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INFLUENCES OF MOBILITY ON THE ACADEMIC PROGRESS OF PUPILS IN THE FOURTH AND SIXTH GRADES OF QUANTICO POST ELEMENTARY SCHOOL

A Thesis

Presented to

the Graduate Faculty of

The University of Richmond

In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Education

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by

Gladys Taylor Dollins

August 1953

Approved 8/4/53 E. S. Overton

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PREFACE

This thesis was prepared under the supervision of Doctor Edward F. Overton, Professor of Education and Dean of the Summer School of the University of Richmond. The author wishes to express her sincere gratitude to Doctor Overton for his aid an encouragement, and to Mr. Austin Grigg, Assistant Professor of Psychology at the University of Richmond, for his help and guidance, and to Doctor Jack H. Boger, Assistant Director of Research, Richmond Public Schools, for making available the necessary data. The author is also grateful to Mr. Alvin Thoms, Principal of Ginter Park School, Mr. Roland Galvin, Principal of Westhampton School, Miss Mary A. Goodwin, Principal of Patrick Henry School, Mr. H.R. Ecles, Principal of Robert E. Lee School, and Mr. William Wert Brock, Jr., Principal of Albert H. Hill School, for their help and cooperation in this study.

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CHAPTER I

INTRODUCTION

The purpose of this study is to determine to what extent mobility of pupils at the elementary school level affects their academic achievement. Is there any correlation between the number of moves and retardation in academic achievement?

It has been the opinion of the teachers and administrators of the Quantico Post Elementary School that the pupils who are forced to transfer so frequently are handicapped by the many changes. They have found it necessary at all grade levels to do a great deal of individual work as they have found these pupils to be very retarded in specific skills and fundamentals.

Not out of line with these opinions is the explanation by Percival:

> "Changing schools, especially during term time, frequently has serious consequences. School is not merely a place where the child goes and absorbs a certain amount of knowledge; simultaneously with this activity he must learn to adjust to his classmates, the teachers, other children on the playground, teaching methods and academic requirements of all sorts. These requirements are not simple for anyone, and perhaps less so for the young child. They take time; many children may require months, a semester, or a year to find themselves and their place. If in the course of this attempt to make an adjustment the child is transferred to another school he may find himself forced to begin over again. The academic standards vary and different school systems, sometimes schools within the same system, are loath to accept the judgement of another school. Therefore they "try" the child in a lower grade, or refuse to recognize a promotion when the transfer is made before the beginning of a new year. For some children this is all right; it may retard them, but they or their parents are not concerned. For other children, even one such unpleasant experience is discouraging. Multiply

such an experience only two or three times, and one cannot help but sympathize with one of our cases who said, "What's the use? I don't try to do anything." This boy has been in the 1B grade three terms and the 1A twice, although his mental ability was slightly above average. In this two and a half years he had changed school four times. He had been referred to our clinic by the school principal, who felt that he must be so retarded mentally that he should be sent to a special class.

As an example of reasons for failure given by teachers in city and county schools in Percival's study of 9,342 failures in the state of California about 18% were due to change of school."[1]

"Keys reports the following percentage of 683 repeaters as having changed schools:

Grade	Percentage
1	29
2	50
3	42
4	49
5	41
6	27
7	43
8	28
9	28

Of course these data cannot be taken to mean that changing school was the only reason for the child's retardation, but they do indicate something of the seriousness of this factor.[2]

"Discovery of such school-changing as a contributing factor in retardation can at least be made the basis for recommending irregular promotions and special attention. The difficulties for the child inherent in changing school should suggest to officials careful individual study of the best method of placing

1 Walter Percival in Louttit, C. M. Clinical Psychology of Children's Behavior, p. 246-247, Harper and Bros., New York 1947.

2 Charles H. Keys, "Progress Through the Grades of City Schools," Teach-Coll. Contrib. Educ. No. 42, 1911, cited by C. M. Louttit, Clinical Psychology of Children's Behavior, p. 249, Harper Bros., New York 1947.

* Although this is an old study the author has not been able to find any more recent study that would in any way make this invalid.

> the transfers. But the school cannot be held totally responsible -- changing schools means changing homes. An attempt should be made to show parents the advantages to the child of living in one community long enough for him to make some advance. Probably this stability is most desirable in the first four or five grades; after this, changing schools is not so potentially harmful."[3]

The author has chosen a sixth grade consisting of 24 pupils and two fourth grades consisting of 56 pupils from the Quantico Post Elementary School, Marine Corps Schools, Quantico, Virginia for this study.

The children who attend the Quantico Post Elementary School are the dependents of military personnel and civil service workers who reside on the Marine Corps Schools. Due to the fact that this military post is maintained mainly for the purpose of training officers in the Marine Corps a large percentage of the officers are stationed here for only one year. There are some schools for the marines here that last anywhere from several weeks to several months. Two years is about the longest they ever remain at any one station; of course this situation is aggrevated during war times or time of police action. Therefore it is necessary for the children of these people to be constantly transferred from one school to another in different states, United States possessions, and some foreign countries.

The author has given the California Short-Form Test of Mental Maturity - Elementary Grades 4-5-6-7-8 1950 S-Form and the California Achievement Tests Complete Battery - Elementary Grades 4-5-6 Form AA to this group of children. Each of these pupils has been matched in age,

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[3] Walter Percival, "A Study of the Causes and Subjects of School Failures", California Curriculum Survey Committee Report, 1926, Chap. 19, cited by C. M. Louttit, Clinical Psychology of Children's Behavior, p. 249, Harper Bros., New York, 1947.

sex, I. Q. and socio-economic background with a pupil in a stable school situation who has been given the same tests at approximately the same time. In the matching of the pupils the author has allowed a deviation of 5 points in I. Q. and 5 months in the chronological age when it was necessary.

It was the opinion of the administrators of the Quantico Post Elementary School, Marine Corps School, Quantico, Virginia and Dr. J. H. Boger, the Assistant Director of Research for the Richmond Public Schools that the Westhampton School, Patrick Henry School, Albert H. Hill School, Robert E. Lee School, and the Ginter Park School in Richmond, Virginia were similar in socio-economic status to the Quantico Post Elementary School at Quantico, Virginia. Therefore the pupils of the Quantico Post Elementary School were matched with pupils from these schools.

The California Short-Form Test of Mental Maturity, Elementary Grades 4-5-6-7-8 1950 S-Form and the California Achievement Tests Complete Battery, Reading - Arithmetic - Language, Elementary Grades 4-5-6, Form AA were chosen because of their reliability and validity.

> "The coefficients of reliability of the California Short-Tests of Mental Maturity, Elementary, reported below are based on 1,000 pupils in grades 4 to 6. These reliability coefficients have been computed by the split-halves method and corrected by the Spearman-Brown formula. These coefficients and the standard errors of measurement expressed in months of mental age are as follows:

TESTS	Grades 4-6 RELIABILITY	S. E. MEAS.
Total Mental Factors	.952	3.5
Language Factors	.948	3.7
Non-language Factors	.910	4.8
Spatial Relationships	.867	5.8
Logical Reasoning	.872	5.7
Numerical Reasoning	.897	5.1
Verbal Concepts	.934	4.1

No. of cases----------1,000
S. D. (M. A. in Mo.)---------- 16

The standard errors of measurements of the I. Q.'s, determined from the same data are as follows:

Grades 4-6

TESTS	S. E. MEAS. OF I. Q.'S
Total Mental Factors	3.5
Language Factors	3.7
Non-language Factors	4.8

Since there are no purely objective criteria for establishing the validity of intelligence or mental maturity tests, the validity of such tests must be estimated in other ways. The original two-period California Test of Mental Maturity, of which the California Short-Form is a one-period edition, was designed to measure, by group methods, most of the types of mental processes which are sampled by the individual Binet. Like the Long-Form, the California Short-Form consists of five series of tests of increasing difficulty. A comprehensive analysis of the Stanford Binet was made by Dr. Elizabeth T. Sullivan and her results were embodied in a record form entitled, 'A Psychographic Record Blank'.

From this conceptual framework, individual test items were prepared and subjected to statistical analysis to determine difficulty and correlation with criteria such as the Binet mental age and the California Test of Mental Maturity total scores. Intercorrelations among the separate tests were computed and the test data were also factor-analyzed by the Thurstone Centroid Method. The total mental factors score has been found by the author and other investigators to correlate as high or higher with the individual Stanford-Binet than any other one-period mental ability test."[4]

"Since coefficients of reliability for reading, arithmetic, and language for each form of the California Achievement Tests, Elementary Battery, and for the Total Test (Complete Battery) are reported below. They have been determined by averaging the intercorrelations of the different forms of the subject tests and for the Complete Battery for single grade range (Grade 5). These coefficients and the standard errors of measurement expressed in terms of grade placements are as follows:

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4 Elizabeth T. Sullivan, Willis W. Clark, and Earnest W. Tiegs, "California Test Bureau Manual", California Test Bureau, p-4, 1950, 5916 Hollywood Boulevard, Los Angeles 28, California.

TESTS	RELIABILITY	S. E. MEAS.
Reading Vocabulary	.88	0.50
Reading Comprehension	.93	0.39
Total Reading	.93	0.39
Arithmetic Reasoning	.89	0.39
Arithmetic Fundamentals	.96	0.20
Total Arithmetic	.95	0.25
Mechanics of English and Grammer	.90	0.49
Spelling	.89	0.45
Total Language	.95	0.28
Total Test (Complete Battery)	.97	0.22

Because of the limited number of items (10 to 25), scores on the sections of each test should be used only as guides to indicate the presence of pupil difficulties in the major diagnostic areas.

The foregoing information is typical of that for other grades. All forms of the California Achievement Tests, Elementary Battery, possess a high degree of validity. Scores made on these tests show accurately the degree to which the pupil has mastered the fundamental skills measured by the tests.

The selection of items, on which the validity depends, is simplified in these tests because they measure some of the most tangible and easily identifiable objectives of the curriculum. Curricula in science and social studies may differ widely in different geographic areas; but the fundamental skills or tools of learning are relatively similar in all areas. Consequently, regardless of the area, scores on these tests will show the mastery of the fundamental skillls by the pupils in terms of grade placements and percentiles achieved by the population used standardizing these tests. "

"The items of the California Achievement Tests, Elementary Battery, have been developed over a period of years through four editions. The items in the original edition were selected after careful study of the curriculum objectives of the most modern city and state courses of study. A large number of items were tried out in widely separated geographic areas of the United States. Those items which proved their value were selected. The later 1937, 1943, 1949, and 1950 editions were based on tests given to more than 100,000 pupils in schools throughout the United States.

Many studies have been made of the individual test items in the various tests under a wide variety of conditions. With very few exceptions, the value of the individual items has been repeatedly vindicated, and they have been retained in the tests. In the few instances where the value of an individual item has been in question, it has been dropped and replaced by another."[5]

5 Earnest Tiegs and Willis W. Clark, "California Test Bureau Manual", California Test Bureau, 5916 Hollywood Boulevard, Los Angeles 28, California, 1951, p-5.

In preparation for this study, it was necessary to determine what significant work had been done in this field. After consulting with members of the staff of the Virginia State Board of Education and the Federal Office of Education no previous works were uncovered on the children of military personnel. The author was able to find a great deal written on the children of migratory workers and their lack of educational opportunities. Wattenburg[6] points out the natural tendency for schools to concentrate attention on the potential stay-at-home in preference to the potential migrant. In almost every state there are citizens who receive their preparation for life in the schools of other states. Martin[7] tells how a Michigan community provided educational and health services for migrant workers and their children.

In so far as the author has been able to discover there have been no studies made to determine to what degree the children of these migratory workers are retarded. According to Earl James McGrath, U. S. Commissioner of Education, "The Office of Education, as a Federal Agency, should be charged with the responsibility of organizing a comprehensive and thorough study of the present educational opportunities, or the lack of them, for children of migrant workers."[8]

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6 William W. Wattenburg, "Education for Migration", The School Review, 56: 325-331, June 1948.

7 Frances Martin, "Spring and the Migrants", Educational Leadership, 8: 394-98, April 1951.

8 James Earl McGrath, "Crucial National Problems in Education", School Life, Vol. 35 No. 7, April 1953, p. 107.

Form I, Appendix A was designed by the author in such a way as to be most useful in collection of the data to determine the degree of mobility of the pupils used in this study.

CHAPTER II

BACKGROUND OF SCHOOLS USED IN THIS STUDY

The Quantico Post Elementary School is located on the Marine Corps Schools, Quantico, Virginia. It is maintained and supported by the United States Government through the Office of Education, Federal Security Agency, Washington, D. C.

According to Public Law 874-81st Congress, Chapter 1124-2D Session, H. R. 7940, Section 6:

> "In the case of children who reside on Federal property- .....(2) if it is the judgement of the Commissioner, after he has consulted with the appropriate State educational agency, that no local educational agency is able to provide suitable free public education for such children, the Commissioner shall make such arrangements (other than arrangements with respect to the acquisition of land, the erection of facilities, interests, or debt service) as may be necessary to provide free public education for such children. To the maximum extent practicable, such education shall be comparable to free public education provided for children in comparable communities in the State."[1]

To further clarify Public Law 874 the Federal Security Agency, Office of Education, Washington, D. C. issued Bulletin No. 12, July 15, 1951. According to this bulletin:

> "Education provided for children residing on Federal property shall be comparable to free public education offered by other communities of the State when the following factors in the schools of the communities being compared would, to the maximum extent practicable be equivalent:
>
> a. Qualifications of supervisors, principals and teachers
> b. Number of pupils per teacher
> c. Curriculum

---

1 Public Law 874- 81st Congress, Chapter 1124- 2D Session, H. R. 7940, Section 6, p. 8.

d. Accreditation
e. Transportation service, and
f. Length of school year

Section C, part 4, The Chief State Educational Officer is requested to comment on the proposal recommending approval or disapproval, giving his reasons therefor and to forward one copy with his and the Field Representative's recommendations to the Commissioner of Education. The Chief State Educational Officer and the Field Representative may submit a joint recommendation if properly signed by each."[2]

The children who attend the Quantico Post Elementary School are the dependents of military personnel and civil service employees who are stationed at the Marine Corps Schools, Quantico, Virginia and residing on Federal property.

The Quantico Post Elementary School is housed in a brick building with sixteen classrooms, a multi-purpose room, and a library. There is an enrollment of 410 pupils who receive instruction from the first through the sixth grade. There are 15 classroom teachers, one principal, one remedial teacher who gives special instruction in reading to children who have reading problems (she also substitutes in any classroom when the teacher is absent), one art teacher, one music teacher, and one physical education instructor - each of whom gives one half of her time to the elementary school. There is an average of 27 pupils to each classroom.

2 Bulletin No 12, June 15, 1951, "School Assistance in Federally Affected Areas", Federal Security Agency, Office of Education, Washington, D. C., Section C, part 4, p. 8.

ROBERT E. LEE SCHOOL

Robert E. Lee School is located at 3101 Kensington Avenue, Richmond, Virginia. There are 716 pupils enrolled in the school. Instruction begins with Junior Primary and goes through the sixth grade. The faculty consists of 24 classroom teachers, one principal, a nurse, who is shared with one other school, an art teacher, who is shared with one other school, a librarian, two music teachers, one vocal and one instrumental, who are shared with another school, and one physical education instructor. They have an average of 29 pupils per classroom.

ALBERT H. HILL SCHOOL

The Albert H. Hill school is located at 3400 Patterson Avenue, Richmond, Virginia. Instruction begins with the Junior Primary and goes through the Junior High school. There are 904 pupils enrolled in the school. The faculty consists of 16 elementary classroom teachers, 23 junior high school teachers, one principal, one assistant principal, two music teachers, one instrumental and one vocal, two physical education instructors, and two counselors who teach two periods each day and spend the rest of the day as counselors. There is an average of 25 pupils per classroom.

PATRICK HENRY SCHOOL

The Patrick Henry School is located at 3411 Semmes Avenue, Richmond, Virginia. There are 891 pupils enrolled in the school. Instruction begins with the Junior Primary and goes through the sixth grade. The faculty consists of 28 classroom teachers, one principal, one music teacher, one art teacher, one physical education instructor, a nurse, and one librarian. The special teachers are shared with one other school. There is an average of 32 pupils per classroom.

GINTER PARK SCHOOL

The Ginter Park School is located at 3817 Chamberlayne Avenue, Richmond, Virginia. There are 1,100 pupils enrolled in the school. Instruction begins with the Junior Primary and goes through the sixth grade. The faculty consists of 35 classroom teachers, four special teachers for art, music and physical education, one librarian, a nurse, a principal and an assistant principal. There is an average of 31 pupils to a classroom.

WESTHAMPTON JUNIOR HIGH SCHOOL

The Westhampton Junior High School is located at 5800 Patterson Avenue, Richmond, Virginia. There is a total enrollment of 888 pupils in the school with 664 in the elementary school. The faculty for the elementary school consists of 22 classroom teachers, one librarian, five special teachers for art, music and physical education, who serve both the junior high school and the elementary school, a part time nurse, and a counselor. There is an average of 30 pupils per classroom in the elementary school.

CHAPTER III

DEGREE OF MOBILITY OF PUPILS AT THE QUANTICO POST ELEMENTARY SCHOOL

In an effort to find out the degree of mobility of the pupils of the Quantico Post Elementary School, Marine Corps Schools, Quantico, Virginia, the author sent a form to the parents of each of the pupils used in the study requesting them to list the name of each school their child had attended, giving the state in which it was located and in what grade the child was placed at the time he was attending the school. The parent was also asked to give the number of school days the child lost in transferring from one school to another.

The author was able to get the above information from 23 of the 24 pupils in the sixth grade who were used in the study.

According to the information received from the parents of these 23 pupils in the sixth grade they have changed schools 117 times, in a total of 61 different schools in 15 different states, two United States possessions, and two foreign countries. They have lost a total of 440 school days in transferring from one place to another. This is an average of better than 19 days per pupil.

The author received the same information on 40 of the 56 pupils in the fourth grade who were used in the study. According to the parents of these 40 children they have changed schools 169 times. They have been in 110 different schools in 15 different states, two foreign

countries, and three United States possessions. They have lost a total of 898 school days in transferring from one school to another. This is an average of better than 22 days per pupil.

In Table I the pupils of grade 6, Quantico Post Elementary School are arranged according to the I.Q., boys first then girls, starting with the highest I. Q. and going to the lowest I. Q. They are then matched in the control group as to age, sex, I. Q., and socio-economic background. The number of moves made by each child in the Quantico Post Elementary School is shown. In the control group only one move was allowed.

The grade placement score made on the California Achievement Test is shown for both groups and the difference in the achievement score of the Quantico Post Elementary School and the control group is indicated.

This table reveals the great range found in both the I.Q. and achievement in the sixth grade of the Quantico Post Elementary School. The I. Q. range being from 143 to 67 and the achievement grade placement score from 7.6 to 2.6.

Table I shows that the pupils of the sixth grade of the Quantico Post Elementary School are retarded by an average of 6.3 school months in achievement when compared with children in a stable school situation. There is a range of from 16 school months to 2 school months in retardation, with only one in the group showing a gain of one school month.

TABLE I

TRANSIENT PUPILS OF GRADE SIX MATCHED WITH PUPILS IN A STABLE SCHOOL SITUATION

Post Elementary School						Control Group						
No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Score	No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Score	Diff.
1	M	11.6	143	3	7.6	1	M	11.1	145	1	7.9	- 3
2	M	11.2	134	5	6.9	2	M	11.2	134	0	7.3	- 4
3	M	11.2	130	9	6.0	3	M	11.3	130	0	7.3	-12
4	M	11.4	121	4	5.7	4	M	11.3	124	0	7.0	-13
5	M	12.3	116	5	5.7	5	M	12.1	118	1	7.3	-16
6	M	10.9	114	3	6.1	6	M	10.10	109	0	6.5	- 4
7	M	11.3	114	7	5.5	7	M	11.1	117	0	7.2	-15
8	M	11.0	104	5	6.1	8	M	11.0	101	0	6.7	- 6
1	F	10.7	130	5	7.0	1	F	10.11	126	1	7.5	- 5
2	F	10.9	129	3	6.3	2	F	10.11	129	1	6.2	+ 1
3	F	11.3	128	11	6.8	3	F	11.7	125	0	7.4	- 6
4	F	11.9	125	5	7.2	4	F	11.7	125	0	7.7	- 5
5	F	11.8	122	7	7.0	5	F	11.4	125	1	7.5	- 5
6	F	11.3	119	3	6.6	6	F	11.5	115	1	7.0	- 4
7	F	11.3	110	2	6.0	7	F	11.4	110	1	6.7	- 7
8	F	11.9	108	9	5.7	8	F	11.7	106	0	6.5	- 8
9	F	10.8	107	5	5.5	9	F	11.0	109	1	6.0	- 5
10	F	10.9	105	1	5.8	10	F	11.0	105	1	6.0	- 2
11	F	11.2	104	7	5.6	11	F	11.1	105	1	6.2	- 6
12	F	11.1	103	5	6.2	12	F	11.5	106	0	6.4	- 2
13	F	10.9	99	4	5.4	13	F	11.0	105	0	5.7	- 3

TABLE I (CONTINUED)

TRANSIENT PUPILS OF GRADE SIX MATCHED WITH PUPILS IN A STABLE SCHOOL SITUATION

Post Elementary School						Control Group						
No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Score	No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Score	Diff.
14	F	11.3	91	4	5.5	14	F	11.5	95	1	6.1	- 6
15	F	11.8	85	4	4.7	15	F	11.5	88	1	5.6	- 9
16	F	12.9	67	*	a.6	16	**					

Average Difference 6.3 Mos.

* Unable to get the number of moves due to transfer of parent.

** Author was unable to find a child of this age and I. Q. in the sixth grade of any of the schools used in this study.

In Table II the pupils of grade 4, Quantico Post Elementary School are arranged according to the I. Q., boys first then girls, starting with the highest I. Q. and going to the lowest I. Q. They are matched in the control group as to age, sex, I. Q., and socio-economic background. The number of moves made by each child in the Quantico Post Elementary School is shown. In the control group only one move was allowed.

The grade placement score made on the California Achievement Test is shown for both groups and the difference in the achievement score of the Quantico Post Elementary School and the control goup is indicated.

This table reveals the great range found in both the I. Q. and achievement in the fourth grade of the Quantico Post Elementary School. The I. Q. range being from 147 to 73 and the achievement grade placement score from 6.2 to 2.9.

Table II shows that the pupils of the fourth grade of the Quantico Post Elementary School are retarded by an average of 5.4 school months in achievement when compared with children in a stable school situation. There is a range of from 14 school months to 0 school months in retardation, with only 5 in the group showing a gain.

TABLE II

TRANSIENT PUPILS OF GRADE FOUR MATCHED WITH PUPILS IN A STABLE SCHOOL SITUATION

Post Elementary School						Control Group						
No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Scores	No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Score	Diff.
1	M	9.0	147	3	6.2	1	M	9.4	150	0	6.9	- 7
2	M	9.1	134	*	5.3	2	M	9.3	132	0	5.7	- 4
3	M	9.0	126	6	4.9	3	M	9.3	124	0	5.5	- 5
4	M	9.2	124	2	5.6	4	M	9.4	124	1	5.9	- 3
5	M	9.4	123	3	4.7	5	M	9.4	120	1	5.4	- 6
6	M	8.8	114	3	5.0	6	M	9.1	113	0	5.7	- 7
7	M	9.8	114	7	3.8	7	M	9.10	113	0	5.3	-13
8	M	8.6	113	2	4.6	8	M	8.9	112	0	4.9	- 3
9	M	8.11	112	4	4.5	9	M	9.2	115	0	4.5	- 0
10	M	9.6	112	*	4.6	10	M	9.4	110	1	4.7	- 1
11	M	9.0	111	*	3.8	11	M	9.3	116	0	4.7	- 8
12	M	8.10	111	5	4.4	12	M	**				
13	M	9.8	109	1	3.4	13	M	9.9	108	0	5.1	-15
14	M	9.3	106	3	3.7	14	M	9.5	109	0	5.1	-12
15	M	9.1	105	3	4.0	15	M	9.2	103	0	4.2	- 2
16	M	9.3	104	5	4.4	16	M	9.4	100	0	5.1	- 6
17	M	8.11	102	5	3.1	17	M	9.3	102	0	4.0	- 8
18	M	9.1	98	1	3.7	18	M	9.4	98	0	4.3	- 5
19	M	8.11	98	*	3.9	19	M	9.1	98	0	3.9	- 0
20	M	10.9	98	6	3.6	20						
21	M	9.1	97	3	3.5	21	M	9.4	98	1	4.4	- 8
22	M	9.6	94	4	3.7	22	M	9.6	94	1	5.0	-11
23	M	9.3	93	1	3.5	23	M	9.3	92	0	4.3	- 7
24	M	10.5	93	4	3.4	24	M	10.0	98	1	4.4	- 9
25	M	9.3	89	6	4.2	25	M	9.3	87	0	3.6	- 5

TABLE II (CONTINUED)

TRANSIENT PUPILS OF GRADE FOUR MATCHED WITH PUPILS IN A STABLE SCHOOL SITUATION

Post Elementary School						Control Group						
No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Score	No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Score	Diff.
26	M	8.11	88	*	3.0	26	M	8.9	94	1	3.5	- 5
27	M	9.11	84	5	3.6	27	M	9.11	85	0	3.7	- 1
28	M	9.11	83	3	4.0	28	M	9.11	85	0	3.6	≠ 4
29	M	9.8	80	4	2.9	29	M	9.8	85	0	3.4	- 5
30	M	10.11	73	4	3.0	30	M-	**				
1	F	9.8	131	3	5.9	1	F	9.11	128	1	6.3	- 4
2	F	9.5	131	3	5.3	2	F	9.9	129	1	5.6	- 3
3	F	9.1	127	5	5.0	3	F	9.3	126	0	6.2	-12
4	F	8.7	120	*	3.9	4	F	9.1	114	0	4.6	- 9
5	F	8.10	120	2	4.5	5	F	9.3	122	1	5.1	- 6
6	F	10.0	119	5	5.2	6	F	9.9	120	1	5.9	- 7
7	F	9.0	119	3	4.5	7	F	9.2	116	0	5.0	- 5
8	F	9.5	114	*	4.7	8	F	9.3	111	1	4.9	- 2
9	F	9.3	114	4	4.9	9	F	9.2	119	0	4.8	≠ 1
10	F	8.6	114	5	3.5	10	F	9.3	114	0	5.1	-14
11	F	9.0	111	5	4.0	11	F	9.2	112	0	4.8	- 8
12	F	8.11	109	*	4.0	12	F	9.3	113	1	4.6	- 6
13	F	9.8	108	5	3.8	13	F	9.3	109	1	4.8	- 9
14	F	9.2	107	6	5.0	14	F	9.1	107	0	4.7	≠ 3
15	F	8.9	105	4	5.1	15	F	8.7	107	0	5.0	≠ 1

TABLE II (CONTINUED)

TRANSIENT PUPILSOF GRADE FOUR MATCHED WITH PUPILS IN A STABLE SCHOOL SITUATION

Post Elementary School						Control Group						
No.	Sex	Age	I.Q.	No. Moves	Grade Plac. Ach. Scores	No.	Sex	Age	I.Q.	No. Moves	Grade Plc. Ach. Scores	Diff.
16	F	9.7	104	*	4.3	16	F	9.9	104	0	5.2	- 9
17	F	9.1	102	*	4.1	17	F	9.7	104	1	5.2	- 9
18	F	9.9	100	4	3.6	18	F	9.7	101	0	3.9	- 3
19	F	9.1	99	*	3.4	19	F	9.2	95	0	4.1	- 7
20	F	9.8	96	4	4.7	20	F	**				
21	F	8.11	95	2	3.6	21	F	9.3	95	0	4.2	- 6
22	F	9.5	95	5	3.9	22	F	9.6	95	0	4.8	- 8
23	F	9.11	94	*	3.0	23	F	9.10	92	0	3.9	- 9
24	F	9.2	90	5	3.5	24	F	9.7	94	0	3.6	- 1
25	F	9.7	85	3	3.1	25	F	9.10	90	0	4.3	-11
26	F	9.9	80	3	3.5	26	F	9.9	85	0	4.3	- 8

Average Difference 5.4 Mos.

* Data unavilable

** Due to age differences in starting school in different states author unable to match child.

In Table III the pupils of the sixth grade of Quantico Post Elementary School are ranked according to the number of times they have moved; starting with the child who has moved the greatest number of times and going to the child who has moved the least number of times. The number of school months each pupil is retarded when compared with a pupil in a stable school situation with whom he or she has been matched in age, sex, I. Q., and socio-economic background is indicated under "Retardation in School Months." The minus signs under "Retardation in School Months." indicates how many school months the Quantico Post Elementary School pupils are retarded when compared with pupils in a stable school situation according to the California Achievement Test. The plus sign indicates how many school months they are in advance of pupils in a stable school situation.

Data: $\Sigma X = 109$ = Total number of moves

$\Sigma Y = 139$ = Total retardation in school months

$R = .284$ = Correlation

TABLE III

PUPILS OF GRADE SIX, POST ELEMENTARY SCHOOL, RANKED ACCORDING TO NUMBER OF TIMES MOVED CORRELATED WITH RETARDATION IN SCHOOL MONTHS

No.	No. Moves	Retardation in School Months
1	11	- 6
2	9	-12
3	9	- 8
4	7	-15
5	7	- 6
6	7	- 5
7	5	- 5
8	5	- 5
9	5	-16
10	5	- 4
11	5	- 5
12	5	- 6
13	5	- 2
14	4	-13
15	4	- 6
16	4	- 9
17	3	- 4
18	3	+ 1
19	3	- 4
20	2	- 7
21	1	- 2

In Table IV the pupils of the fourth grade of the Quantico Post School are ranked according to the number of times they have moved; starting with the child who has moved the greatest number of times and going to the child who has moved the least number of times. The number of school months each pupil is retarded when compared with a pupil in a stable school situation with whom he or she has been matched in age, sex, I. Q., and socio-economic background is indicated under "Retardation in School Months". The minus signs under "Retardation in School Months" indicates hom many school months the Quantico Post Elementary School pupils are retarded when compared with pupils in a stable school situation according to the California Achievement Test. The plus sign indicates how many school months they are in advance of pupils in a stable school situation.

Data: EX = 151 = Total number of moves

EY = 218 = Total retardation in school months

R = .104 = Correlation

TABLE IV

PUPILS OF GRADE FOUR, POST ELEMENTARY SCHOOL, RANKED ACCORDING TO NUMBER OF TIMES MOVED CORRELATED WITH RETARDATION IN SCHOOL MONTHS

No.	No. Moves	Retardation in School Months
1	7	-13
2	6	+ 3
3	6	- 5
4	6	+ 3
5	5	-12
6	5	- 7
7	5	-14
8	5	- 8
9	5	- 9
10	5	- 8
11	5	- 1
12	5	- 6
13	5	- 8
14	5	- 1
15	4	0
16	4	-11
17	4	- 9
18	4	- 4
19	4	+ 1
20	4	+ 1
21	4	- 3

TABLE IV (CONTINUED)

PUPILS OF GRADE FOUR, POST ELEMENTARY SCHOOL, RANKED ACCORDING TO NUMBER OF TIMES MOVED CORRELATED WITH RETARDATION IN SCHOOL MONTHS

No.	No. Moves	Retardation in School Months
22	4	+ 4
23	3	- 3
24	3	- 5
25	3	-11
26	3	- 8
27	3	- 7
28	3	- 6
29	3	- 7
30	3	-12
31	3	- 2
32	3	- 8
33	3	+ 3
34	2	- 3
35	2	- 3
36	2	- 6
37	2	- 6
38	1	-15
39	1	- 5
40	1	- 7

CHAPTER IV

SUMMARY AND CONCLUSIONS

This study reveals that the children of military personnel and civil service employees who are forced to transfer so frequently from one school to another over a great portion of the United States, foreign countries, and United States possessions are retarded in their academic achievement when compared with children in a stable school situation.

In Table I where the 24 pupils in the sixth grade at the Quantico Post Elementary School are matched in age, sex, I. Q. and socio-economic background with pupils in a stable school situation there is an average of 6.3 school months retardation in the achievement score of the Quantico Post Elementary School pupils. In Table II where the 53 pupils in the fourth grade were matched as above the Quantico Post Elementary School pupils showed an average of 5.4 school months retardation in their achievement scores when compared with pupils in a stable school situation.

In Table III the author was able to get the number of moves made by 21 of the pupils in the sixth grade at the Quantico Post Elementary School. These pupils were ranked according to the number of moves made and correlated with the retardation in school months as compared with a child in a stable school situation. This reveals a correlation of .284 between the number of moves made and the retardation in academic achievement scores.

In Table IV the author was able to get the number of moves made by 40 of the fourth grade pupils at the Quantico Post Elementary School used in this study. These pupils were also ranked according to the number of moves made and correlated with the retardation in school months as compared with pupils in a stable school situation. This reveals a correlation of .104 between the number of moves made and the retardation in academic achievement scores.

These correlations are low and are interpreted to indicate that among children of high mobility, the actual number of moves is relatively unimportant - grade retardation is evident whether the child has moved three times, four times or six times - and other factors such as I. Q. and age play a role here also.

The foregoing data reveals a great need for schools where these children will be given an opportunity to "catch up" in the school work missed by such frequent moves. Public Law 874 states that the schools operated by the Office of Education, Federal Security Agency, shall be comparable only to the schools in the state in which they are located. Since it is necessary for these children to attend the schools in many different states in the United States, foreign countries, and United States possessions it would seem wise to have these schools comparable to the better schools in the United States rather than limited to the specific state in which they are located.

The wide range in the academic achievement scores of the pupils of the Quantico Post Elementary School at both the fourth and sixth grade level reveals a great need for individual attention and planning

in the classroom. It would seem beneficial to have more uniformity of curriculum in all the schools operated by the Office of Education, Federal Security Agency, regardless of the state in which they are located. It would seem necessary to have small classes and a very enriched program to assist these children in making the many social and academic adjustments brought on by such frequent transfers.

It has been brought to the attention of the author by the school board of the Quantico Post Elementary School that the Virginia State Board of Education has forced the Quantico Post Elementary to have no longer a music, art, and physical education instructor since the schools of Prince William County do not have them. It is the opinion of the teachers and administrators of the Quantico Post Elementary School that this is quite a step backward in education. The instruction in music, art, and physical education have proven invaluable in forwarding the social and emotional adjustment of these children who are forced to transfer so frequently.

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APPENDIX A. Copy of Letter Sent to Parents of Students Involved in This Study.

March 10, 1953

Dear

We are attempting to make a study of the influences of mobility on pupil progress in our school. In order to do this, it will be necessary that we have the following information.

Please list each school your child has attended, including this year.

Name and Location of School	Grades

How much time has your child lost in transferring from one duty station to another?

Days	Grades

Your cooperation is greatly appreciated.

Very truly yours,

Homer M. Bryant, Principal

APPENDIX B. Formula for Determining Correlation Between the Number of Moves and the Retardation in Achievement Scores.

The following formula was used to find out if there is any correlation between the number of moves and the retardation in achievement scores:

$$r = \frac{NEXY - (EX)(EY)}{\sqrt{NEX^2 - (EX)^2 \quad NEY^2 - (EY)^2}}$$

NOTE: The number of moves times the retardation in school months minus the product of the total moves and total retardation divided by the square root of the product of: (1) the sum of the squares of the number of moves minus the square of the number of moves and, (2) the sum of the squares of the retardation in school months minus the square of the retardation in school months. That is:

$NEXY$ = The product of the number of moves and retardation in school months.

EX = Sum of number of moves.

EY = Sum of retardation in school months.

NEX^2 = The square of the number of moves.

$(EX)^2$ = The total of the number of moves squared.

NEY^2 = The square of the retardation in school months.

EY^2 = The total of the retardation in school months squared.

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1 J. P. Guilford, Fundamental Statistics in Psychology and Education, McGraw-Hill, 1942, p. 204.

VITA

Gladys Taylor Dollins, daughter of Mr. and Mrs. Aubrey Clay Taylor, Richmond, Virginia, was born in Fluvanna County, Virginia, June 25, 1911. Educated in the public schools of Virginia- graduated at Chester High School, Chesterfield County, Virginia. Attended the Richmond Division of the College of William and Mary, Farmville State Teachers College, and the University of Virginia- B.S. degree 1939, Farmville State Teachers College. Taught in the public schools of Chesterfield County, Virginia. Married to Major Raymond Willis Dollins USMC December 4, 1943. Major Dollins was killed in the battle for Iwo Jima February 19, 1945. One daughter, Jane Clay Dollins born February 1, 1946.

Graduate work done at Duke University and the University of Virginia. Started graduate work at the University of Richmond June 1951. Teacher in the Quantico Post Elementary School since October 1945.