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A Study of Procedures Used by Teachers with Pupils on Educational Trips to Williamsburg, Virginia

Florence Dickerson Graham

College of William & Mary - School of Education

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A STUDY OF PROCEDURES USED BY TEACHERS WITH PUPILS
ON EDUCATIONAL TRIPS TO WILLIAMSBURG, VIRGINIA

A Thesis
Presented to
the Faculty of the Department of Education
College of William and Mary

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

by

Florence Dickerson Graham

August 1950
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I wish also to extend my thanks to the teachers and pupils who participated in the study.
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CHAPTER I

INTRODUCTION

Statement of the problem. The purposes of this study were to determine and analyze the procedures used by teachers, with children in connection with educational trips to Williamsburg, Virginia. More specifically the study was concerned with (1) finding and analyzing those procedures which produced the best results in terms of the greatest retention of information by the pupils; and (2) comparing the procedures used by those teachers whose pupils made the greater gains in the retention of new information based on the information scores, with the procedures used by teachers whose pupils made the smaller gains in retention of new information.

Justification. The bases for justification of this study are: An educational trip is assumed to be a very valuable learning experience in the development of children; this report may motivate other teachers to bring groups of children to visit Williamsburg; and no study known to the writer has been made concerning educational trips to Williamsburg.
The study may be helpful to teachers who bring their pupils to visit Williamsburg. They may find in this report helpful suggestions for planning and evaluating such trips, and may better learn to utilize them. On these bases there appears to be need for the study.

Limitations. In this study a description is given of teaching procedures used by twenty-five teachers, who brought their pupils to Williamsburg, Virginia, during the months of January, February, and March in 1949. The pupils involved were elementary and/or high school except one group which was composed of freshmen in college.

The procedures analyzed in this study related to methods used by teachers in preparation for, and in the follow-up study of, the trip to Williamsburg. This study is concerned with an analysis of activities, materials, and procedures used by teachers as shown in the teacher questionnaire.

Definition of terms. The term, educational trip, which was used throughout this study refers to any planned trip that teachers and a group of pupils make as a definite part of regular class work, bearing in mind particular educational objectives.

Field trip, field study, and excursion are used in this report as synonymous terms with an educational trip.
Procedure. The term procedure refers to a method or technique of teaching.

Sources of Data and Methods. The data in this study were obtained from two sources: (1) A questionnaire to teachers and; (2) a set of information tests consisting of a pre-test and a post-test, administered to pupils.

The questionnaire for teachers was designed to elicit information concerning four steps in teaching procedures relative to educational trips to Williamsburg. They were:

1. Origin of the idea of a trip to Williamsburg;
2. Preparation for the trip, including activities, materials, procedures used before the trip, and the approximate amount of time spent in preparation for the trip;
3. Follow-up procedures after the trip; and
4. Information concerning the times when the pre-test and post-test were given. The questionnaire had space in which data concerning supplementary activities, materials, and procedures could be listed.

The questionnaire was constructed on the basis of authority, and it was prepared in the form of check lists. The questionnaire was submitted in trial form to eighteen teachers who had visited Colonial Williamsburg with their classes. In the light of their responses and suggestions from members of

1 Questionnaire to Teachers, A Trip to Williamsburg, Appendix "A".

2 Information Tests, Form A and Form B, Appendix "B".
the investigator's graduate study committee, the questionnaire was revised. In this final form it contained four main items and ninety-six sub-items.

In order to determine which procedures produced the best results in terms of the greater gains in information by the pupils who had made the Williamsburg trip, two equated tests were needed.

The preliminary tests were made from material found in the Historical Supplement of The Virginia Gazette, July, 1947. These trial tests were administered to one hundred twenty-three pupils, who took them without any preparation. The tabulated results of the test scores are in Appendix C.

After an analysis of the results of the preliminary tests, two equated tests were constructed. Both tests, Form A and Form B were made up of forty best-answer multiple choice questions.

On both forms of the test sheet the teacher was asked to estimate the child's relative native intelligence by checking the appropriate block of a series of four blocks representing a range from highest to lowest index of ability.

---

3 Number of Pupils in the Preliminary Tests and the means of each Group, Appendix "C".
One test form was administered to pupils before the trip, and the other test after the trip. Pupils in fourteen schools took Test B first, and pupils in eleven schools took Test A first.  

It was necessary for the investigator to secure the cooperation of teachers who together with their classes planned to visit Colonial Williamsburg. Letters were written to thirteen Superintendents and Supervisors in Tidewater, Virginia, asking for the names of teachers who planned to take their groups to Williamsburg. In response to these letters, the names of twenty-nine teachers were secured. In addition to these names, the Education Division of Colonial Williamsburg Incorporated furnished a list of names of another twenty-five teachers. In response to the investigator's request, thirty-three teachers agreed to participate in this study, eight teachers found it impossible to carry through the project. Twenty-five teachers did participate in the investigation.

The first letter to teachers requested their participation in the study, and asked them to do two things: respond to a teacher questionnaire, and to administer the equated information tests to pupils before and after their trip to

4. Information Tests, Appendix E.

5. Letter to Superintendents and Supervisors, Appendix D.

6. Letter to Teachers, Appendix E.
Williamsburg. Enclosed in this letter was a card for the teacher's reply, if she agreed to cooperate in the study. The second letter to teachers gave instructions concerning the teacher's questionnaire, suggestions with reference to estimating the intelligence of pupils taking the tests, and detailed instructions for the administration of the information tests.

The teachers returned the questionnaire and tests to the investigator. The information tests were scored and their means were determined.

The investigator arbitrarily divided the schools into two groups, an Upper Group of eighteen and a Lower Group of seven schools. The Upper Group was made up of schools whose test score means on the second test showed an increase of three or more units over the means of the first test; the remaining schools, those whose test score means showed a smaller increase, were placed in the Lower Group.

In order to determine whether there was a significant difference between the means of the test scores made by pupils of the Upper and Lower Groups before and after the trip, it was necessary to apply the null hypothesis. Similarly, it was

7. Letter of Instructions to Teachers and a Page of Instructions, Appendix F.
necessary to determine whether there was a significant difference between the means of the index of abilities of the Upper and the Lower Groups. This also was done by applying the null hypothesis. This hypothesis assumes there are no true differences between the groups being compared, and that the means of the test scores, and the means of the index of abilities differ only through chance factors. To test this hypothesis, the critical ratio had to be computed. The numerator of the critical ratio was the obtained difference between the means of the scores on the tests given before and after the trip, of the Upper and Lower Groups, and the denominator was the standard error of the difference between the means of the scores on the tests given before and after the trip of the Upper and Lower Groups.

Before the critical ratio was computed, the standard deviation of each distribution, standard error of each mean, and the standard error of the difference between means had to be calculated. The "t" test was applied to the critical ratio from Fisher's table.

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9. Ibid., p. 199.


The statistical treatment had to be done to determine whether the differences between the means of the information test scores, and the means of the index of abilities were statistically reliable and significant.

Organization of the Study. The remainder of this report is divided into three sections: Chapter II is a review of the historical background of the educational trip, and presented with it is a short summary of the research related to this study. In Chapter III the data are presented and analyzed, and in the final chapter, Chapter IV, a summary of findings and recommendations are made.
CHAPTER II

REVIEW OF RELATED STUDIES

This chapter reviews the historical background of the educational trip, and presents a brief summary of the research related to the present study.

From a historical point of view, the educational trip may be traced to the Greek teacher who took his pupils on trips as a part of their learning activities, before the era of Christ. The Greek teacher saw the educational trip as an aid to teaching. ¹ The distinct value of educational trips was recognized by most writers on the subject of education during the sixteenth and seventeenth centuries. ² Pestalozzi, Froebel, and Herbart recognized the value of out-of-door experiences. Educational excursions were made a definite part of the German educational program in the nineteenth century. ³ From Germany the idea of educational trips spread to the British Isles and to other European countries. ⁴ In England


³ Ibid., pp. 542-543.

educational trips were first sponsored by Manchester University; were well established by 1911; and now, the School Journey Association sponsors such trips for the school groups.

Educational trips have been growing in popularity in the United States since the latter part of the nineteenth century. Charles and Frank McMurray, influenced by the teachings of Herbart, stressed the use of the excursion in the teaching of geography and science in the United States.

In Sweden, the railroads arrange special educational trips to all the mountain regions. Over 60,000 school children make these trips through this service yearly under the supervision of their teachers. Finland has a state commission charged with the duty of attending to school trips.

Those who have experimented extensively with field trips are convinced that through them many of the more important educational purposes can be achieved. They claim that pupils are brought into contact with reality, their imaginations are stimulated,


and the things they have read in the classroom become more vivid. 9

The increase in the amount of current literature dealing with the problem may be considered an index of the trend of interest in the educational trip. It is noteworthy that up to 1920 only scant reference to the excursion is recorded in literature. For the five-year period, 1920-24, only four articles appeared; during the years 1925-29, the number rose to nineteen, while from 1930 to 1934, the number of articles published reached forty-five, and for the period 1935-39, 185 articles appeared. 10 From June 1940 to February 1950, there were 188 articles written. 11 However, in spite of this increase in the number of published references to the excursion, a survey of the literature showed that most of the articles dealt with the use of the educational trips rather than with evaluation of specific trips.

In Bremerton, Washington, the school system saw the

9 Ibid., pp. 25-24.


importance and the necessity of using the community resources to
vitalize classroom teaching. A full time supervisor of instructional
materials was appointed to work with representatives from each school
in the city and to make plans for educational trips in the community.
Administrators, teachers, and pupils planned specific trips to meet
the needs of the pupils. Information obtained from these trips led
into worthwhile classroom activities, and the children were stimu-
lated to learn about their community.12

The field work of the Lincoln School of Teachers College,
Columbia University is another example of what can be done with the
excursion technique. Raths made a study of eleventh grade students
of the Lincoln School.13 These students made a conducted trip to
the coal fields of West Virginia. The class was divided into two
groups: the industrial-study group which took the educational trip;
and the home-group which remained at school. Preparation in
science, social studies, health, language, art; home economics;
and music was planned with the teacher guiding the activities of
the pupils. Cooperative planning was done according to the situ-
atations, abilities, and experiences of the pupils involved. A test,
"A Scale of Beliefs", was used to measure the student's beliefs.
The test consisted of ninety-three pairs of statements. To be

12 B. R. Breetji, "Bremerton's Eighty Field Trips",

13 Louis E. Raths, "Some Evaluations of a Field Trip",
consistent one could not agree with both statements, and where a student did so, it was recorded as an inconsistency. The test was given to the group before leaving on the trip, and after the trip.

The thinking of the pupils in the industrial-study group was much clearer than the home-group on the following issues: democracy, labor, and unemployment, government regulations and control, race, nationalism, and militarism. Furthermore, it was found that the study group showed more desire for an extensive reading program and much more curiosity about their reading than did the group which remained at home. At the close of the school year, the industrial-study group had greater interest in science and engineering, in leadership activities, in humanitarian activities, and intellectual problems. In only two particulars did the non-excursion group seem to excel: they showed greater interest in foreign language and in music. Raths concluded that planned, direct experiences contributed to the growth of the high school students in ways considered desirable by the faculty, the parents, and the students. He suggested that some outcomes of the educational trip were:
carefully planned direct experiences may result in clarifying the beliefs which students hold, greater allegiance to human values, firmer faith in democratic principles, a more flexible outlook which considered solutions to social problems as tentative and not arbitrary. One of the outstanding conclusions reached by Raths was that the industrial group made two year's growth on the average.
in social consciousness as the result of the educational trip.  

Fraser divided forty-six Lincoln School pupils into three groups according to their scores on the American Council on Education Psychological Test. Preparation for the educational trip was made in class with teacher and pupil planning the experience. Fraser devised tests to evaluate growth in information in understanding the problems of soil erosion and land management, and of procedures used to convert energy of falling water into useful electrical energy. Fraser constructed tests using multiple choice items. The tests were given before and after the trip, and the achievement of the pupils was indicated by an analysis of the before and after tests. Teaching procedures were characterized by informality, student participation, purposeful activity, emphasis upon social problems, provision for individual differences and interests, attention was given to the development of critical thinking and attempts to develop generalizations. Fraser found that the group with superior ability gained more on the information tests than the middle and lowest intellectual group, and the middle group gained more on the information tests than the lowest intellectual group. From the evidence discovered, he concluded that the educational trip is one procedure which should supplement

14 Ibid., p. 208.
15 James Fraser, "Outcomes of a Study Excursion", (Teachers College Contributions to Education, Number 778, New York: Teachers College Columbia University, 1939), p. 78.
the curriculum, and that pupil gains in information is probably the 
best single index of all the outcomes evaluated.  

Davis found that every worthwhile contact which the child 
had with the actual life of his community, served to increase the 
pupil's ability to understand and appreciate places, people, and 
the problems involved in community living. 17 She found that school 
excursions proved a most valuable means of broadening children's 
understanding of their communities and of the great network of inter-
dependence existing in group life today. School excursions to 
places of interest in the community stimulated the pupils to express 
new ideas, to discover new information, and to develop new interests. 
The educational trips helped the children to make first hand con-
tacts. The trips were used to make the classroom experiences more 
meaningful. Some trips described by Davis grew out of problems 
being faced by children and teachers at school and involved child-
ren expressing their own purposes, plans, and thoughts. The method 
used by the teachers in this study revealed that pupils worked 
cooperatively to solve their problems under the guidance of teachers 
who understood them and their problems. It was found by Davis that 
extended participation in democratic control and a more democratic 

16 Ibid., pp. 80-81.

17 Morla Davis, "How Groups of Children Developed Values in 
Their School Work Through The Use of Resources in Their Communities", 
Master's Thesis, College of William and Mary (Meister and Smithie, 
1941), Richmond, Virginia, pp. 23-30.
interaction among teachers and pupils promoted the opportunities for real democratic living of the children. She found that democratic procedures resulted in significant growth of pupils participating in the creation of better practices and policies in the classrooms. Davis concluded that a wide range of school and community relationships were available; that children derived values from these relationships; and that the values derived vary according to the ways in which the contacts were made and used. Davis also concluded that educational trips offered desirable learning situations, and that children recognized the value of the resources in the community when they had the opportunity to see relationships of these resources to their own problems. Davis stated that school excursions into the community are becoming more and more popular as a means of bringing actual life situations into the children’s experiences.  

It appears from this review of the related literature that the educational trip is considered a valuable type of experience for pupils. Moreover, such excursions seem to have a motivating influence in helping children to attack and solve their own problems. In addition, the educational trip has value as a public relations device, both in helping children to understand the community and in helping the community to know the work of the school.

Fish, Fraser, and Davis disclose that favorable results

18 Ibid., p. 31.
in terms of pupil growth were found when the trips were initiated,
developed, and evaluated cooperatively by teachers and pupils.
CHAPTER III

THE DATA: PRESENTATION AND ANALYSIS

The purpose of this chapter was to present an analysis of the data obtained from the information tests to pupils, and from the questionnaire to teachers. The chapter, therefore, was divided into two parts: (1) an interpretation of the numerical values between the Upper and the Lower Groups in the difference between the means of scores on the information tests before and after the trip; and the difference between the means of the index of abilities; and (2) finding which procedures produced the best results in terms of information gained by pupils as shown by the results of the information tests; and comparing the procedure used by teachers whose pupils made the greater gains on the test scores, with the procedures used by teachers whose pupils made the smaller gain on the test scores.

An Interpretation of the Numerical Values Between the Upper and the Lower Groups in the Differences Between the Means. Table VII in Appendix G1 shows the number and grade status of

1. Table VII, Appendix G.
TABLE I (GROUP 1949)

DIFFERENCE IN SCORES ON THE PRE-TEST AND AFTER-TEST
AND INDEX OF ABILITY FOR EACH GROUP.

<table>
<thead>
<tr>
<th>School</th>
<th>Order of Tests *1</th>
<th>Mean Before Trip</th>
<th>Mean After Trip</th>
<th>Difference in Scores</th>
<th>Average Index of Ability</th>
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</thead>
<tbody>
<tr>
<td>School 1</td>
<td>B-A</td>
<td>24.55</td>
<td>31.37</td>
<td>6.82</td>
<td>2.04</td>
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<tr>
<td>School 2</td>
<td>B-A</td>
<td>28.00</td>
<td>34.69</td>
<td>6.69</td>
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<td>School 3</td>
<td>B-A</td>
<td>26.25</td>
<td>32.11</td>
<td>5.86</td>
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<td>5.69</td>
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<td>29.91</td>
<td>5.29</td>
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<td>38.25</td>
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<td>24.43</td>
<td>26.41</td>
<td>1.98</td>
<td>5.02</td>
</tr>
<tr>
<td>School 23</td>
<td>B-A</td>
<td>29.00</td>
<td>30.58</td>
<td>1.58</td>
<td>3.27</td>
</tr>
<tr>
<td>School 24</td>
<td>A-B</td>
<td>26.93</td>
<td>28.24</td>
<td>1.31</td>
<td>3.10</td>
</tr>
<tr>
<td>School 25</td>
<td>B-A</td>
<td>26.20</td>
<td>26.78</td>
<td>0.58</td>
<td>3.50</td>
</tr>
</tbody>
</table>

*1 In the 1949 group (14 schools took the B test first and the A test last; 11 schools took the A test first and the B test last.)

*2 Each teacher was requested to rank each pupil in ability rating using (1) to indicate the highest quarter; (2) to indicate second quarter; (3) to indicate third quarter; and (4) the lowest quarter.
pupils participating in the study. Seven hundred twenty-nine pupils took the information tests before the trip and seven hundred one pupils took the information test after the trip to Williamsburg.

Table I shows the difference in scores on the pre-test and after-test and index of ability for each group. Formulæ used for the statistical treatment of this data are shown in Appendix H. Table II reveals the critical ratio of the information tests scores of the Upper and the Lower Groups, before and after the trip.

The critical ratio was 1.25

TABLE II

CRITICAL RATIO OF THE INFORMATION TEST SCORES
OF THE UPPER AND LOWER GROUPS BEFORE AND AFTER THE TRIP

<table>
<thead>
<tr>
<th></th>
<th>Upper Group</th>
<th>Lower Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>28.85</td>
<td>29.02</td>
</tr>
<tr>
<td><strong>Standard Deviations</strong></td>
<td>3.11</td>
<td>2.72</td>
</tr>
<tr>
<td><strong>Standard Error of the Mean</strong></td>
<td>.754</td>
<td>1.13</td>
</tr>
</tbody>
</table>

**Before Trip**

<table>
<thead>
<tr>
<th></th>
<th>Upper Group</th>
<th>Lower Group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>33.52</td>
<td>30.84</td>
</tr>
<tr>
<td><strong>Standard Deviations</strong></td>
<td>2.74</td>
<td>3.16</td>
</tr>
<tr>
<td><strong>Standard Error of the Mean</strong></td>
<td>.665</td>
<td>1.50</td>
</tr>
</tbody>
</table>

**Standard Error of the Difference Between Two Means**

<table>
<thead>
<tr>
<th></th>
<th>1.358 (Before Trip)</th>
<th>1.921 (After Trip)</th>
</tr>
</thead>
</table>

**Critical Ratio**

<table>
<thead>
<tr>
<th></th>
<th>1.25 (Before Trip)</th>
<th>1.39 (After Trip)</th>
</tr>
</thead>
</table>

* The Arithmetic mean between the Upper and Lower Group in the test before the trip was .17, in the test after the trip, the mean was 2.68.

2. Formulae in Appendix H.
before the trip, and 1.39 after the trip. The difference between the pre-test mean and the post-test mean was found not to be statistically significant, or stated in another way, application of the "t" test (Fisher's table) indicates that the chances are only ten cases out of one hundred cases, that if the experiment were repeated, the same difference between the means would occur.

Table VIII in Appendix I\(^3\) shows the critical ratio of the index of ability of the Upper and Lower Groups. The difference between the means of the index of ability of the Upper and Lower Groups also were found to be not significant. Since the differences between the means of the information test scores of the Upper and the Lower Groups before and after the trip, and the difference between the means of the index of ability of the Upper and Lower Groups are not significant, the null hypothesis is supported.

One of the problems in connection with determining which teaching procedures were associated with the greater gains by pupils on the information test, was to rule out, if possible, certain social traits of the pupils. Social attributes of the pupils were not held constant, but the Upper and Lower Groups

\[\text{3. Table VIII in Appendix I.}\]
were comparable in intellectual ability. In the group where
greater gains were made on the information tests, intellectual
and social traits could be more closely associated with the great-
or gains than the procedures used by teachers. In this study,
it was not possible to hold all variables constant. Any nature
of differences will not be due to the intellectual ability of the
pupils, but due to the training program and the procedures of
the teachers or to chance factors.

Finding Which Procedures Produced the Best Results in
Terms of Information Gained by Pupils and Comparing the Procedures
Used by Teachers Whose Pupils Made the Greater Gains on the Test
Scores With the Procedures Used by Teachers Whose Pupils Made the
Smaller Gains. Experiences by pupils in planning, in devising
and selecting choices, in arriving at group decisions in an in-
telligent manner are a significant part of the elementary-school
curriculum. Teacher and pupil planning provides more opportunities
for the continuous growth of the pupils. In Table III are shown
the classroom activities, materials, and procedures used by the
twenty-five teachers before and after trips to Williamsburg. In
all schools in the Upper Group, the idea of the trip grew out
of class discussion between teacher and pupils; the teacher and
pupils planned all activities before and after the trip, and
TABLE III

ACTIVITIES, MATERIALS, AND PROCEDURES USED BY TWENTY-FIVE TEACHERS IN THEIR CLASSES BEFORE AND AFTER A FIELD TRIP TO COLONIAL WILLIAMSBURG

1. Origin of the Trip to Williamsburg

<table>
<thead>
<tr>
<th>Percent of Schools in</th>
<th>Percent of Schools in</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Schools Rank (N=18)</td>
<td>No. of Schools Rank (N=7)</td>
</tr>
<tr>
<td>Upper Group</td>
<td>Lower Group</td>
</tr>
<tr>
<td>No. of 1949</td>
<td>1949</td>
</tr>
</tbody>
</table>

| a. Teacher suggested idea of trip | 0 | 7 | 100% |
| b. Pupils suggested idea of trip | 0 | 0 | |
| c. Principal suggested idea of trip | 0 | 0 | |
| d. Idea of trip grew out of class discussion of teacher and pupil | 18 | 100% | 0 | 0 |

2. Preparation for the Trip to Williamsburg

<table>
<thead>
<tr>
<th>a. Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Teachers planned with pupils what should be done</td>
</tr>
<tr>
<td>2) Teacher lectured to pupils about Williamsburg</td>
</tr>
<tr>
<td>3) Teacher impressed upon the pupils what they should look for in Williamsburg</td>
</tr>
</tbody>
</table>
### Percent of Schools in School Group During 1949

<table>
<thead>
<tr>
<th>Percent of Schools in Upper Group 1949</th>
<th>Percent of Schools in Lower Group 1949</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Schools</td>
<td>Rank</td>
</tr>
<tr>
<td>----------------</td>
<td>------</td>
</tr>
<tr>
<td>4) Pupils and teachers suggested appropriate material to be used</td>
<td>18</td>
</tr>
<tr>
<td>5) Pupils made oral reports on reading materials</td>
<td>12</td>
</tr>
<tr>
<td>6) Pupils outlined and summarized reading materials</td>
<td>14</td>
</tr>
<tr>
<td>7) Pupils drew pictures pertaining to Williamsburg</td>
<td>14</td>
</tr>
<tr>
<td>8) Pupils made a list of their own as to what each wanted to see</td>
<td>5</td>
</tr>
<tr>
<td>9) Pupils wrote original stories, plays</td>
<td>7</td>
</tr>
<tr>
<td>10) Pupils made simple models of Colonial furniture</td>
<td>2</td>
</tr>
<tr>
<td>11) Pupils presented scrapbooks</td>
<td>7</td>
</tr>
<tr>
<td>12) Pupils presented plays, skits, and programs</td>
<td>3</td>
</tr>
<tr>
<td>13) Pupils made costumes for plays</td>
<td>3</td>
</tr>
<tr>
<td>14) Pupils made maps of Colonial Williamsburg</td>
<td>10</td>
</tr>
</tbody>
</table>

### Materials

<table>
<thead>
<tr>
<th>Materials</th>
<th>No. of Schools</th>
<th>Rank</th>
<th>(N=18)</th>
<th>No. of Schools</th>
<th>Rank</th>
<th>(N=7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) The pupils studied maps</td>
<td>10</td>
<td>(5)</td>
<td>55%</td>
<td>5</td>
<td>(3.5)</td>
<td>71%</td>
</tr>
<tr>
<td>2) Pupils saw film strips</td>
<td>7</td>
<td>(7.5)</td>
<td>39%</td>
<td>0</td>
<td>(7)</td>
<td>0</td>
</tr>
<tr>
<td>3) Pupils saw movies</td>
<td>18</td>
<td>(2)</td>
<td>100%</td>
<td>7</td>
<td>(1.5)</td>
<td>100%</td>
</tr>
<tr>
<td>4) Pamphlets, charts and postcards</td>
<td>18</td>
<td>(2)</td>
<td>100%</td>
<td>5</td>
<td>(3.5)</td>
<td>71%</td>
</tr>
</tbody>
</table>
5) Many textbooks
   (average four) 18 (2) 100% 0 (7) 0
6) One text
   used 0 (9) 0 7 (1.5) 100%
7) Historical
   fiction used 7 (7.5) 39% 0 (7) 0
8) Newspapers used 8 (6) 44% 0 (7) 0
9) Magazines used 13 (4) 72% 0 (7) 0

a. Procedures BEFORE trip

1) Teacher selected
   and planned all
   activities 0 (8.5) 0 3 (4) 42%
2) Pupils and
   teacher together
   selected and plan-
   ned all activities 18 (1) 100% 0 (7.5) 0
3) Pupils and
   teachers evaluated
   work 17 (2.5) 94% 0 (7.5) 0
4) Question and
   answer method used
   entirely in the
   study of Colonial
   Williamsburg 0 (8.5) 0 7 (1.5) 100%
5) Socialized reci-
   tation, committee
   work, informal re-
   ports used 17 (2.5) 94% 0 (7.5) 0
6) Pupils eval-
   uated work apart
   from teacher
   evaluation 2 (6) 11% 0 (7.5) 0
7) Pupils worked
   individually on
   assignments made by
   the teacher 0 (8.5) 0 7 (1.5) 100%
8) Pupils worked
   in groups on large
   units of work 11 (5) 61% 0 (7.5) 0
9) Pupils worked
   individually on
   various types of
   assignments 15 (4) 83% 0 (7.5) 0
10) Total class worked together on one activity  
\[
\begin{array}{ccc}
\text{No. of Schools} & \text{Rank} & 1949 \\
\text{Upper Group} & \text{Lower Group} \\
0 & (8.5) & 0 & 5 & (3) & 71% \\
\end{array}
\]

3. Follow-Up Procedures After The Trip to Williamsburg

a. Activities

1) In class, teacher and pupils discussed trip  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
18 & (2) & 0 & (11.5) & 0 \\
\end{array}
\]

2) Pupils made oral or written reports of trip  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
16 & (2) & 4 & (2) & 57% \\
\end{array}
\]

3) Pupils wrote stories, poems, plays, skits  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
7 & (7.5) & 0 & (11.5) & 0 \\
\end{array}
\]

4) Pupils made individual lists of what they enjoyed  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
5 & (11.5) & 0 & (11.5) & 0 \\
\end{array}
\]

5) Pupils reported to other classes of trip  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
7 & (7.5) & 4 & (2) & 57% \\
\end{array}
\]

6) Teachers and pupils selected materials for follow-up study  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
18 & (2) & 0 & (11.5) & 0 \\
\end{array}
\]

7) Class made study of modern Williamsburg  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
7 & (7.5) & 0 & (11.5) & 0 \\
\end{array}
\]

8) Pupils presented plays  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
3 & (16.5) & 0 & (11.5) & 0 \\
\end{array}
\]

9) Pupils made costumes for plays and skits  
\[
\begin{array}{ccc}
\text{Percent of Schools in} & 100% \\
\text{Upper Group} & \text{Lower Group} \\
3 & (16.5) & 0 & (11.5) & 0 \\
\end{array}
\]
10) Pupils made scrapbooks of Colonial Williamsburg
11) Pupils made scrapbooks of Modern Williamsburg
12) Pupils presented "Radio Quiz"
13) Pupils made maps of Williamsburg
14) Pupils painted pictures of their favorite scenes of Williamsburg
15) Pupils made models of Colonial furniture
16) Pupils dressed dolls in Colonial costumes
17) Pupils dressed dolls in Modern dress
18) Pupils began "Hobby Club"
19) Teacher and pupils made plans for other field trips

<table>
<thead>
<tr>
<th>No. of Schools</th>
<th>Percent of Schools in Upper Group 1949</th>
<th>No. of Schools</th>
<th>Percent of Schools in Lower Group 1949</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (11.5)</td>
<td>27%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
<tr>
<td>5 (11.5)</td>
<td>27%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
<tr>
<td>2 (18.5)</td>
<td>11%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
<tr>
<td>4 (14.5)</td>
<td>22%</td>
<td>4 (2)</td>
<td>57%</td>
</tr>
<tr>
<td>15 (4)</td>
<td>8%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
<tr>
<td>2 (18.5)</td>
<td>11%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
<tr>
<td>4 (14.5)</td>
<td>22%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
<tr>
<td>5 (11.5)</td>
<td>27%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
<tr>
<td>7 (7.5)</td>
<td>39%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
<tr>
<td>14 (5)</td>
<td>77%</td>
<td>0 (11.5)</td>
<td>0</td>
</tr>
</tbody>
</table>

b. Materials Used AFTER the Trip

<table>
<thead>
<tr>
<th>No. of Materials</th>
<th>Percent</th>
<th>No. of Materials</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Movies</td>
<td>10 (2)</td>
<td>55%</td>
<td>3 (4)</td>
</tr>
<tr>
<td>2) Maps</td>
<td>0 (7)</td>
<td>0</td>
<td>7 (1.5)</td>
</tr>
<tr>
<td>3) Lantern studies</td>
<td>2 (6.5)</td>
<td>11%</td>
<td>0 (6)</td>
</tr>
<tr>
<td>4) Film strips</td>
<td>3 (4.5)</td>
<td>16%</td>
<td>0 (6)</td>
</tr>
<tr>
<td>5) Charts, pamphlets</td>
<td>17 (1)</td>
<td>94%</td>
<td>5 (3)</td>
</tr>
<tr>
<td>6) Many textbooks (average four)</td>
<td>7 (3)</td>
<td>33%</td>
<td>0 (6)</td>
</tr>
<tr>
<td></td>
<td>0 (7)</td>
<td>0</td>
<td>7 (1.5)</td>
</tr>
<tr>
<td>7) Newspapers</td>
<td>2 (6.5)</td>
<td>11%</td>
<td>0 (6)</td>
</tr>
<tr>
<td>8) Magazines</td>
<td>3 (4.5)</td>
<td>16%</td>
<td>0 (6)</td>
</tr>
</tbody>
</table>
### Procedures Used AFTER The Trip

<table>
<thead>
<tr>
<th></th>
<th>No. of Schools</th>
<th>Percent</th>
<th>No. of Schools</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rank</td>
<td></td>
<td>Rank</td>
<td></td>
</tr>
<tr>
<td>1) Teacher selected and directed all activities</td>
<td>0 (12.5)</td>
<td>0</td>
<td>6 (3 )</td>
<td>85%</td>
</tr>
<tr>
<td>2) Teachers and pupils planned follow-up activities</td>
<td>18 (1.5)</td>
<td>100%</td>
<td>0 (8.5)</td>
<td>0</td>
</tr>
<tr>
<td>3) Teachers and pupils together evaluated the trip</td>
<td>18 (1.5)</td>
<td>100%</td>
<td>0 (8.5)</td>
<td>0</td>
</tr>
<tr>
<td>4) Many different types of books used in follow-up study</td>
<td>7 (6.5)</td>
<td>59%</td>
<td>0 (8.5)</td>
<td>0</td>
</tr>
<tr>
<td>5) Teacher and principal evaluated the trip</td>
<td>0 (12.5)</td>
<td>0</td>
<td>2 (4 )</td>
<td>28%</td>
</tr>
<tr>
<td>6) Pupils worked individually on assignments made by teacher</td>
<td>0 (12.5)</td>
<td>0</td>
<td>7 (1.5)</td>
<td>100%</td>
</tr>
<tr>
<td>7) Pupils worked individually on various types of assignments of their own choice</td>
<td>15 (4 )</td>
<td>83%</td>
<td>0 (8.5)</td>
<td>0</td>
</tr>
<tr>
<td>8) Total class worked together on one activity</td>
<td>0 (12.5)</td>
<td>0</td>
<td>0 (8.5)</td>
<td>0</td>
</tr>
<tr>
<td>9) Pupils worked in groups on large units of work</td>
<td>11 (5 )</td>
<td>61%</td>
<td>0 (8.5)</td>
<td>0</td>
</tr>
<tr>
<td>10) Question and answer method used</td>
<td>0 (12.5)</td>
<td>0</td>
<td>7 (1.5)</td>
<td>100%</td>
</tr>
<tr>
<td>11) Committee work, informal reports used in follow-up</td>
<td>17 (3 )</td>
<td>94%</td>
<td>0 (8.5)</td>
<td>0</td>
</tr>
<tr>
<td>12) Committee work, informal reports used in the study of Modern Williamsburg</td>
<td>7 (6.5)</td>
<td>39%</td>
<td>0 (8.5)</td>
<td>0</td>
</tr>
</tbody>
</table>

### Approximate Time Spent in Follow-up Study

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>0 hours</td>
<td></td>
</tr>
<tr>
<td>2)</td>
<td>1-3 hours</td>
<td>4</td>
</tr>
</tbody>
</table>
### Percent of Schools

<table>
<thead>
<tr>
<th>Hours</th>
<th>No. of Schools</th>
<th>Rank</th>
<th>1949</th>
<th>No. of Schools</th>
<th>Rank</th>
<th>1949</th>
</tr>
</thead>
<tbody>
<tr>
<td>3) 4-6 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) 7-9 hours</td>
<td>7</td>
<td></td>
<td>39%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) More than 9</td>
<td>11</td>
<td></td>
<td>61%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. The Final Test Was
Given Before the
Follow-Up Study Was
Completed
7 100%

The Final Test Was
Given After the Follow-
Up Study Was Completed
18 100%

### SUPPLEMENTARY ACTIVITIES LISTED BY TEACHERS

<table>
<thead>
<tr>
<th>Activity</th>
<th>No. of Schools</th>
<th>Upper Group 1949</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Seeing films</td>
<td>7</td>
<td>38%</td>
</tr>
<tr>
<td>2. Writing articles for local papers</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>3. Modeling Clay</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>Colonial dolls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage coaches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buildings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Organizing History Club with Virginia</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>History as center of interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Giving reports on Kodakrome slides</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>6. Listening to a talk given by former Colonial guide</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>7. Making own bulletin boards of Colonial Williamsburg</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>8. Using many magazines and newspapers</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>9. Reading more books of historical fiction</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>10. Creating their pictures with water colors and poster paint</td>
<td>2</td>
<td>11%</td>
</tr>
<tr>
<td>11. Creating stories used in the study</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>12. Arranging special exhibit of their art work for the entire school</td>
<td>2</td>
<td>11%</td>
</tr>
</tbody>
</table>
13. Making a model of the most important building in Williamsburg
14. Dancing the minuet
15. Studying the 18th century music instruments
16. Forming the excursion committee consisting of three pupils, three parents and the classroom teacher
17. Arranging special assembly programs for the entire school
18. Making furniture
19. Inviting patrons who saw "The Common Glory" in 1948 to talk to the class
20. Making card catalogue of all materials
21. Making a study of the President's Home and comparing it with the Governor's Palace
teacher and pupils suggested appropriate materials to be read and discussed before and after the trip. However, in the Lower Group, the teacher suggested the trip; the teacher lectured to pupils about Williamsburg, the teacher impressed upon the pupils what they should look for in Williamsburg; and the teacher selected and directed activities before and after the trip.

Materials used wisely in the classroom have an important place in the procedures of the teachers. In regard to the use of materials by the two groups, Table III reveals the following: in all schools in the Upper Group, the pupils saw educational films before the trip, and in 55% of the schools in the Upper Group, the pupils saw educational films after the trip. The pupils in all schools in the Upper Group used pamphlets, charts, and postcards before the trip, and in 94% of the schools in the Upper Group, pupils used charts and pamphlets after the trip. An average of four textbooks were used by pupils in all schools of the Upper Group before the trip; and in 39% of the schools in the Upper Group, the pupils used at least four textbooks after the trip. Table III revealed that in nearly three-fourths of the schools in the Upper Group the pupils used magazines before the trip. In contrast, in the Lower Group, all pupils saw educational films before the trip, and in 42% of the schools, the pupils saw educational films after the trip. In nearly three-fourths of
the schools the pupils used pamphlets and charts before and after the trip. In all schools in the Lower Group, pupils used only one textbook before and after the trip.

In informal reports, committee work, and in socialized recitation, pupils are given many opportunities to express themselves. In 94% of the schools in the Upper Group, the pupils used informal reports, committee work, and socialized recitation in their programs before and after the trip. Pupils worked individually on various types of assignments of their own choices in 83% of these schools before and after the trip. The question and answer method was used by all schools in the Lower Group before and after the trip. In all of the schools in the Lower Group, pupils worked individually on assignments made by the teacher before and after the trip.

An effective program of evaluation in education must be cooperative. Teachers, administrators, and pupils should be involved in determining the values obtained in the learning process. In the Upper Group, in 94% of the schools, the pupils and teachers evaluated the work before the trip and in all of the schools, the teachers and pupils evaluated the work after the trip. In 11% of the schools in the Upper Group, pupils evaluated the work apart from the teacher. In contrast in the Lower Group, in only 26% of the schools, the teacher and principal evaluated the work
after the trip.

The amount of time spent on the curriculum is an indication that the teacher and pupils make a more complete and a more thorough study of it. In the Upper Group, in over half of the schools involved, the pupils and teacher spent nine hours or more in the preparation for the trip, and in over half of the schools involved, the teacher and pupils spent nine hours or more in the follow-up study. However, in the Lower Group, in 58% of the schools involved, the teacher and pupils spent from four to six hours in preparation for the trip, and in 42% of the schools, the teacher and pupils spent from four to six hours in the follow-up study.

In 39% of the schools in the Upper Group, the class made a study of modern Williamsburg. In 22% of the schools, the pupils dressed dolls in Colonial costumes, and in 27% of the schools, the pupils dressed dolls in modern clothes and in 39% of the schools, the pupils began a "Hobby Club" after the trip to Williamsburg and in 77% of the schools, the teacher and pupils made plans for other field trips, whereas, in the schools of the Lower Group, none of these activities were used.

Upon examining the supplementary activities listed by teachers, it was found that in 38% of the schools in the Upper Group, additional films were used; in 11% of the schools in this same group pupils wrote articles for the local paper; made models of stagecoaches, buildings, and Colonial dolls; listened to a
talk given by a former Colonial guide; made their own bulletin boards of Colonial Williamsburg; read more books of historical fiction; painted pictures with water colors and poster paints; arranged special exhibits of their art work for the entire school, and listened to certain patrons talk to the class on Williamsburg.

On the questionnaire, it was possible for a teacher to make ninety-six checks. Teachers in the first seven schools of the Upper Group checked the greatest number of procedures, forty-four through sixty-one as shown in Table IV. In the Lower Group, the teachers checked from seventeen procedures to twenty-three as shown in Table V. In this study, the teachers of the Upper Group used more types of procedures, which involved the teacher and pupils making, executing, and evaluating the plans jointly.

In the Upper Group, the teachers and pupils used a variety of materials, before and after the trip, such as educational films, pamphlets, charts, postcards, magazines, and an average of four textbooks. In the Upper Group, informal reports, committee work, and socialized recitation were used altogether by the teachers and pupils. The evaluation program in the Upper Group was cooperative between teacher and pupils. In the Upper Group, the teacher and pupils in eleven schools spent more than nine hours in preparation for the trip and in the follow-up study. All the additional activities were listed by teachers from the Upper Group, none from the Lower Group.
<table>
<thead>
<tr>
<th>1949 Schools</th>
<th>Difference in Scores 1st and 2nd Tests</th>
<th>Number of Procedures Checked*</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 1</td>
<td>6.82</td>
<td>61</td>
</tr>
<tr>
<td>School 2</td>
<td>6.69</td>
<td>60</td>
</tr>
<tr>
<td>School 3</td>
<td>5.86</td>
<td>57</td>
</tr>
<tr>
<td>School 4</td>
<td>5.69</td>
<td>50</td>
</tr>
<tr>
<td>School 5</td>
<td>5.29</td>
<td>49</td>
</tr>
<tr>
<td>School 6</td>
<td>5.07</td>
<td>44</td>
</tr>
<tr>
<td>School 7</td>
<td>5.02</td>
<td>44</td>
</tr>
<tr>
<td>School 8</td>
<td>4.54</td>
<td>33</td>
</tr>
<tr>
<td>School 9</td>
<td>4.31</td>
<td>34</td>
</tr>
<tr>
<td>School 10</td>
<td>4.30</td>
<td>34</td>
</tr>
<tr>
<td>School 11</td>
<td>4.25</td>
<td>29</td>
</tr>
<tr>
<td>School 12</td>
<td>4.16</td>
<td>27</td>
</tr>
<tr>
<td>School 13</td>
<td>4.14</td>
<td>26</td>
</tr>
<tr>
<td>School 14</td>
<td>4.10</td>
<td>24</td>
</tr>
<tr>
<td>School 15</td>
<td>3.75</td>
<td>22</td>
</tr>
<tr>
<td>School 16</td>
<td>3.66</td>
<td>19</td>
</tr>
<tr>
<td>School 17</td>
<td>3.40</td>
<td>19</td>
</tr>
<tr>
<td>School 18</td>
<td>3.03</td>
<td>15</td>
</tr>
</tbody>
</table>

* Total number of checks given by each teacher on questionnaire.
<table>
<thead>
<tr>
<th>Schools (19-25) Lower Group</th>
<th>1949 Schools</th>
<th>Difference in Scores, 1st and 2nd Tests</th>
<th>Number of Procedures Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 19</td>
<td>2.93</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>School 20</td>
<td>2.31</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>School 21</td>
<td>2.00</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>School 22</td>
<td>1.98</td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>School 23</td>
<td>1.58</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>School 24</td>
<td>1.31</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>School 25</td>
<td>.58</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>
In terms of this study, it is not possible to state that any particular type of activity resulted in greater gains on the information tests by the pupils of the Upper Group. However, in this group procedures were characterized by democratic living in the classroom. In this group, arrangements were made in which organization, cooperation, and interaction were used to teach the ways of democracy, through committee roles, and informal reports. The pupils participated in planning, sharing, and evaluating the study.

In the Lower Group, few activities were used and the procedures were all teacher dominated.
CHAPTER IV

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The purposes of this investigation were (1) to find which teaching procedures produced the best results in terms of information gained by pupils as shown by the results of information tests, and (2) to compare the procedures used by teachers whose pupils made the greater gains on the test scores, with the procedures used by teachers whose pupils made the smaller gains on test scores.

Summary of the Findings. In the Upper Group, the procedures used by teachers may be characterized as being democratic in that, the teacher and pupils made plans for all activities as a cooperative undertaking, whereas, in the Lower Group the procedures were characterized as being teacher dominated and autocratic.

In the Upper Group, the teachers and pupils used a variety of materials, before and after the trip, such as educational films, pamphlets, charts, postcards, magazines, and an average of four textbooks. In the Lower Group, educational films, charts, and pamphlets were used and only one textbook for the entire study.

In the Upper Group, informal reports, committee work, and socialized recitation were used as contrasted to the question and answer method used entirely in the Lower Group.
In the Upper Group, the teachers and pupils evaluated their work, and in the Lower Group, the teachers and principals evaluated the work.

The pupils and teachers of the schools of the Upper Group spent more than nine hours on the study, and in the Lower Group, the teachers and pupils spent only from four to six hours.

Each supplementary activity listed by the teachers was from the Upper Group. The teachers of the Lower Group did not list any supplementary activities.

On the basis of findings in this study, the following conclusions are made:

1. Pupils of all the schools made positive gains in information as a result of the experiences in connection with the trip to Williamsburg.

2. There was no significant statistical difference between the Upper and the Lower Groups in the difference between the means of scores on the information tests before or after the trip.

3. Even though the differences between the means of the scores on the information tests are not statistically significant, the data obtained showed a rather definite tendency to distinguish between the Upper and Lower Groups in procedures. The activities planned by the teachers and pupils of the Upper Group included democratic procedures in all phases of the school program. The teachers and pupils planned a wide variety of activities before and after
the trip. The pupils in the Upper Group made greater gains on the
information tests. Therefore, in this study the democratic procedures
of the teachers of the Upper Group were closely related to the
pupils' gains.

In the Lower Group the teachers dominated the activities,
and autocratic procedures were used in the school program. The
pupils in the Lower Group made smaller gains on the information
tests. In this particular study the autocratic procedures of the
teachers of the Lower Group were closely associated with the
smaller gains by the pupils on the information tests.

Recommendations

The writer suggests that further investigation and study
be made in regard to educational trips to Williamsburg. The
following are recommendations:

1. A worth-while study might be made of procedures used
by teachers with a group of pupils on one particular grade level
on an educational trip to Williamsburg, Virginia. Results might
be measured in terms of pupil response on an information test.

2. Another study might be designed to evaluate growth in
responsibility, character training, and civic pride in children
as the result of an educational trip to Williamsburg, Virginia.

3. A profitable study might also be made of the social at-
titudes of the foreign students who visit Colonial Williamsburg in
a given year.
A. BOOKS


B. PERIODICAL ARTICLES


Ferguson, Charles W., "School's Out", *The Reader's Digest*, XXVIII (March, 1936), Pages 105-108.


C. ENCYCLOPEDIA ARTICLES


D. UNPUBLISHED MATERIALS


Fraser, James, "Outcomes of a Study Excursion", Teachers College Contributions to Education, Number 778. New York, 1939. Pages 78-81.
BIBLIOGRAPHY FOR PUPILS
SELECTED BIBLIOGRAPHY TO AID PUPILS IN A STUDY OF
COLONIAL WILLIAMSBURG*

A. BOOKS


B. PERIODICAL ARTICLES


*This material is suitable for Grades IV through VII.
C. ENCYCLOPEDIA ARTICLES


D. NEWSPAPERS

The Virginia Gazette (Williamsburg, Virginia) Historical Supplement July 11th to July 18, 1947, 112 pages.
A TRIP TO WILLIAMSBURG

Name of School: ____________________________________________

Teacher's Name: __________________________________________

Number of Years of Teaching Experience: ________________________

1. Origin of The Trip to Williamsburg (Please check all statements that apply).

   a. ___ Teacher suggested idea of trip.
   b. ___ Pupils suggested idea of trip.
   c. ___ Principal suggested idea of trip.
   d. ___ Idea of trip grew out of class discussions of pupils and teachers.
   e. ___ Others suggested idea of trip. (Please state who suggested the trip).

2. Preparation For The Trip To Williamsburg (In this section, please check all activities that apply, and then rank those you check in the order of their helpfulness).

   Rank  Check  a. Activities.
   ______  ______
   1) Pupils and teachers planned what should be done before the trip.
   ______  ______
   2) Teacher lectured to pupils about Williamsburg.
   ______  ______
   3) Teacher impressed upon the pupils what they should look for in Williamsburg.
   ______  ______
   4) Pupils and teachers suggested appropriate materials to be read and discussed.
   ______  ______
   5) Pupils made oral reports on reading materials.
   ______  ______
   6) Pupils outlined and summarized reading materials.
   ______  ______
   7) Pupils drew pictures pertaining to Williamsburg.
   ______  ______
   8) Pupils made a list of their own as to what each wanted particularly to see.
   ______  ______
   9) Pupils wrote original stories, plays, poems.
   ______  ______
   10) Pupils made simple models of Colonial furniture.
   ______  ______
   11) Pupils made scrapbooks emphasizing certain aspects of their study.
   ______  ______
   12) Pupils presented plays, skits, and programs dealing with Colonial Williamsburg.
   ______  ______
   13) Pupils made costumes pertaining to Colonial Williamsburg.
   ______  ______
   14) Pupils made maps of Colonial Williamsburg.
a. Activities (continued)

Please list and rank other activities in these spaces.

15) ______________________________

16) ______________________________

b. Materials used before the trip (Please check all materials used, and then rank those you found to be most helpful in preparing for the trip to Williamsburg).

1) The pupils studied maps.
2) Pupils saw lantern slides.
3) Pupils saw film strips.
4) Pupils saw the following movies or other appropriate movies:
   (a) "Eighteenth Century Life in Williamsburg."
   (b) "The Howards of Virginia."
   (c) "Cradle of a Nation."

Please list and rank other movies in these spaces:
   (d) ______________________________.
   (e) ______________________________.
5) Pamphlets, charts, postcards, and models were used.
6) Many textbooks were used. (State approximately how many)
7) Historical fiction was used in the study; for example, "The City of Once Upon a Time"; "Lad of Old Williamsburg."
8) Newspapers were used for the study.
9) Magazines were used for the study.

Please list and rank other materials used in these spaces.

10) ______________________________

11) ______________________________

c. Procedure Followed BEFORE The Trip.
   (Please check all procedures used, and then rank those you found to be most helpful in preparing for the trip.

1) Teacher selected and planned all activities.
2) Teacher alone evaluated work.
c. Procedure Followed BEFORE The Trip
(continued)

3) Pupils and teacher together selected and planned all activities.
4) Class used one textbook for study of Colonial Williamsburg.
5) Pupils and teacher together evaluated work.
6) Question and Answer method used entirely in the study of Colonial Williamsburg.
7) Socialized recitation, committee work, informal reports used.
8) Pupils evaluated work apart from teacher evaluation.
9) Pupils worked individually on assignments made by the teacher.
10) Pupils worked in groups on large units of work.
11) Pupils worked individually on various types of assignments of their own choice.
12) Total class worked together on one activity.

Please list and rank other procedures used in these spaces:

13) 

14) 

d. Approximate Time Spent In Preparation For Trip. (Please check one)

1) 0 4) 7 - - 9 hours
2) 1 - - 3 hours 5) More than 9 hours
3) 4 - - 6 hours

3. Follow-Up After The Trip To Williamsburg. (In this section, please check all activities that apply, and then rank those you check in order of their helpfulness.)

a. Activities.

1) In class discussion, teacher and pupils discussed the trip.
2) Pupils made oral and/or written reports of the trip.
3) Pupils wrote stories, poems, plays, skits about the trip.
4) Pupils made individual lists of what they particularly enjoyed on the trip.
Follow-Up After The Trip To Williamsburg
(Continued)

a. Activities.

5) Pupils reported to other classes on their trip.
6) Teachers and pupils selected materials for the follow-up study.
7) Class made study of modern Williamsburg.
8) Pupils presented plays.
9) Pupils made costumes for plays and skits.
10) Pupils made individual scrapbooks of Colonial Williamsburg.
11) Pupils made individual scrapbooks of Modern Williamsburg.
12) Pupils made puzzles.
13) Pupils presented "Radio Quiz" on trip to Williamsburg.
14) Pupils made maps of their trip to Williamsburg.
15) Pupils painted pictures of their favorite scene in Williamsburg.
16) Pupils made models of Colonial furniture.
17) Pupils dressed dolls in Colonial costume.
18) Pupils dressed dolls in Modern clothes.
19) Pupils began "Hobby Club" to collect old stamps, coins, silver, and pictures.
20) Pupils entertained parents with a "Colonial Tea".
21) Teacher and pupils made plans for other field trips.

Please list and rank other activities used in the follow-up study of Williamsburg, in these spaces:

22) __________________________________________
23) __________________________________________

List any new interests of your class, as a result of their trip:

24) __________________________________________
25) __________________________________________

b. Materials used AFTER the Trip. (Please list all materials used after the trip, and then rank those you found to be most helpful after the trip to Williamsburg was made).

1) Pupils saw movies.
2) Pupils studied maps.
b. Materials used AFTER the Trip. (Continued)

3) Pupils saw lantern slides.
4) Pupils saw film strips.
5) Charts, pamphlets, models, and postcards were used.
6) Many textbooks were used (State approximately how many).
7) Newspapers were used for the study.
8) Magazines were used for the study.

Please list and rank other materials used in these spaces:

9)
10)

9) ________________________________
10) ________________________________

c. Procedures used AFTER the Trip. (Please check all procedures used, and then rank those you found to be most helpful in the follow-up study).

1) Teacher alone evaluated the trip.
2) Teacher selected and directed all activities.
3) Teacher and pupils planned follow-up activities.
4) Teacher and pupils together evaluated the trip.
5) In the follow-up study one textbook used.
6) Many different types of books used in follow-up study.
7) Teacher and principal evaluated the trip.
8) Pupils worked individually on assignments made by the teacher.
9) Pupils worked individually on various types of assignments of their own choice.
10) Total class worked together on one activity.
11) Pupils worked in groups on large unit of work.
12) Pupils evaluated trip apart from teacher evaluation.
13) Question and Answer method used entirely in study of Modern Williamsburg.
14) Committee work, informal reports, used in the follow-up study of Colonial Williamsburg.
15) Committee work, informal reports used in the study of Modern Williamsburg.
c. Procedures used *AFTER* The Trip.
(continued)

Please list and rank other procedures used in the follow-up study.

16) .................................................................

17) .................................................................

d. Approximate Time Spent In The Follow-up Study. (Please check one)

1) _____ 0                                        4) _____ 7--9 hours
2) _____ 1--3 hours                                 5) _____ More than
3) _____ 4--6 hours                                 9 hours

4. The Final Test was given *BEFORE* the Follow-up Study was completed.
   (Check if applicable)

The Final Test was given *AFTER* the Follow-up Study was completed.
   (Check if applicable)
APPENDIX B
APPENDIX B

Pupil’s Name ___________________________  School ______________
Grade _______  Date ____________
Age ________

Form A Test
"A Trip to Williamsburg"

1
2
3
4

DIRECTIONS: Select the best answers and write its letter in the parenthesis preceding the statement.

Sample:

(c) A. The first capital of Colonial Virginia was:
a. Richmond; b. Yorktown; c. Jamestown;
d. Williamsburg.

Jamestown was the first Colonial capital of Virginia; therefore, we write "c" in the parenthesis preceding the statement.

( ) 1. In 1700 the Capital of Virginia Colony was: a. Yorktown; b. Middle Plantation; c. Alexandria.

( ) 2. Bacon’s Rebellion was plotted in Williamsburg in: a. 1676; b. 1776; c. 1876.

( ) 3. The Colonial Government Church was: a. Catholic; b. Episcopal; c. Baptist.

( ) 4. The first vital statistics were kept by: a. the jailer; b. the church; c. the college.

( ) 5. Who first settled in Williamsburg? a. the Dutch; b. the French; c. the English.

( ) 6. Which College was built in Colonial Williamsburg? a. Radford; b. Virginia Military Institute; c. The College of William and Mary.
7. The Governor's Palace was built in Williamsburg because: a. of the climate; b. the Governor liked to live in Williamsburg; c. it was the capital.

8. Special taxes were levied on tobacco for the benefit of: a. firemen; b. ministers of the church; c. college professors.

9. The Powder Horn was built to serve as: a. a dance hall; b. a church; c. an arsenal.

10. a. the capital; b. the Raleigh Tavern; c. the Palace was used as a home for the Governor of Virginia during the Revolutionary War.

11. In order to keep the roads repaired: a. poll taxes were used; b. the Stamp Act was used; c. the tax on tea was used.

12. George Washington was: a. president; b. chancellor; c. professor of William and Mary.

13. The architect who designed the main building at the College of William and Mary was: a. James Madison; b. Christopher Wren; c. Thomas Jefferson.

14. At Colonial social affairs, people danced: a. the jitterbug; b. minuet; c. foxtrot.

15. The first newspaper published in Virginia was: a. The Richmond News Leader; b. The Daily Press; c. The Virginia Gazette.


17. In our country, where was the first public asylum established? a. Yorktown; b. Williamsburg; c. Philadelphia.

18. "The Common Glory" held in Williamsburg each summer is: a. a musical comedy; b. stock play; c. historical pageant.

19. The financial success of the Virginia Colony was made: a. with the discovery of gold; b. growing of tobacco; c. the building of ships.

20. a. Richmond; b. Williamsburg; c. Norfolk was the capital of Virginia from 1699 to 1780.
( ) 21. The first theater in America was established at Williamsburg in: a. 1716; b. 1819; c. 1919.


( ) 23. Directly at one end of the main street in Williamsburg stands: a. the Raleigh Tavern; b. the Capitol; c. the Governor's Palace.

( ) 24. Directly one end of the main street in Williamsburg stands: a. Bruton Church; b. the College of William and Mary; c. the public jail.

( ) 25. The old Capitol Building was designed in the shape of the letter: a. H; b. S; c. W.


( ) 27. The members of the House of Burgesses represented: a. the King's choice; b. the governor's choice; c. the people's choice.


( ) 29. The unique architecture of the Court House is: a. its windows; b. the chimney; c. the porch.

( ) 30. An early form of manufacturing in Williamsburg was by: a. foundry; b. silversmith; c. glass works.

( ) 31. Williamsburg was probably America's first planned city; its streets form letters for the name of a King of England: a. King George; b. King Henry; c. King William.

( ) 32. Williamsburg gardens are noted for their: a. azaleas; b. tulips; c. boxwood.

( ) 33. What country's flag is now found flying over the Colonial Capitol Building: a. France; b. England; c. Italy.

( ) 34. The old mulberry trees were used in: a. paper making; b. for lumber; c. developing the silk industry.
35. The first permanent English settlement was made at:

36. During the Revolutionary War, George Washington made his
    headquarters at:
   a. The Travis House; b. the Wythe House;
   c. the Raleigh Tavern.

37. Peter Pelham was:
   a. the last colonial keeper of the jail;
   b. owner of tavern; c. secretary of the assembly.

38. The first American College to receive a charter from the
    Privy Council of London was:
   a. University of Virginia; b. William and Mary; c. Hampden-Sidney.

39. Stocks were used to:
   a. punish people; b. honor people;
   c. praise people.

40. The old Court House contains:
   a. an interesting Art exhibit; b. archaeological exhibit; c. musical exhibit.
Directions: Select the best answer and write the letter in the parenthesis preceding the statement.


The English people first settled in Jamestown; therefore, we write a "c" in the parenthesis preceding the statement.

1. People who could not pay their debts were put: a. in prison; b. lost their jobs; c. banished from the colony.

2. The early name for Williamsburg was: a. Henrico; b. Westover; c. Middle Plantation.

3. The honor society, Phi Beta Kappa, was organized in: a. the Capitol; b. the Governor's Palace; c. Raleigh Tavern.


5. Who was the first president of the College of William and Mary? a. Alexander Spottswood; b. James Blair; c. George Mason.

6. Williamsburg in Colonial Times was a: a. manufacturing center; b. seaport; c. cultural center.

7. In Colonial times people traveled to Williamsburg by: a. railroad; b. automobile; c. stage coach.

8. The members of Burgesses assembled in Williamsburg to: a. try cases; b. pay debts; c. make laws.

9. Colonial people convicted of crimes were often placed in: a. stocks; b. barrels; c. cages.
( ) 50. In olden times, food was kept in: a. refrigerators; b. cans; c. smoke houses.

( ) 51. The necessary craftsman in Colonial Times was: a. the blacksmith; b. the electrician; c. the automobile mechanic.

( ) 52. Eighteenth Century foods were usually sold at: a. chain stores; b. public markets; c. apothecary shops.

( ) 53. Williamsburg was the capital of Virginia from: a. 1500 to 1550; b. 1699 to 1780; c. 1901 to 1937.

( ) 54. Williamsburg is situated on: a. a peninsula; b. an isthmus; c. an island.

( ) 55. The growth and development of Colonial Williamsburg was due to good transportation: a. by railroad; b. by water; c. by air.

( ) 56. The members of the House of Burgesses were: a. appointed by the King; b. elected by the people; c. appointed by the Governor.

( ) 57. The first chartered city in Virginia was: a. Richmond; b. Roanoke; c. Williamsburg.

( ) 58. Williamsburg Taverns were well known for: a. their fine foods; b. for elevator service; c. golf courses.

( ) 59. The first governor of independent Virginia who held office in Williamsburg was: a. George Washington; b. James Blair; c. Patrick Henry.

( ) 60. Brafferton Hall was built as a school: a. for the Indians; b. for public meetings; c. for a law school.

( ) 61. A President of the United States who attended the College of William and Mary was: a. George Washington; b. Thomas Jefferson; c. John Adams.

( ) 62. The Wren Building at the College of William and Mary was designed by: a. an Englishman; b. a Dutchman; c. a Frenchman.

( ) 63. The streets of Williamsburg have mostly: a. Spanish names; b. French names; c. English names.
64. Colonial Williamsburg was famous for its: a. department stores; b. taverns; c. movie theaters.

65. Williamsburg is now known for its: a. race tracks; b. beaches; c. colonial gardens.

66. George Wythe was the first: a. doctor; b. professor of law; c. policeman in America.


68. Williamsburg was selected to be restored to its colonial atmosphere because it was: a. rich in colonial history; b. small; c. abandoned.

69. Many of the furnishings in the homes of Williamsburg were sent from: a. Brazil; b. England; c. Japan.

70. In early times, wigs were worn by: a. the cooks; b. gentlemen; c. little girls.

71. The College in Williamsburg was named for the King and Queen of: a. Spain; b. France; c. England.

72. The College of William and Mary was founded in: a. 1607; b. 1693; c. 1861.


74. a. ammunition; b. hymn books; c. pipes were kept in the Powder Horn.

75. The idea to restore Williamsburg to its Colonial appearance was conceived by: a. Dr. W. A. R. Goodwin; b. Calvin Coolidge; c. George Marshall.


77. The Colonial Governor’s house was called that: a. Mansion; b. Plantation; c. Palace.

78. Colonial Williamsburg had: a. street cars; b. horse-drawn carriages; c. automobiles.

79. The homes of Colonial Williamsburg were lighted by: a. gas lights; b. candles; c. oil lamps.

80. The old Williamsburg Court House is now used as: a. museum; b. dining hall; c. city hall.
# Answers to Tests

"A Trip to Williamsburg"

<table>
<thead>
<tr>
<th>FORM A</th>
<th>FORM B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. b</td>
<td>14. d</td>
</tr>
<tr>
<td>2. a</td>
<td>15. e</td>
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<tr>
<td>3. b</td>
<td>16. c</td>
</tr>
<tr>
<td>4. b</td>
<td>17. b</td>
</tr>
<tr>
<td>5. c</td>
<td>18. c</td>
</tr>
<tr>
<td>6. c</td>
<td>19. b</td>
</tr>
<tr>
<td>7. c</td>
<td>20. b</td>
</tr>
<tr>
<td>8. b</td>
<td>21. a</td>
</tr>
<tr>
<td>9. e</td>
<td>22. c</td>
</tr>
<tr>
<td>10. c</td>
<td>23. b</td>
</tr>
<tr>
<td>11. a</td>
<td>24. b</td>
</tr>
<tr>
<td>12. b</td>
<td>25. a</td>
</tr>
<tr>
<td>13. b</td>
<td>26. c</td>
</tr>
<tr>
<td>14. d</td>
<td>27. c</td>
</tr>
<tr>
<td>15. e</td>
<td></td>
</tr>
<tr>
<td>16. c</td>
<td></td>
</tr>
<tr>
<td>17. b</td>
<td></td>
</tr>
<tr>
<td>18. c</td>
<td></td>
</tr>
<tr>
<td>19. b</td>
<td></td>
</tr>
<tr>
<td>20. b</td>
<td></td>
</tr>
<tr>
<td>21. a</td>
<td></td>
</tr>
<tr>
<td>22. c</td>
<td></td>
</tr>
<tr>
<td>23. b</td>
<td></td>
</tr>
<tr>
<td>24. b</td>
<td></td>
</tr>
<tr>
<td>25. a</td>
<td></td>
</tr>
<tr>
<td>26. c</td>
<td></td>
</tr>
<tr>
<td>27. c</td>
<td></td>
</tr>
</tbody>
</table>
TABLE VI

NUMBER OF PUPILS IN THE PRELIMINARY TEST

AND THE MEAN OF EACH GROUP

<table>
<thead>
<tr>
<th>Group (1949)</th>
<th>Walter Reed School, Newport News, Virginia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Pupils</td>
<td>Grade Level</td>
</tr>
<tr>
<td>24</td>
<td>4th</td>
</tr>
<tr>
<td>25</td>
<td>5th</td>
</tr>
<tr>
<td>25</td>
<td>6th</td>
</tr>
<tr>
<td>25</td>
<td>7th</td>
</tr>
<tr>
<td>24</td>
<td>7th</td>
</tr>
</tbody>
</table>

\[ n_{\text{Total}} = 27.04 \text{ (1st Test)} \]

\[ n_{\text{Total}} = 28.07 \text{ (2nd Test)} \]

* (Possible score 40 - Total individual scores, divided by number of pupils for mean for each group.)
10 West Commodore Drive
Hilton Village, Virginia
February 1949

Mr.
Superintendent of Schools

Dear Mr.:

I am making a study of ways in which the experiences of pupils who visit Colonial Williamsburg can be made most helpful to them. In order to do this effectively, I should like to have your cooperation.

I would like for you to send me a list of teachers who are planning to take their pupils to Williamsburg during February, March, April, or May. I would like the names and addresses of teachers who are planning this trip. I am interested only in these grades: Fourth through Eighth.

The Department of Education at the College of William and Mary, and Colonial Williamsburg, approve the study and endorse these requests.

I wish to thank you in advance for your help in this matter.

Sincerely yours,

(Mrs.) Florence D. Graham
I am making a study of ways in which the experiences of pupils who visit Colonial Williamsburg can be made most helpful to them. In order to do this effectively, I should appreciate having your cooperation in the following matters:

1. Checking a teacher questionnaire.

2. Giving a multiple choice type test to your pupils before they come to Williamsburg.

3. Giving a follow-up test (multiple choice) to your pupils after the visit.

I will furnish the questionnaire and tests. Please fill in the questionnaire, give the tests, and return all material to me. I will score the tests.

The Department of Education at the College of William and Mary, where I am doing graduate work, and Colonial Williamsburg, approve the study and endorse these requests.

If you will cooperate in this study, please return the inclosed card.

Your cooperation will be greatly appreciated.

Yours sincerely,

Florence Graham

Mrs. Florence D. Graham
10 West Commodore Drive
Hilton Village, Virginia
APPENDIX E

I will cooperate in the study of "A Trip to Williamsburg".
(Please fill in each blank).

1. Teacher's name ____________________

2. Name of School ____________________
   White ______
   Negro ______

3. Location of School __________________
   Street __________________
   City ____________ State ______

4. Address of Teacher __________________
   __________________

5. Date of Proposed Trip to Williamsburg ______

6. Number of Pupils in your Group ______

7. Grade Level of Group ________________
I thank you for cooperating in the study, "A Trip to Williamsburg."

I am mailing to you a teacher questionnaire and the tests for your pupils. The first part of the questionnaire pertains to preparation for the trip, and the last part of the questionnaire deals with the follow-up work.

In the pupil's test paper, there is a block with four divisions, which is to be used in indicating a fair estimate of the child's native intelligence. Please check the class quarter in which each pupil ranks in ability in terms of all the pupils you have taught, using the figure (1) to indicate the highest quarter; the figure (2) to indicate the second quarter; the figure (3) the third quarter; and the figure (4) the lowest quarter.

Please give the first test; then, the trip will be made to Williamsburg. After the visit to Williamsburg, give the second test.

Please fill in the questionnaire and return the two tests and teacher questionnaire to me.

I thank you for your cooperation.

Yours sincerely,

Florence D. Graham

Mrs. Florence D. Graham
10 West Commodore Drive
Hilton Village, Virginia
INSTRUCTIONS FOR TEACHERS

STEP 1 Teacher questionnaire -

Please fill in all statements that apply, and be sure to check, and then rank those you found to be the most helpful.

STEP 2 Pupil's Test -

On Form A Test, be sure to read the directions aloud to the pupils and explain the sample. Do the same for Form B Test.

STEP 3 Allow enough time for each pupil to complete the tests, Form A - Form B.

STEP 4 Be sure to fill in the block on the pupil's test with the fair estimate of the child's native intelligence - for Form A Test, and Form B Test.

STEP 5 If you wish for the pupils to check the answers to the tests with you, include number Right, number Wrong, and number Left Out. I am enclosing a copy of the answers to the tests.

STEP 6 Please return the teacher questionnaire and tests (Forms A and B) to:

Mrs. Florence Graham
10 West Commodore Drive
Hilton Village, Virginia

REMINDER OF QUARTER DIVISIONS ON THE TESTS

On the pupil's test papers, you will find a block with four divisions. This block is to be used in indicating a fair estimate of the child's native intelligence.

Please check the class quarter in which each pupil ranks in ability in terms of all the pupils you have taught, using the figure (1) to indicate the highest quarter; the figure (2) to indicate the second quarter; the figure (3) the third quarter; and the figure (4) the lowest quarter.
APPENDIX G
### APPENDIX G

#### TABLE VII

**NUMBER OF PUPILS TAKING TESTS AND GRADE LEVEL OF EACH GROUP**

<table>
<thead>
<tr>
<th>Schools</th>
<th>Number of Pupils Taking Test Before Trip</th>
<th>Number of Pupils Taking Test After Trip</th>
<th>Grade Level of Each Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>School 1</td>
<td>31</td>
<td>32</td>
<td>7th</td>
</tr>
<tr>
<td>School 2</td>
<td>33</td>
<td>33</td>
<td>10th</td>
</tr>
<tr>
<td>School 3</td>
<td>16</td>
<td>17</td>
<td>5th</td>
</tr>
<tr>
<td>School 4</td>
<td>35</td>
<td>33</td>
<td>7th</td>
</tr>
<tr>
<td>School 5</td>
<td>24</td>
<td>24</td>
<td>10th</td>
</tr>
<tr>
<td>School 6</td>
<td>25</td>
<td>24</td>
<td>4th</td>
</tr>
<tr>
<td>School 7</td>
<td>30</td>
<td>25</td>
<td>11th</td>
</tr>
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<td>School 8</td>
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<td>24</td>
<td>5th</td>
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<td>School 9</td>
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<td>22</td>
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<td>4th</td>
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<td>School 11</td>
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<td>7th</td>
</tr>
<tr>
<td>School 12</td>
<td>42</td>
<td>42</td>
<td>4th</td>
</tr>
<tr>
<td>School 13</td>
<td>35</td>
<td>35</td>
<td>8th</td>
</tr>
<tr>
<td>School 14</td>
<td>21</td>
<td>22</td>
<td>5th</td>
</tr>
<tr>
<td>School 15</td>
<td>28</td>
<td>27</td>
<td>5th 7th</td>
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<td>22</td>
<td>21</td>
<td>5th</td>
</tr>
<tr>
<td>School 17</td>
<td>25</td>
<td>26</td>
<td>Freshmen in college</td>
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<td>School 18</td>
<td>35</td>
<td>34</td>
<td>8th</td>
</tr>
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<td>School 19</td>
<td>30</td>
<td>30</td>
<td>7th</td>
</tr>
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<td>School 20</td>
<td>45</td>
<td>45</td>
<td>5th</td>
</tr>
<tr>
<td>School 21</td>
<td>27</td>
<td>20</td>
<td>6th</td>
</tr>
<tr>
<td>School 22</td>
<td>44</td>
<td>39</td>
<td>4th</td>
</tr>
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<td>School 23</td>
<td>12</td>
<td>12</td>
<td>6th</td>
</tr>
<tr>
<td>School 24</td>
<td>33</td>
<td>23</td>
<td>6th</td>
</tr>
<tr>
<td>School 25</td>
<td>25</td>
<td>28</td>
<td>5th</td>
</tr>
</tbody>
</table>

**TOTAL NUMBER** | **729** | **701**
APPENDIX II

FORMULAE USED

1. Standard deviation: \( \sigma = \sqrt{\frac{\sum x^2}{N} - M^2} \)

2. Standard error of each mean:

\( \sigma' = \sqrt{\frac{\sigma}{N - 1}} \)

3. Standard error of the difference between the means:

\( \sigma_D = \sqrt{\sigma_1^2 + \sigma_2^2} \)

4. Critical Ratio:

\( \frac{D}{\sigma_D} \)

---

1. The above formulas were taken from Henry F. Garrett, Statistics in Psychology and Education, (Longmans, Green and Company, 1947).
APPENDIX I
APPENDIX I

TABLE VIII
CRITICAL RATIO OF INDEX OF ABILITY
OF THE UPPER AND LOWER GROUP

<table>
<thead>
<tr>
<th></th>
<th>Upper Group</th>
<th>Lower Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.39</td>
<td>2.97</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.314</td>
<td>.592</td>
</tr>
<tr>
<td>Standard error of the mean</td>
<td>.762</td>
<td>.246</td>
</tr>
<tr>
<td>Standard error of the Difference Between Means</td>
<td>.806</td>
<td></td>
</tr>
<tr>
<td>Critical Ratio (C.R.)</td>
<td>.719</td>
<td></td>
</tr>
</tbody>
</table>
VITA

Florence Graham was born in South Boston, Virginia, December 21, 1910, educated in the elementary and high schools of South Boston, and Madison College, Harrisonburg, Virginia, receiving the Bachelor of Science degree in December 1931.

She was a graduate student at George Washington University, Washington, District of Columbia, from September 1946 to January 1947.

She has taught in the public schools of Virginia for thirteen and one-half years, and, at present, teaches in the Walter Reed School, Newport News, Virginia.

She is a member of Kappa Delta Pi fraternity.