intelligence was related to the children's Arithmetic Problem Solving and Concepts achievement. The data further showed no relationship between the combination mothers' employment status and the children's intelligence as a function of the children's Arithmetic Problem Solving and Concepts achievement.

Table 36 shows the children's MAT Arithmetic Problem Solving and Concepts mean achievement scores for mothers' employment status and the children's intelligence. These means did not vary significantly.

#### Mothers' Employment Status and the Children's Sex

Table 37 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Word Knowledge achievement. However, the data showed that the children's sex was related to the children's achievement. The data further showed no significant relationship between the combination mothers' employment status and the children's sex as a function of the children's Word Knowledge achievement.

Table 38 shows the children's MAT Word Knowledge mean achievement scores for mothers' employment status and the children's sex. These means did not vary significantly.

Table 39 summarizes the findings which showed that mothers' employment status was not related to the children's MAT

TABLE 35

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN ARITHMETIC PROBLEM SOLVING AND CONCEPTS ACHIEVEMENT TEST FOR MOTHERS' EMPLOYMENT STATUS AND CHILDREN'S INTELLIGENCE

Source	SS	df	MS	F
A	0.2407	1	0.2407	0.356
B	61.3200	2	30.6600	45.392**
A X B	3.3059	2	1.6529	2.447
Error	487.6734	722	0.6754	
Total	552.5400	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

\*\*p < .01.

TABLE 36

CHILDREN'S METROPOLITAN ARITHMETIC PROBLEM SOLVING AND CONCEPTS ACHIEVEMENT TEST GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT STATUS AND CHILDREN'S INTELLIGENCE

Var. A	Var. B	No. Obs.	Mean Values
1	1	23	2.757
1	2	120	3.402
1	3	36	3.644
2	1	111	2.920
2	2	360	3.436
2	3	78	3.990

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Intelligence: 1. Below Average, 2. Average, 3. Above Average.

TABLE 37

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN WORD  
KNOWLEDGE ACHIEVEMENT TEST FOR MOTHERS'  
EMPLOYMENT STATUS AND CHILDREN'S SEX

Source	SS	df	MS	F
A	2.5334	1	2.5334	1.305
B	11.0454	1	11.0454	5.689*
A X B	2.2376	1	2.2376	1.152
Error	1405.7382	724	1.9416	
Total	1421.5546	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

\*p < .02.

TABLE 38

CHILDREN'S METROPOLITAN WORD KNOWLEDGE ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS'  
EMPLOYMENT STATUS AND CHILDREN'S SEX

Var. A	Var. B	No. Obs.	Mean Values
1	1	94	3.8355
1	2	85	3.8860
2	1	290	3.5760
2	2	259	3.8860

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

Word Discrimination achievement. However, the data showed that the children's sex was related to the children's Word Discrimination achievement. The data further showed no significant relationship between the combination mothers' employment status and the children's sex as a function of the children's Word Discrimination achievement.

Table 40 shows the children's MAT Word Discrimination mean achievement scores for mothers' employment status and the children's sex. These means did not vary significantly.

Table 41 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Reading achievement. However, the data showed that the children's sex was related to the children's Reading achievement. The data further showed no significant relationship between the combination mothers' employment status and the children's sex as a function of the children's Reading achievement.

Table 42 shows the children's MAT Reading mean achievement scores for mothers' employment status and the children's sex. These means did not vary significantly.

Table 43 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Spelling achievement. However, the data showed that the children's sex was related to the children's Spelling achievement. The data further showed no significant relationship between the combination mothers' employment status and the children's sex as a function of the children's Spelling

TABLE 39

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN WORD  
DISCRIMINATION ACHIEVEMENT TEST FOR MOTHERS'  
EMPLOYMENT STATUS AND CHILDREN'S SEX

Source	SS	df	MS	F
A	2.0207	1	2.0207	1.533
B	5.4343	1	5.4343	4.123*
A X B	2.8647	1	2.8647	2.173
Error	954.5395	724	1.3184	
Total	964.8602	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

\*p < .05.

TABLE 40

CHILDREN'S METROPOLITAN WORD DISCRIMINATION ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS'  
EMPLOYMENT STATUS AND CHILDREN'S SEX

Var. A	Var. B	No. Obs.	Mean Values
1	1	94	3.870
1	2	85	3.822
2	1	290	3.610
2	2	259	3.854

Variable A: Mothers' Employment: 1. Employed; 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.



TABLE 41

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN  
READING ACHIEVEMENT TEST FOR MOTHERS' EMPLOY-  
MENT STATUS AND CHILDREN'S SEX

Source	SS	df	MS	F
A	0.4879	1	0.4879	0.287
B	23.1070	1	23.1070	13.615**
A X B	5.5862	1	5.5862	3.292
Error	1228.8301	724	1.6971	
Total	1257.9112	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

\*\*p < .01.

TABLE 42

CHILDREN'S METROPOLITAN READING ACHIEVEMENT TEST  
GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S SEX

Var. A	Var. B	No. Obs.	Mean Values
1	1	94	3.652
1	2	85	3.701
2	1	290	3.400
2	2	259	3.857

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

achievement.

Table 44 shows the children's MAT Spelling mean achievement scores for mothers' employment status and the children's sex. These means did not vary significantly.

Table 45 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Arithmetic Computation achievement. The data further showed that the children's sex was not related to the children's Arithmetic Computation achievement, nor was the combination mothers' employment status and the children's sex related to the children's Arithmetic Computation achievement.

Table 46 shows the children's MAT Arithmetic Computation mean achievement scores for mothers' employment status and the children's sex. These means did not vary significantly.

Table 47 summarizes the findings which showed that mothers' employment status was not related to the children's MAT Arithmetic Problem Solving and Concepts achievement. The data further showed that the children's sex was not related to the children's Arithmetic Problem Solving and Concepts achievement, nor was the combination mothers' employment status and the children's sex related to the children's Arithmetic Problem Solving and Concepts achievement.

Table 48 shows the children's MAT Arithmetic Problem Solving and Concepts mean achievement scores for mothers' employment status and the children's sex. These means did

TABLE 43

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN  
SPELLING ACHIEVEMENT TEST FOR MOTHERS'  
EMPLOYMENT STATUS AND CHILDREN'S SEX

Source	SS	df	MS	F
A	1.3855	1	1.3855	0.936
B	15.5528	1	15.5528	10.506**
A X B	0.8783	1	0.8783	0.593
Error	1071.7688	724	1.4803	
Total	1089.5855	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

\*\*p < .01.

TABLE 44

CHILDREN'S METROPOLITAN SPELLING ACHIEVEMENT TEST  
GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S SEX

Var. A	Var. B	No. Obs.	Mean Values
1	1	94	3.730
1	2	85	3.899
2	1	290	3.552
2	2	259	3.885

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

TABLE 45

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN ARITHMETIC  
COMPUTATION ACHIEVEMENT TEST FOR MOTHERS'  
EMPLOYMENT STATUS AND CHILDREN'S SEX

Source	SS	df	MS	F
A	0.6990	1	0.6990	1.682
B	0.0745	1	0.0475	0.179
A X B	0.6296	1	0.6296	1.515
Error	300.9112	724	0.4156	
Total	302.3142	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

TABLE 46

CHILDREN'S METROPOLITAN ARITHMETIC COMPUTATION ACHIEVEMENT  
TEST GRADE EQUIVALENT MEANS FOR MOTHERS' EMPLOYMENT  
STATUS AND CHILDREN'S SEX

Var. A	Var. B	No. Obs.	Mean Values
1	1	94	3.234
1	2	85	3.111
2	1	290	3.097
2	2	259	3.110

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

TABLE 47

ANALYSIS OF VARIANCE OF CHILDREN'S METROPOLITAN ARITHMETIC  
PROBLEM SOLVING AND CONCEPTS ACHIEVEMENT TEST FOR  
MOTHERS' EMPLOYMENT STATUS AND CHILDREN'S SEX

Source	SS	df	MS	F
A	0.2407	1	0.2407	0.316
B	0.3018	1	0.3018	0.396
A X B	0.7346	1	0.7346	0.965
Error	551.2629	724	0.7614	
Total	552.5400	727		

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

TABLE 48

CHILDREN'S METROPOLITAN ARITHMETIC PROBLEM SOLVING AND CON-  
CEPTS ACHIEVEMENT TEST GRADE EQUIVALENT MEANS FOR  
MOTHERS' EMPLOYMENT STATUS AND CHILDREN'S SEX

Var. A	Var. B	No. Obs.	Mean Values
1	1	94	3.440
1	2	85	3.288
2	1	290	3.412
2	2	259	3.408

Variable A: Mothers' Employment: 1. Employed, 2. Home-making.

Variable B: Children's Sex: 1. Male, 2. Female.

not vary significantly.

Multiple regressions, as shown in Table 49, support the idea that mothers' employment status has no significant predictive relationship to the children's MAT achievement. The children's intelligence is the best single predictor of achievement. Fathers' occupational level, although consistently less than intelligence, is the next best predictor.

TABLE 49  
BETA MATRIX FOR MULTIPLE R'S

ROW	1	2	3	4	5	6
RSQ	0.20	0.13	0.19	0.08	0.14	0.13
MULT	0.44	0.37	0.44	0.29	0.37	0.36
RATI	35.54	22.43	34.15	12.77	23.09	21.61
PROB	0.00	0.00	0.00	0.00	0.00	0.00
BETA						
1	0.01	0.01	-0.02	0.01	0.02	-0.05
2	0.22	0.16	0.15	0.09	0.16	0.12
3	-0.06	-0.05	-0.08	-0.03	-0.05	-0.03
4	0.32	0.28	0.34	0.22	0.29	0.31
5	0.10	0.08	0.14	0.12	-0.01	-0.02
df 1	5.00					
df 2	722.00					

Horizontal Numbers: Metropolitan Achievement Tests: 1. Word Knowledge, 2. Word Discrimination, 3. Reading, 4. Spelling, 5. Arithmetic Computation, 6. Arithmetic Problem Solving and Concepts.

Vertical Numbers: Variables: 1. Mothers' Employment Status, 2. Fathers' Occupational Level, 3. Family Size, 4. Children's Intelligence, 5. Children's Sex.

## CHAPTER IV

### DISCUSSION

This study shows that the mothers' employment status has no relationship with the children's MAT achievement for third grade students in the Bellingham Public Schools. This is consistent with many of the studies discussed earlier (Burchinal and Roseman, 1961; Williamson, 1970; and Hitchcock, 1959). It also supports other studies, if we assume that achievement test scores are related to grade point average (Nelson, 1969 and Nye, 1959). This finding does not agree with Nye and Hoffman (1963), if we assume that achievement scores are related to teacher's ratings. The studies referred to did not examine the achievement of 3rd grade students as expressed by a standard achievement test.

There was a significant relationship between the fathers' occupation and the children's achievement in the areas of: Word Knowledge, Word Discrimination, Reading, Spelling, Arithmetic Computation, and Arithmetic Problem Solving and Concepts. The only study that mentioned fathers' occupation was an indirect reference to the control of socio-economic status by Nye (1959). Socio-economic status was not discussed as a variable in his study.

There was a significant relationship between family size

and the children's achievement except in the areas of Spelling and Arithmetic Problem Solving and Concepts. This was not discussed in any of the studies cited earlier. However, Williamson (1970) did find that homemaking mothers tended to have larger families than employed mothers.

This study, as would be expected, showed a significant relationship between intelligence and the children's achievement. Children with higher intelligence scored higher on the achievement test than children with lower intelligence regardless of mothers' employment status. Intelligence was not discussed, with relationship to achievement, in any of the studies cited earlier. However, Hitchcock (1959) found no difference between employed mothers' children's intelligence and homemaking mothers' children's intelligence.

There was a significant relationship between the children's sex and achievement. Girls of both employed mothers and homemaking mothers did better than boys in the achievement areas of Word Knowledge, Word Discrimination, Reading and Spelling. These results support Hitchcock (1959), Nye (1959) and Williamson (1970).

The multiple correlations showed that MAT achievement was best predicted by intelligence scores and fathers' occupational level. The function of intelligence as a predictor has long been known. None of the studies reported used multiple correlations to evaluate their data.

The present study did not determine how long the mothers



had previously been employed, the motivation behind their employment, or the mothers' attitude toward employment. Each of these limitations deserve attention in further studies.

## CHAPTER V

### SUMMARY

This study undertook to examine the relationship between mothers' employment status and the children's achievement. 728 third grade students in the Bellingham Public Schools were used as subjects. The data was analyzed by two way analysis of variance and multiple correlation procedures. There was no relationship found between the mothers' employment status and the children's achievement. However, there was a relationship between fathers' occupational level, family size, children's intelligence, and children's sex and some of the achievement tests.

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