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THE EFFECTIVENESS OF A PUPIL  
ACTIVITY PROCEDURE IN THE  
TEACHING OF UNITED STATES  
HISTORY AT OTTAWA HILLS  
HIGH SCHOOL GRAND RAPIDS,  
MICHIGAN

Thesis for the Degree of M. A.  
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Ernest E. Giddings  
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IN THE TEACHING OF UNITED STATES HISTORY  
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by  
Ernest E. Giddings

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## CONTENTS

Chapter	Page
I. The Problem	1
A. Origin of Problem	1
B. Scope of the Experiment	2
C. Hypothesis	2
D. Definition of Terms	3
E. Purpose of the Investigation	4
F. Delimitation of Problem	5
II. Related Literature and Previous Studies	7
A. Related Literature	7
B. Previous Research	10
III. Procedures and Methods	18
A. Literature and Practice of Equating Groups	18
B. Equating the Groups	22
C. Procedure with Control Group	28
D. Procedure with Experimental Group	29
E. Initial and Final Tests	31
F. Establishment of Course Objectives	33
G. Major Factors Involved	34
IV. Findings and Interpretations	35
V. Summary, Conclusion, and Suggestions for Further Study	50
A. Summary	50
B. Conclusion	51
C. Limitations of the Conclusion	51
D. Suggestions for Further Study	52
Bibliography	53
Books and Bulletins	53
Periodicals	55
Appendix	56
Columbia Research Bureau American History Test, Form A	57
Columbia Research Bureau American History Test, Form B	65
Otis Self-Administering Test of Mental Ability, Higher Examination: Form B	73



## TABLES

Number		Page
I.	EQUALITY OF EXPERIMENTAL AND CONTROL GROUPS	24
II.	MEANS AND STANDARD DEVIATIONS OF CRITERIA USED TO EQUATE EXPERIMENTAL AND CONTROL SECTIONS	25
III.	MATCHED PAIRS EQUATED ON THE BASIS OF INTELLIGENCE QUOTIENTS, CHRONOLOGICAL AGE, AND HONOR POINT RATIO	27
IV.	SCORES OF EXPERIMENTAL AND CONTROL GROUPS ON PRE-TEST AND FINAL TEST	36
V.	MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE IN GAINS OF THE HIGH THIRDS OF THE EXPERIMENTAL AND CONTROL GROUPS ON THE BASIS OF INTELLIGENCE QUOTIENTS	39
VI.	MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE IN GAINS OF THE MIDDLE THIRDS OF THE EXPERIMENTAL AND CONTROL GROUPS ON THE BASIS OF INTELLIGENCE QUOTIENTS	41
VII.	MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE IN GAINS OF THE LOW THIRDS OF THE EXPERIMENTAL AND CONTROL GROUPS ON THE BASIS OF INTELLIGENCE QUOTIENTS	43
VIII.	MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE IN GAINS OF EACH THIRD OF EXPERIMENTAL AND CONTROL GROUPS, EQUATED ON THE BASIS OF INTELLIGENCE QUOTIENTS	44
IX.	MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE IN GAINS OF EACH THIRD OF EXPERIMENTAL AND CONTROL GROUPS, EQUATED ON THE BASIS OF AGE	45
X.	MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE IN GAINS OF EACH THIRD OF THE EXPERIMENTAL AND CONTROL GROUPS, EQUATED ON THE BASIS OF HONOR POINT RATIO	46
XI.	MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE IN GAINS OF EACH THIRD OF THE EXPERIMENTAL AND CONTROL GROUPS, EQUATED ON THE BASIS OF PRE-TEST SCORES	47
XII.	PRE-TEST AND FINAL SCORES, GAINS, AND DIFFERENCE IN GAINS OF THE TWENTY-EIGHT MATCHED PAIRS	48
XIII.	MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE IN GAINS OF EACH THIRD OF EXPERIMENTAL AND CONTROL MATCHED PAIRS	49



## CHAPTER I

### THE PROBLEM

#### A. Origin of Problem

This problem has forced itself upon the author during the last five years as a result of casual experimentation with various methods of classroom procedure in the teaching of United States History.

Debates, panel discussions, pupil forums and dramatizations were used at irregular intervals as means of enrichment of the course of study and variation of the method of presentation. The results from the standpoint of pupil interest, quantity of subject matter presented, and adaptability of the course of study to pupil participation were extremely satisfactory. The implication naturally followed that such devices could very well be a part of the established classroom procedure if the learning process proceeded either as well as or better than by the conventional classroom procedure. It then became the author's plan to conduct an experiment throughout one complete semester of the year 1938-1939 to determine the effectiveness of this method of teaching in comparison with the conventional classroom method.

## B. Scope of the Experiment

The experiment was begun on January 27, 1939 and continued for one semester of nineteen weeks ending June 16, 1939. One hundred high school pupils participated, fifty as a control group and fifty as an experimental group. The experimental group consisted of the nine-thirty section of twenty-seven pupils and the twelve-thirty section of twenty-five. The ten-thirty section and the one-thirty section of twenty-five pupils each constituted the control group. Ninety of the total group were in the second semester of the eleventh grade. Ten were seniors who had postponed taking the course because of some credit deficiency. All were pupils at Ottawa Hills High School, Grand Rapids, Michigan.

## C. Hypothesis

Experimentation with such pupil-classroom activities as debates, panel discussions, group study, and dramatizations during the last four years have led the author to the hypothesis that in the teaching of United States History to eleventh grade pupils a procedure of pupil responsibility by means of these activities is measurably superior to the conventional teacher-dominated procedure.



If this hypothesis is true the achievement or gains of the experimental group should be greater than those of the control group. If it is true there should be a higher degree of correlation between intelligence and achievement in the group taught by the pupil presentation procedure than in the group taught by the conventional procedure.

#### D. Definition of Terms

For the purposes of this experiment the term conventional classroom procedure shall be used to designate a question and answer method in a teacher-dominated class. Expressions of opinion, interpretations and comparisons were reasonably frequent by pupils but seldom originated in pupil initiative. Instead such participation was generally the result of a teacher originated question which itself probably often implied the answer.

Pupil activity procedure shall be used to designate a cooperative method of arriving at immediate objectives, of making assignments and of presenting the subject matter. It shall be understood to designate as much pupil participation as possible under existing conditions. Round table discussions directed by a pupil-chairman constituted the pupil activity during a major part of the semester. A detailed account of this

procedure appears in Chapter IV. Other activities were open forum debates, formal two-man team debates, and whole class forums.

Honor point ratio designates the point average of the individual's high school marks to the beginning of this experiment. Values were assigned as follows:

A, equals 4; B, equals 3; C, equals 2; D, equals 1; E, equals 0.

The Intelligence quotients used for equating groups were secured by the use of the Otis Self-administering test of Mental Ability, Higher Form A.

E. Purpose of this Investigation. This experiment then was carried on in an effort to obtain some reliable and quantitative data on the question of the relative effectiveness of teaching eleventh grade United States History by a student activity procedure as compared with teaching by the conventional question and answer procedure.

Special phases of the purpose were:

1. To determine which method, if either is more effective with the high third, the middle third and the low third of the groups studied on the basis of mental ability.

2. To determine which method, if either, is more effective with the oldest third, the middle third and the youngest third of the groups studied.



3. To determine which method, if either, is more effective with that group of students who, regardless of age or intelligence have succeeded in obtaining teachers' marks which place them in the high third, middle third, and low third of the group studied.

4. To determine which method, if either, is more effective with the high third, middle third and low third of the groups on the basis of the pre-test scores.

5. To determine which method, if either, is more effective with the high third, middle third, and low third of the twenty-eight pairs equated on the three criteria: age, mental ability, and honor point ratio.

6. To obtain data to compare the correlation between mental ability and achievement in the group taught by group activities procedure with the correlation between mental ability and achievement in the group taught by the conventional procedure.

#### F. Delimitation of Problem

It is not alleged in the hypothesis upon which this investigation is based that results would support the hypothesis if the proposed activity procedure were carried on with pupils below the eleventh grade in high school.

It is not contended that outcomes similar to the anticipated outcomes in this experiment would be obtained in other situations unless reasonably equivalent influences existed. These rather immeasurable factors peculiar to the community include:

- a. A high degree of home ownership
- b. A high degree of professional occupations among parents
- c. An environment tending to make pupils well adjusted socially
- d. A record of approximately seventy per cent of the school's graduates entering college
- e. A very negligible number of foreign born parents

It is not alleged that the test used in this experiment measures more than one important quality. Although not exclusively a subject matter test, it is predominately that. The measurement of citizenship, attitude, and application of knowledge to current problems as examples of other out-comes of history study is not attempted objectively in this experiment. Such outcomes tending more to the subjective than to the objective, fall in the class of philosophical judgments as pointed out by Murra<sup>1</sup> in an analysis of research in the teaching of social studies.

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1. Wilbur F. Murra, "Research in the Teaching of the Social Studies." Harvard Educational Review, 7:293-95, May, 1937.



## CHAPTER II

## RELATED LITERATURE AND PREVIOUS STUDIES

A. Related Literature

The concept of student activity is not new in the world of educational philosophy. There is evidence that the so-called progressive schools had their prototypes in Athenian and other classical educational systems. Aristotle advocated the principle of creative self-expression. He upheld a social system in which individual interests and group welfare were harmonized. In fact, much of the Greek concept of education was based upon freedom, cooperation, and intellectual creative activity. Mary E. Condon, in a study of the activity movement,<sup>2</sup> concluded that it was "as old as civilization itself." She traces phases of its origin back to Quintillian, St. Augustine, and Alcuin.

L. C. Mossman<sup>3</sup> summarized five important contributions on child activity as follows:

"Erasmus taught that knowledge of things is more important than knowledge of words.  
Bacon advocated the substitution of induction for deduction.  
John Locke regarded the child as the center of the learning process.  
Rousseau contended that the child has his own way of seeing, thinking, and feeling.  
Herbart contributed the doctrine of interest."

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2. Mary L. Condon, "Classical Backgrounds of the Activity Movement." Unpublished Master's thesis, University of Washington, 1933. Pp. 29.

3. L. C. Mossman, The Activity Concept. New York: Macmillan Company. 1938. Pp. 168.

Each of these philosophies would seem to support the hypothesis which the author proposes to test in this investigation.

John Dewey confirms for us his belief in the validity of experience when in a recent lecture he concluded:<sup>4</sup>

"In what I have said I have taken for granted the soundness of the principle that education, in order to accomplish its ends both for the individual learner and for society, must be based upon experience -- which is always the actual life experience of some individual."

He holds that this reconstruction and enrichment of experience constitutes the purpose and the end of living and education.

Briggs in attempting to establish a broad concept of the function of education asserts these two rules:<sup>5</sup>

"The first duty of the school is to teach pupils to do better the desirable things that they will do anyway."

"Another duty of the school is to reveal higher activities and to make them both desired and maximally possible."

Such a concept gives considerable support to the hypothesis of this study. Specifically applied it would help to justify a supervised cooperative group discussion procedure of attacking social, economic and political problems since these problems will be discussed anyway.

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4. John Dewey, Education and Experience. New York: The Macmillan Company. 1938. Pp. 113-114.

5. Thomas H. Briggs, Improving Instruction. New York: The Macmillan Company. 1938. Pp. 213-240.



S. A. Courtis<sup>6</sup> states the case for group activity, cooperation and democratic procedures in the April, 1938 Educational Method. He says cooperation is to be defined as simply "working together". He says all must participate in the deliberations and all must work for the good of each. He warns that it demands self-control but promises that the procedure will yield rich dividends.

Courtis<sup>7</sup> has also pointed out the difference in practice between competitive discussion and cooperative discussion. He shows that our procedures of law, debate, parliamentary processes and diplomacy have in the past been competitive and implies that the result is a competitive philosophy. He proposes that a procedure of cooperative discussion must displace competitive discussion in order that our teaching procedures actually be contributing factors toward the end we seek.

The National Education Association Research Bulletin, Modern Social and Educational Trends<sup>8</sup> asserts that students are participating in the direction of their own learning through the use of debates, conferences and committees.

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6. S.A.Courtis, "Techniques of Cooperation." Educational Method, 7:349-50, April, 1938.

7. National Education Association, Teachers and Cooperation. Yearbook on Cooperation, National Education Association, Department of Supervisors and Directors of Instruction, Committee on Cooperation. Detroit, Michigan: November, 1937. Pp. 81.

8. National Education Association, Modern Social and Educational Trends. Research Bulletin of the National Education Association, Vol. XII, No. 5. Washington, D.C.: November, 1934, Pp. 284-287.

Kilpatrick<sup>9</sup> shows that since we live in continuous change it has become the responsibility of education to prepare the child not for any specific situation but to provide him with experience in adjustment to the inevitable new condition. He must learn by practice the procedure of interpreting the present by applying the lessons of the past. Kilpatrick asserts that education then must provide methods of attack rather than the solution itself.

## B. Previous Research

### STUDY I<sup>10</sup>

1. Purpose. The aim of this experiment was to compare the effectiveness of teaching by the conventional textbook method with that of teaching by a procedure of pupil-activity.

2. Group Studied. Thirty pupils with an age range of from 12 to 16 years constituted the experimental group. This group showed a median chronological age of 13-6. They showed a reading grade-level range of from grade 6-B to grade 9-A. Their English grade-level also ranged from 6-B to grade 9-A, as did also their arithmetic grade-level. The control group of thirty-four also had a median chronological age of 13-6, but had a range of from 11-0 to 16-0 years. The control group ranged from 5-A to 9-A in

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<sup>9</sup>. W.H.Kilpatrick, Education for a Changing Civilization. New York: The Macmillan Company, 1938. Pp. 81.

10. Teresa Ryan, "An Experiment to Study the Effect of Two Methods of Instructions in Attempting to give an Understanding of Geometric Concepts in Two 8A Classes." Unpublished Master's thesis, University of Detroit, 1933. Pp. 64.

reading grade-level, from 5-A to 9-B in English grade-level, and from 6-B to 9-A in arithmetic grade level.

3. Specific Problem. To determine which method of instruction was more effective for each of the following levels: (a)above average; (b)average; (c)below average.

4. Means Used. Twenty-six items selected from the Butler Mathematics Test<sup>11</sup> were used as the pre-test and final test. The time allowed for the test was eight minutes.

5. Treatment of Data. Tables were prepared to show comparative gains made by experimental and control group of like mental rating, the two groups being divided into sub-groups having mental ratings listed as: A, B, C, and C-. Separate tables were also prepared to show comparison of gains made by students of 9A, 9B, 8A, 8B, 7A, 7B, and 6B reading grade equivalent. A total of twenty-six similar tables were prepared.

6. Conclusions. In every mental group rating listed, the experimental group was superior to the control group in the average gains. This was also true in every group in which the similarity was reading ability. The experimental group was superior to the control group in all grade levels of arithmetic abilities except in 6B grade.

The author gives the following as possible reasons why

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11. C. H. Butler, "Mastery of Certain Mathematical Concepts by Pupils at the Junior High School Level." The Mathematics Teacher, 25:120, March, 1932.



pupils did better work under the experimental procedure:

- a. The work was more appealing
- b. Students did constructive work and did not have to be satisfied with theory only.
- c. Students had the satisfaction of seeing abstract formulas made concrete.
- d. The students had opportunities of self-expression.

## STUDY II 13

1. Purpose. This study attempted to discover the effectiveness of group cooperation.

2. Group Studied. The control consisted of 108 graduate students in education working individually. The experimental group consisted of these same 108 students working in various sized groups.

3. Factors Studied. The ability to make up words out of the letters of a given word.

4. Conclusion. Group thinking proved to be superior to the average of even the best members of the group working alone. The group product in groups numbering up to ten, proved superior to individual production.

5. Evaluation. It would seem significant to the present study that Mr. Watson concluded that group cooperation showed superior results. It should support the hypothesis of the present study.

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13. G. B. Watson, "Do Groups Think More Efficiently Than Individuals?" Journal of Abnormal and Social Psychology. 29:236-253, May, 1924.

## STUDY III 13

1. Purpose. To determine the effectiveness of taking a Psychological Test as a group.
2. Group Studied. Twenty college upper classmen were paired.
3. Factors Studied. Group efficiency as compared with individual efficiency in answering questions of a Psychology test.
4. Means Used. Form I, and Form II, used alternately by control and experimental groups.
5. Conclusion. Means for the group were considerably higher than for those working alone.
6. Contribution to present problem. This study seems to show that group attack on this type of problem is superior to an attack by individuals working alone. It would provide evidence to show the effectiveness of cooperative diagnosis, analysis, and solving of problems common to the group.

## STUDY IV 14

1. Purpose. To determine the relative effectiveness of three different methods of laboratory instruction in high school biology.

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13. A. B. Weston, and H. B. English, "The Influence of the Group on Psychological Test Scores." American Journal of Psychology, 37:600-602, March, 1926.
  14. P. O. Johnson, "A Comparison of the Lecture-Demonstration, Group-Laboratory Experimentation and Individual-Laboratory Experimentation Methods of Teaching High School Biology." Journal of Educational Research, 18:103-111, September, 1928.

2. Groups Studied. Three classes of eleven pupils each, two of seventeen pupils each, and one of sixteen pupils, constituted the experimental groups. A rotation plan was used, to enable each class to perform eight laboratory exercises under each of the following methods of instruction, the lecture-demonstration, the group-laboratory and the individual-laboratory.

3. Means Used. Objective tests, containing from fifty to two hundred points, were used.

4. Conclusions. The test results were in favor of the lecture-demonstration method as compared to either of the other two methods. The difference, however, was not statistically significant.

5. Evaluation. Although Mr. Johnson did not claim significant difference in the three methods, he failed to admit two other factors which would seem to condition any possible conclusions from his experiment: (a) Only one factor, intelligence, was used as a basis for pairing the groups; (b) The total number of pupils was only eighty-four or an average of twenty-eight for each of the three methods of teaching.

#### STUDY V 15

1. Purpose. The object of this study was to determine the effect of group performance upon college students.

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15. P.R.Farnsworth, "Concerning So-Called Group Effects." Pedagogical Seminar, 35:387-94, September, 1928.

2. Group Studied. The groups consisted of twenty and thirty-six respectively.

3. Means Used. Four different tests were used on separate occasions:

- a. Ohio State University, Form 10, part 5.
- b. Terman Group Test, Form A
- c. Terman Group Test, Form B.
- d. Otis Self-administering Test.

4. Conclusions. No consistent group effect was found. Students working alone were slightly superior on difficult items.

#### STUDY VI 16

1. Purpose. This was an investigation to compare the results of teaching American History by the recitation method with the results of teaching by a combined contract and discussion method.

2. Group Studied. Twenty-seven eleventh grade pupils constituted the control group and another twenty-seven of the same grade, the experimental group. The data used, however, were those pertaining to twenty-one pairs of these pupils matched on mental ability as the only criterion.

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16. J. T. Yurkewitch, "A Controlled Experiment on the Contract-Discussion Method of Teaching Vs. The Recitation Method in United States History." Unpublished Master's thesis, Pennsylvania State College, 1933. Pp. 32.



3. Means of measurement. The following tests were used:

- (1) Columbia Research Test in American History;
- (2) Pressey and Richards Test in American History;
- (3) Wesley Test in Social Terms;
- (4) Wesley Test in Political Terms.

In three of these one form of the test was used as an initial test, and another form as a final test. The same Pressey and Richards Test, however, was used at the beginning and end of the experiment.

4. Conclusions. Of six tests used, five indicated a definite superiority of achievement in the group taught by the contract-discussion method. Two tests show a superiority in the class taught by the regular recitation method. The author states that this superiority may be due to formal drill in the class taught by recitation method and implies that no formal drill was used in the class taught by the contract-discussion method.

5. Evaluation. The purpose of this study by Mr. Yurkewitch is almost identical to the purpose of the present study. The experimental factor "A contract-discussion" method is shown by the author's definition to consist chiefly of pupil discussions from an outline contract. The chief limitation of the investigation is the small number of pupils, forty-two, and to the probability that pairing was in error since only one criterion, the intelligence quotient, was used for pairing individuals.

The obtained results show a definite superiority in the contract-discussion method.

Four of these studies found group activity to yield superior results to individuals working alone. One study found that individual study produced superior gains and in one study no difference in gains was discovered. Two of the four studies which found superior achievement resulting from group activity, dealt with high school students. The evidence, then, from these studies is inconclusive.

## CHAPTER III

## PROCEDURES AND METHODS

A. Literature and Practice of Equating Groups

In attempting to equate the experimental and control groups and to match pairs of individuals the author surveyed the devices and techniques suggested in the available literature on such procedures. A summary of certain of these techniques seems essential to justification of the methods used in the present study.

Melby and Lien<sup>17</sup> suggest using ordinary school classes without modification.

Douglass<sup>18</sup> in a study of two sequences in supervised study equated groups on the basis of chronological age, Otis intelligence scores, and scores made on standard achievement tests. He, however, transmuted the obtained intelligence and achievement test scores into regressed or estimated true scores in order to nullify to some extent the chance error of the raw scores. His next step was to convert the regressed subject matter scores into composite scores by the method of equal variables.

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17. E. O. Melby, and Agnes Lien, "A Practicable Technique for Determining the Relative Effectiveness of Different Methods of Teaching." Journal of Educational Research, 19:255-264, April, 1929.

18. Harl Roy Douglass, The Experimental Comparison of the Relative Effectiveness of Two Sequences in Supervised Study. University of Oregon. 1927. Pp.177-183.

Noll<sup>19</sup> equated two groups of college students by matching individuals on percentile rank on American Council Psychological Test and on honor point ratio on previous work in college.

Halvorsen<sup>20</sup> considered six college classes closely enough equated by using only the scores made on the Nelson High School English Test.

Courtis<sup>21</sup> contends groups cannot reliably be matched without taking into consideration the "growth culture". In equating groups of second grade pupils averaging eighty-four months old he speaks of them as the "same age" when his data show them to vary by eight months.

Monroe and Engelhart<sup>22</sup> say the following characteristics affect achievement in the field of experimentation; previous achievement in the field of investigation, study habits, and such personality traits as attitudes, ideals, and interests; health, sex, and race.

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19. Victor H. Noll, "The effect of Written Tests Upon Achievement in College Classes: An Experiment and A Summary of Evidence." Journal of Educational Research, 32:345-58, January, 1939.
  20. N. O. Halvorsen, An Experiment Comparing the Effectiveness of Two Methods of Indicating Errors In Students Themes. Research Report No.35. Cedar Falls, Iowa: Iowa State Teachers College. 1939, Pp. 1-2.
  21. S. A. Courtis, "Criteria for Determining the Equality of Groups" School and Society, 35:874-8, June 25, 1932.
  22. W. S. Monroe, and Max D. Engelhart, Experimental Research In Education. Bureau of Educational Research, Bulletin 48, Urbana, Illinois: University of Illinois, 1930. Pp. 19-20.



Yurkewitch,<sup>23</sup> in a controlled experiment conducted with two classes of twenty-seven pupils each, used only the criterion of intelligence for forming matched pairs. Of these fifty-four pupils, he found that forty-two pupils could be matched with a difference of not more than three points between the individuals paired.

Franzen<sup>24</sup> conducted an experiment to test effectiveness of teaching with groups equated on the criteria of percentile rank on "intelligence examinations" and initial scores of the test used.

Butterfield<sup>25</sup> used the criteria of age and intelligence quotients to equate two groups in an investigation of effectiveness of two methods of teaching history.

R. R. Fahrney<sup>26</sup> used the Nelson-Denny Reading Test as a basis of pairing and considered it quite dependable for pairing purposes.

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23. J. T. Yurkewitch, Op. cit. Pp. 3.

24. Carl G.F.Franzen, A Comparison of the Results made On Certain Standardized Tests by Pupils in the Bloomington High School Who Were Taught in Classes of the Same Grade by University Student Teachers and by Regular High School Teachers. Bulletin of the School of Education. Volume II, No. 4. Bloomington, Indiana: Indiana University. March, 1926. Pp. 4.

25. A.W.Butterfield, "A Study of the Relative Effectiveness of Two Methods of Teaching History." Unpublished Master's thesis, University of Michigan, 1935. Pp.9

26. R.R.Fahrney, A Comparison of the Effectiveness for Learning of the Lecture-Quiz Technique with the Classroom-discussion Technique in a Freshman Sophomore Course in American History. Bureau of Research, Iowa State Teachers College. Cedar Falls, Iowa. Research Report, No. 36. March, 1939. Pp. 3.

In the ten studies reviewed here only two groups were equated on identically the same basis. Each of these used only reading test scores as a basis of equation. None other of the ten experimenters used this factor even with some other.

One equated on growth curve and none of the others attempted to make any use of it. Only one of the ten studies made use of pre-test scores and these were used in combination with intelligence quotients. One investigation matched groups on honor point ratio while no other study used this basis of equating even with other factors. Only one study considered ordinary classes closely enough equated for experimental purposes and only one made use of a composite score. Four used intelligence quotients as a basis of matching but none of the four used the same combination of other factors.

No agreement seems to exist in practice regarding the most scientific method of equating groups. However, a common objective does seem to exist. All authorities and experimenters seem to agree that the aim should be to have groups so nearly alike that either group could be used as the experimental group.

### B. Equating the Groups

Two conditions would seem to justify the method of equating used by the author in this study rather than the regressed score-composite technique used by Douglass. The present author is dealing with one hundred pupils while Douglass' experiment involved approximately five hundred. It has been possible because of the small number of cases in the present experiment to conveniently re-test for mental ability in those cases where the teacher's judgment conflicted with the obtained score. A second difference is that the present author personally taught all of the classes involved while in Douglass' experiment the classes were taught by several different teachers.

Monroe and Engelhart<sup>27</sup> suggest that since a composite score implies the weighing of criteria and since no uniformly acceptable plan of determining appropriate weights exists that therefore it seems best to equate on the basis of intelligence and a few other clearly definable factors.

Two months previous to the beginning of this experiment, all the pupils of the school were given the Otis Self-administering Test of Mental Ability, Higher Examination, Form B. The test was administered by the principal and two teachers with training and experience in

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27. W. S. Monroe, and M. D. Engelhart, op. cit. Pp. 29.

giving such tests. Those few pupils who missed the test because of absence were given the test by the author under as normal conditions as possible during the second week of the semester.

The honor point ratio obtained was based on all academic subjects studied by the pupil in high school. Although Monroe recommends that only those subjects in the field of experimentation be considered, it has seemed wise in this experiment to include achievement in all subjects except those in which the objective is the attainment of a skill such as typing. Grades in typing, woodworking, machine shop, printing, sewing, cooking and art were disregarded.

At the beginning of this experiment several individuals had been enrolled in only two previous semesters of history, and that in the first year of high school, it was therefore concluded that the most valid honor point ratio would be secured by the inclusion of all academic subjects studied and by the omission of marks in vocational subjects.

Table I, Page 24, shows the intelligence quotient, chronological age, and honor point ratio of each individual in the investigation.



TABLE I

## EQUALITY OF EXPERIMENTAL AND CONTROL GROUPS

EXPERIMENTAL				CONTROL			
Pupil	I.Q.	C.A.	H.P.R.	Pupil	I.Q.	C.A.	H.P.R.
1	132	16.41	3.00	1	126	15.83	2.64
2	127	15.75	3.70	2	125	16.58	2.73
3	126	16.67	2.78	3	124	16.67	2.90
4	125	16.91	2.88	4	124	16.16	3.93
5	124	16.67	2.25	5	123	16.41	2.50
6	123	16.50	3.08	6	123	16.67	2.31
7	122	16.41	3.07	7	123	15.00	2.31
8	121	16.25	2.66	8	121	16.08	2.84
9	120	17.16	2.69	9	120	16.83	2.66
10	119	16.41	2.50	10	119	16.67	2.31
11	119	16.91	3.41	11	118	16.58	2.30
12	118	16.50	2.15	12	118	17.00	2.90
13	118	16.58	2.65	13	118	16.50	3.57
14	118	16.75	2.92	14	117	16.58	1.91
15	116	16.91	2.00	15	116	16.08	2.66
16	115	16.25	1.54	16	115	17.16	1.33
17	115	17.25	1.70	17	114	15.83	1.75
18	114	16.33	2.53	18	113	16.50	2.27
19	113	16.75	2.83	19	113	16.67	2.42
20	112	16.67	2.23	20	113	15.91	1.75
21	111	16.25	1.91	21	112	16.75	3.33
22	111	16.75	2.58	22	111	16.50	2.00
23	110	16.16	2.08	23	111	16.50	2.46
24	110	16.41	3.15	24	110	16.25	2.00
25*	110	17.16	2.00	25	109	17.83	1.93
26	108	17.00	3.00	26	108	18.25	1.72
27	108	16.25	2.33	27	107	16.41	2.74
28	108	17.33	2.69	28	107	17.16	2.06
29	108	17.83	2.00	29	107	16.41	1.75
30	107	16.75	2.31	30	106	16.58	2.41
31	105	16.41	1.83	31	105	16.50	2.25
32	105	16.83	2.36	32	105	18.33	1.30
33	104	16.41	2.50	33	105	17.67	2.66
34	103	16.67	2.24	34	105	16.83	2.94
35	103	16.25	2.91	35	104	16.25	1.50
36	102	17.41	1.77	36	104	16.83	1.50
37	102	16.67	2.57	37	103	16.75	2.41
38	101	17.25	1.41	38	102	17.58	1.15
39	100	16.67	1.77	39	102	17.67	1.55
40	99	17.77	2.27	40	102	16.16	2.08
41	99	16.75	3.00	41	99	17.33	1.07
42	97	16.33	2.57	42	99	17.00	1.93
43	97	17.16	1.41	43	95	16.08	2.50
44	95	16.83	1.50	44	94	16.91	1.75
45	95	18.33	1.66	45	94	17.50	1.21
46	94	18.33	1.18	46	93	17.67	2.06
47	92	16.50	1.40	47	92	18.16	2.24
48	92	18.00	2.00	48	89	18.00	1.94
49	89	16.08	2.25	49	86	17.16	1.91
50	86	16.83	2.25	50	86	17.25	1.16
51*	86	16.91	1.91				
52	86	16.50	2.53				

\* Left school during semester. Not included in statistical computations.

TABLE II

MEANS AND STANDARD DEVIATIONS OF CRITERIA USED TO EQUATE  
EXPERIMENTAL AND CONTROL SECTIONS

Group	N.	C.A.	S.D.	I.Q.	S.D.	H.P.R.	S.D.
<b>Experi- mental</b>							
3rd Hr. Sec.	26	16.67	.31	110.2	9.2	2.45	.49
5th Hr. Sec.	24	16.90	.70	107.8	12.4	2.27	.61
Total Group	50	16.70	.46	108.7	11.6	2.32	.58
<b>Control</b>							
3rd Hr. Sec.	25	16.79	.72	108.8	12.0	2.23	.61
6th Hr. Sec.	25	16.73	.56	108.2	8.9	2.19	.63
Total Group	50	16.76	.64	108.7	10.8	2.19	.60

Table II shows a difference of only .06 years between the mean chronological age of the control group and the experimental group. It shows a zero difference in mean I. Q. On this criterion then the total experimental group is more nearly equated to the total control group than either of the experimental sections are equated to one another or to either of the control.

sections. For this reason and for the purpose of dealing with larger and therefore more homogenous groups it has been considered justifiable in this study to deal statistically with the total groups rather than with separate sections.

Table III, Page 27, shows twenty-eight matched pairs to be used as a check on the results obtained with the total experimental and control groups. Three criteria were used as a basis of matching or pairing individuals. No pairs were formed in which one individual differed from the other more than three points in intelligence quotient as determined by the Otis Self-administering Test of Mental Ability, Higher Examination, Form B. No pairs were formed in which there was more than nine months difference in chronological age and a nearness of twenty-five hundredths in honor point ratio was rigidly adhered to. On this basis it was possible to match fifty-six individuals into twenty-eight pairs.

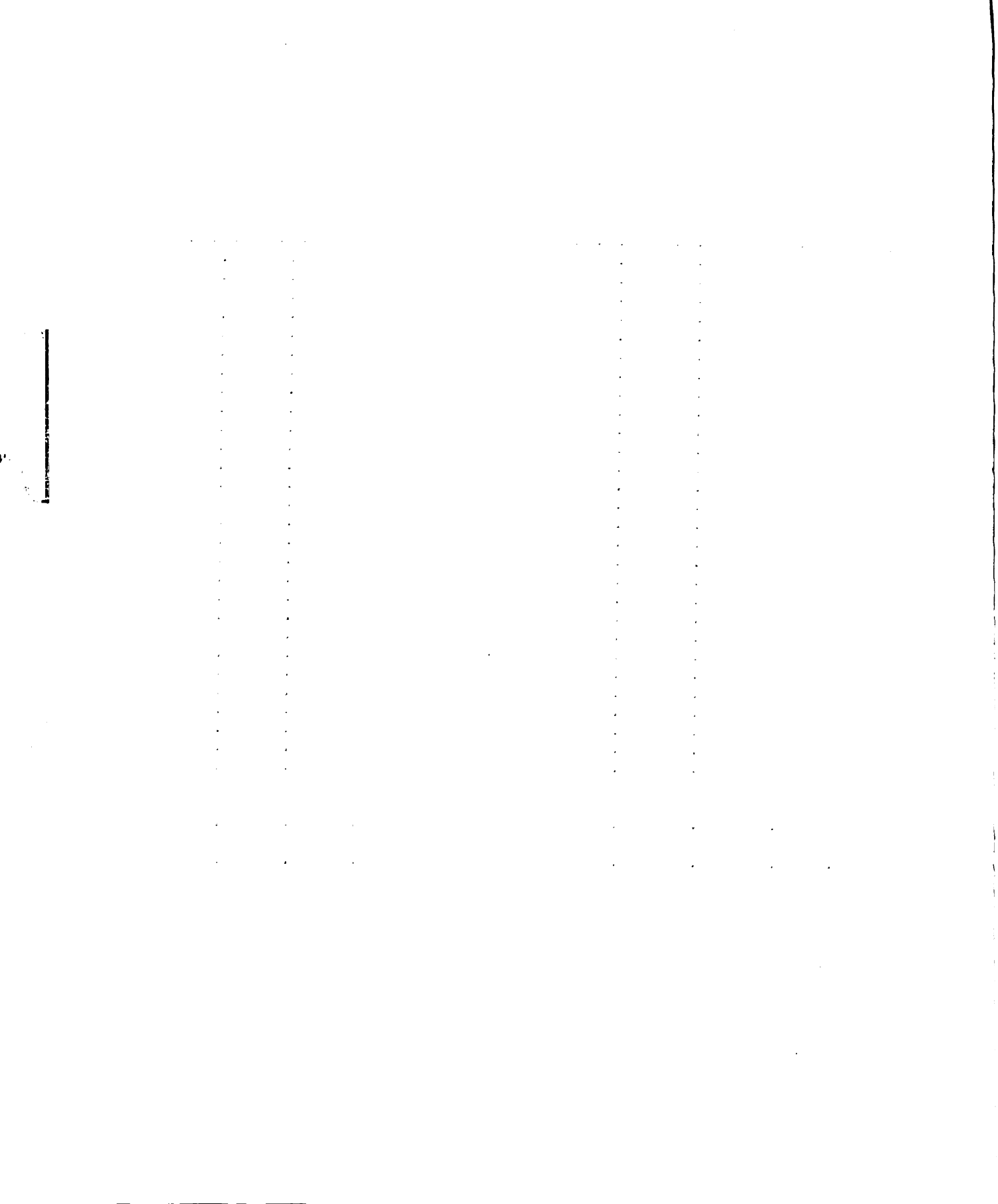


TABLE III

MATCHED PAIRS EQUATED ON THE BASIS OF INTELLIGENCE  
QUOTIENTS, CHRONOLOGICAL AGE, AND HONOR POINT RATIO

EXPERIMENTAL				CONTROL			
Pupil	I.Q.	C.A.	H.P.R.	Pupil	I.Q.	C.A.	H.P.R.
2	127	15.75	3.70	4	124	16.16	3.93
5	124	16.67	2.25	6	123	16.67	2.31
6	123	16.50	3.08	3	124	16.67	2.90
7	122	16.41	3.07	8	121	16.08	2.84
9	120	17.16	2.69	9	120	16.83	2.66
11	119	16.91	3.41	13	118	16.50	3.57
12	118	16.50	2.15	11	118	16.58	2.30
14	118	16.75	2.92	12	118	17.00	2.93
15	116	16.91	2.00	14	117	16.58	1.91
16	115	16.25	1.54	16	115	17.16	1.33
18	114	16.33	2.53	18	113	16.50	2.37
19	113	16.75	2.83	15	115	16.08	2.66
20	112	16.67	2.23	19	113	16.67	2.42
22	111	16.75	2.58	23	111	16.50	2.46
23	110	16.16	2.08	22	111	16.50	2.00
24	110	16.41	3.15	21	112	16.75	3.33
26	108	17.00	3.00	34	105	16.83	2.94
27	108	16.25	2.33	30	106	16.67	2.41
29	108	17.83	2.00	28	107	16.17	2.06
28	108	17.33	2.69	33	105	17.67	2.66
30	107	16.75	2.31	31	105	16.50	2.25
31	105	16.41	1.83	29	107	16.41	1.75
33	104	16.41	2.50	37	103	16.75	2.41
34	103	16.75	2.24	40	102	16.17	2.08
36	102	17.41	1.77	39	102	17.67	1.55
38	101	17.25	1.41	36	104	16.83	1.50
39	100	16.67	1.77	42	99	17.00	1.93
48	92	18.00	2.00	48	89	18.00	1.94
Mean	110.9	16.76	2.41		110.5	16.71	2.41
S. D.	9.8	.58	.56		9.2	.48	.59





### C. Procedure with Control Group.

Samuel R. Powers<sup>28</sup> warns against the inadequacy of merely calling a control group "old", "conventional", "traditional". The following is an attempt to avoid this error and to provide a comprehensive and complete description.

Assignments in the two control sections were by textbook chapters as units of work. There were as many units or chapter divisions as there were weeks in the semester, although the time devoted to units varied from three to seven days. In the control sections the assignments were arbitrary, no choice being allowed the pupils regarding the topic or topics each would study intensively. Assignments were made from three to seven days in advance. Preparation on the assignment depended chiefly upon the responsibility assured by each individual pupil. Thirty minutes, or half of the class period, was used for supervised study twice each week.

No formal drill was used. In the recitation itself, the instructor asked for recitation by topic, and after the pupil had exhausted his information and opinions on the topic, the instructor questioned the pupil regarding material omitted or slighted. Thought and discussion questions were used as much as possible by the instructor.

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28. Samuel R. Powers, "Psychology and Methods in High School and College." Review of Educational Research, 8:60-66, February, 1938.

Many such questions came from the students, but since pupil initiated discussion was the chief experimental factor, such questions were neither encouraged nor discouraged in the control sections.

#### D. Procedure With Experimental Group.

Student activity constituted the experimental factor in this study. Specifically then the following order of procedure was used:

1. Before starting a new unit of work, one-half hour was devoted to a preview of the unit about to be studied.
2. Major topics for special study and analysis were agreed upon in class.
3. Small groups of four or five students selected the topic of their choice for intensive study and research.
4. The following class period was usually devoted entirely to study and preparation by these study groups working in study rooms adjacent to the class room or adjacent to the library. The teacher seldom joined these groups except when requested. However, this was usually frequent enough to keep him occupied during the complete class period. The first act of the group meeting separately was to choose a chairman.

5. The discussion began on the third day following the choice of topics. It was understood to be the duty of the chairman to direct but not to arbitrarily dictate the course of the discussion. Participation by the other members of the class was always invited.

During the first month of the experiment an attempt was made to formulate whatever principles seemed necessary to govern conflicts which arose or were anticipated.

These principles which gradually evolved as a result of pupil-teacher cooperation will help to clarify the experimental procedure:

1. Topics shall always be chosen at least two days in advance.
2. Panel shall choose a chairman.
3. Panel shall have at least one meeting in the study room before appearing before the class.
4. Members of the panel shall be free to interrupt the discussion at any time.
5. Other class members shall be free to contribute or question panel at any time.
6. The chairman shall be responsible for bringing out ideas from the panel members.
7. Differences of opinion are welcome.
8. Differences of opinion of authorities will be analysed and accounted for if possible.
9. Authorities quoted or mentioned should be identified if not well known.

10. The chairman or someone previously designated by the chairman or group will summarize the findings.
11. When assignments of topics for group discussions are given time will be allowed for individuals to suggest specific questions or problems they wish analyzed.
12. Group discussions are not to be considered debates. One enters a debate with rather a closed mind but a discussion with an open mind.
13. One of the purposes of group discussions shall be to understand completely the meaning of the authority studied and of one another.
14. Permitting the discussion to proceed beyond a point not fully understood by any member of the class shall be considered an offense against him.
15. Remember that improvement in the procedure of group discussion may be as important as attainment of subject matter.

E. Initial and Final Tests.

1. Selection of the test.

Each of the United States History tests suggested by Krey<sup>29</sup> was surveyed to find the most suitable one to measure the initial status and final status of the individuals

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29. T.L.Kelley, and A.C.Krey, Tests and Measurements in the Social Sciences, Part IV Report of the Commission on the Social Studies. American Historical Association, New York; Scribner and Sons, 1934. Pp.610-616..

to be tested in this experiment. The tests suggested in the National Education Association Research Bulletin, "Improving Social Studies Instruction"<sup>30</sup> were also surveyed and considered. On the criteria of validity, reliability, objectivity, completeness, variety of type of test, cost, method of scoring, and availability, the Columbia Research Bureau American History Test was superior to each of the others for the purpose of this experiment. The test was prepared by Harry J. Carman, Thomas N. Barrows and Ben D. Wood of Columbia University. The authors found a coefficient of reliability of .91 between the two forms A, and B, of the test. They also found that when carefully checked against the New York Regents' examinations and against the final high school ratings in American history in Dewitt Clinton High School in New York City, the Columbia Research Bureau tests correlated more highly with each of these criteria than they did with each other. The test showed a correlation of .822 with the final high school marks in American history, and .467 with the Regents' examination marks..

### 2. Use of the tests.

Form A, of the test was given during the week preceding the first week of the semester. This was to

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30. National Education Association, Improving Social Studies Instruction. Research Bulletin of the National Education Association, Vol. XV, No. 5. Washington, D.C. November, 1937. Pp. 284-287.



determine the initial status of each individual. Form B, was used during the nineteenth week of the semester to determine the final status. Special care was taken by the two teachers giving the test to maintain the proper conditions during the giving of each test. Directions were followed exactly. Ninety minutes was the total time allowed for each test. Tests were corrected by the author and one paid student who was carefully supervised.

#### F. Establishment of Course Objectives.

During the second week of the semester one class period was devoted to the process of establishing and analyzing objectives for the course. The following objectives were accepted. Pupils in all sections were kept aware of these throughout the semester:

##### Objectives of the United States History Course.

1. To give pupils the most realistic knowledge that is possible of the conflicting groups and controversial issues in the past and present of our Nation.
2. To prepare pupils for promoting a wiser and more effective cooperation among individuals, states, groups and nations.
3. To develop character by giving pupils a desire to use knowledge for beneficent social ends.

4. To develop the intellectual processes desirable in a democracy:
  - (a) Skill in exploring and stating both sides of controversial questions.
  - (b) Skill in selecting and verifying information.
  - (c) Skill in discussing social problems.
5. To give pupils knowledge of historical, social, geographical, political, and economic facts which may be of importance to them in later life.

G. Major factors involved.

1. Constants.

The following factors were alike for the control and experimental groups.

- (a) All pupils were from one school.
- (b) One teacher taught all four of the sections.
- (c) The same textbook was used in all sections.
- (d) Identical course objectives were adhered to with all sections.
- (e) Both groups were carried on during the same semester.
- (f) No pupil was told that an experiment was in progress.
- (g) One control and one experimental section met in the forenoon and one of each in the afternoon.
- (h) Motivation from tests was similar in all sections, since similar weekly and monthly tests were used.

2. Variables.

The only variable factor involved in so far as the author could control the experiment was the method of presenting the subject matter to the experimental group.

## CHAPTER IV

## FINDINGS AND INTERPRETATIONS

In Table IV, Page 36, the individuals of the experimental and control groups are in the order of the pre-test scores within the respective groups. Number 4 of the experimental group received the highest pre-test score and therefore appears first in the experimental list. The third column in each list shows the final score, that is, the score obtained by giving Form B, of the Columbia Research Bureau test which is described on page 32.

In several instances irregular gains appeared. Certain of these are significant enough to be pointed out:

Number 1, of the experimental group with the highest I.Q. of any pupil in the study, scored 84 on the pre-test and 98 on the final which was a gain of 14 or 1.3 points below the mean gain for the experimental group. This individual, in the teacher's opinion contributed more to the class than any other pupil during the semester. However, it is true that during the semester several other students in number 1's section complained that he talked more than his share of the time.

Number 53 of the experimental group with the lowest I.Q. scored 54 on the pre-test and lost 2 points to score 52 on the final.



TABLE IV

SCORES OF EXPERIMENTAL AND CONTROL GROUPS  
ON PRE-TEST AND FINAL TEST

Experimental			Control		
Pupil	Pre-test	Final	Pupil	Pre-test	Final
4	105	138	4	121	125
27	101	110	12	107	117
31	100	130	2	105	110
9	99	128	3	97	99
22	95	89	13	87	121
11	90	103	23	83	114
24	89	105	6	81	94
1	84	98	11	79	75
5	82	70	18	77	90
37	78	83	20	76	83
8	77	101	35	75	83
26	77	86	21	74	90
18	77	81	1	74	109
16	75	98	7	73	84
6	75	100	5	72	118
45	73	90	41	72	41
13	72	74	37	69	52
43	71	81	48	69	82
2	69	91	9	68	71
36	68	102	34	68	96
30	66	51	8	64	87
3	66	88	36	63	69
10	64	86	14	62	60
35	61	90	22	61	67
14	61	81	30	61	72
17	60	73	10	60	114
23	58	69	15	60	50
32	57	74	38	58	107
12	56	89	24	57	57
40	54	73	27	56	119
52	54	52	33	55	60
29	54	72	44	55	58
34	53	75	16	53	37
15	52	55	31	52	63
33	50	54	49	51	45
47	48	36	26	50	84
41	48	54	43	49	53
19	47	73	17	48	63
7	47	43	42	45	56
49	45	51	19	44	44
42	45	71	29	44	52
38	44	62	50	44	28
50	41	79	45	40	53
28	39	56	25	39	76
21	37	55	47	37	42
39	36	60	39	37	42
46	36	62	32	34	38
44	33	34	28	32	46
48	30	69	46	30	33
20	25	49	40	25	38

Pupil number 2, with the highest honor point ratio in the experimental group, 3.70, scored 69 on the pre-test and gained 23 points on the final test. Pupil number 46 who had the lowest honor point ratio scored 36 on the pre-test and 62 on the final, gaining 26 points.

The greatest gain among the experimental pupils was 39 by pupil number 48 who had an I.Q. of 91. The greatest loss among the experimental group was 15 points by pupil number 30 with an I.Q. of 107. Pupil number 4 ranked first on both pre-test and final in the experimental group.

Within the control group, similar marked instances occurred: Pupil number 1, with highest I. Q. scored 74 on the pre-test and 109 on the final test, gaining 35 points. Pupil number 50 with the lowest I.Q. of 86 scored 44 on the pre-test and 28 on the final test, showing a loss of 16 points. The greatest gain was 63 points made by pupil number 27, with an I.Q. of 107. The greatest loss was 31 points, by pupil number 41 with an I.Q. of 99. Pupil number 4, with an I.Q. of 131 ranked first on both pre-test and final test.

The oldest individual, number 26, made a gain of 34 points. The youngest, number 7 made a gain of only 11 points. Number 4, with the highest honor point ratio

in either the control or experimental group gained only 4 points between the pre-test and final but in spite of this small gain, ranked first in both pre-test and final.

Table V, Page 39, shows that the high third of the experimental group made a mean gain of 16.5 in contrast to the mean gain of 13.3 of the control group. The range of gains among the experimental pupils is from -13 to 33 or 45 points while the range in gains of the control pupils is from -16 to 54 or 70 points. The wider range of gains of the control pupils would suggest that the experimental procedure was more effective since it induced more uniform gains.

The standard deviation of a frequency distribution of the gains of the experimental pupils is 12.36 as compared to 18.4 in the control group. This difference is an indication of greater consistency in gains among the experimental pupils.

In the difference column, no algebraic sign before the digit indicates a difference in gain in favor of the experimental individual. A negative sign indicates a difference in gain, in favor of the control individual. This column shows eleven cases in which the experimental individuals showed superior gains and six cases in which the control individual made the superior gains.



TABLE V

MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE  
IN GAINS OF THE HIGH THIRDS OF THE EXPERIMENTAL  
AND CONTROL GROUPS ON THE BASIS OF  
INTELLIGENCE QUOTIENTS

Experimental High Third		Control High Third		Diff.
Pupil	Gain	Pupil	Gain	
1	14	1	35	-21
2	23	2	5	17
3	23	3	2	20
4	33	4	4	29
5	-12	5	46	-58
6	25	6	13	12
7	-4	7	11	-15
8	24	8	23	1
19	29	9	3	26
10	22	10	54	-32
11	13	11	-4	9
12	33	12	10	23
13	3	13	34	-32
14	20	14	-2	18
15	3	15	-10	13
16	23	16	-16	39
17	13	17	19	-6
Mean	16.5		13.3	2.0
S. D.	12.36		18.4	

Table VI, Page 41, shows the middle thirds of the experimental and control groups on the basis of intelligence quotients. The control group made a mean gain of 16.1 which was 3.1 greater mean gain than the 13.0 of the experimental group. The importance of this superiority, however, is lessened by the fact that only seven control pupils made superior gains while eight experimental pupils made superior gains.

In this group the range of gains for the control individuals was from 0 to 63 or 63 points. Among the experimental individuals the gains ranged from -15 to 30 or 45 points. It is obvious that pupils number 25, 26, and 27 of the control group differed enough from the mean as to account in a large degree for the apparent superiority of the control group.

The standard deviation of 15.8 of the gains distribution for the control pupils is an indication of inconsistency. It is an indication of extreme cases. The standard deviation of the gains of the experimental pupils is an index of somewhat greater consistency among them, than was found among the control pupils.

TABLE VI

MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE  
IN GAINS OF THE MIDDLE THIRDS OF THE EXPERIMENTAL  
AND CONTROL GROUPS ON THE BASIS OF  
INTELLIGENCE QUOTIENTS

Experimental Middle third		Control Middle third		Diff.
Pupil	Gain	Pupil	Gain	
18	4	18	13	-9
19	26	19	0	26
20	24	20	7	17
21	18	21	16	2
22	6	22	6	-12
23	11	23	31	-20
24	16	24	0	16
26	9	25	37	-28
27	9	26	34	-25
28	17	27	63	-46
29	18	28	14	2
30	-15	29	8	-23
31	30	30	11	19
32	17	31	11	6
33	4	32	4	0
34	22	33	5	17
Mean	13.0		16.1	-23.8
S. D.	10.8		15.8	

Table VII, Page 43, shows the individual gains, mean gains, and the difference in gains between individuals in the low thirds of the experimental and control groups, on the basis of intelligence quotents. The mean gain of the seventeen experimental pupils was 16.4. The range in gains was from -12 to 39 or 51 points. Only two pupils show negative gains.

The mean gain of the seventeen control pupils was 5. Their range in gains was from -31 to 49 or 80 points as compared to range of 51 in the experimental group. Four control pupils made negative gains in achievement between the pre-test and final test.

The greater range of gains in the seventeen control pupils gives so large a standard deviation that there are 1.4 chances in a hundred that there may not be a real difference. There are, however, 98.6 chances in a hundred that the student activity procedure would again be the superior method with the low third of any similar group.

The standard deviation of 16.3 in the gains of the control pupils indicates an extremely wide dispersion of gains. The standard deviation of the gains of the experimental pupils shows more consistent gains.

TABLE VII

MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE  
IN GAINS OF THE LOW THIRDS OF THE EXPERIMENTAL  
AND CONTROL GROUPS ON THE BASIS OF  
INTELLIGENCE QUOTIENTS

Experimental Low third		Control Low third		Diff.
Pupil	Gain	Pupil	Gain	
35	29	34	28	1
36	34	35	8	26
37	5	36	6	-1
38	18	37	-17	35
39	24	38	49	-25
40	19	39	5	14
41	6	40	13	-7
42	26	41	-31	57
43	10	42	6	4
44	1	43	4	-3
45	13	44	3	10
46	26	45	13	13
47	-12	46	3	-15
48	39	47	5	34
49	6	48	13	-7
50	38	49	-6	44
52	-2	50	-16	14
Mean	16.4		5.1	11.5
S. D.	14.0		16.3	

TABLE VIII

MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE  
IN GAINS OF EACH THIRD OF EXPERIMENTAL AND  
CONTROL GROUPS, EQUATED ON THE BASIS  
OF INTELLIGENCE QUOTIENTS

Third	Experimental			Control		Diff. Chances in 100	
	N	Mean Gain	S.D.	Mean Gain	S.D.		
High	17	16.5	12.3	13.3	18.4	3.2	73
Middle	16	13.0	10.8	16.1	15.8	-3.1	73
Low	17	16.4	14.0	5.1	16.3	11.3	96.6
Total	50	15.3	12.7	11.3	18.0	4.0	88

Table VIII shows that there are 73 chances in 100 that the pupil activity procedure would again be the more effective teaching procedure under similar conditions with the high third. The conventional method would have 73 chances in a hundred of again being superior to the middle third. These do not constitute significant differences. However, there are 98.6 chances in 100 that the pupil activity procedure would again produce superior gains in the low third. This does constitute significant\* difference.

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\*Throughout this study, statistical significance was assumed if the probabilities were at least 95 out of 100 that the differences could not have occurred by chance.

TABLE IX

MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE  
IN GAINS OF EACH THIRD OF EXPERIMENTAL AND CONTROL  
GROUPS, EQUATED ON THE BASIS OF AGE

	Experimental			Control			
	N	Mean Gain	S.D.	Mean Gain	S.D.	Diff.	Chances in 100
Oldest third	17	14.4	13.2	3.5	18.4	10.9	98
Middle third	16	11.6	12.8	10.9	16.4	0.7	50
Youngest third	17	15.5	11.2	16.5	16.9	-1.0	58
Total	15	15.3	12.7	11.3	18.0	4.0	88

Table IX shows that the oldest third of the experimental group made a mean gain of 14.4 points and that the corresponding third of the control group gained only 3.5 points. The difference is 10.9 points. There are 98 chances in 100 that the pupil activity procedure would again produce superior gains with similar groups and under similar conditions. The pupil activity procedure then, is significantly superior with the oldest third. There is practically no difference between the gains of the middle thirds. The youngest third of the control group made mean gains slightly superior to those of the experimental group. A comparison of the standard deviations of these means, however, shows that the experimental pupils made the most consistent gains. The difference is not significant.



TABLE X

MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE  
IN GAINS OF EACH THIRD OF THE EXPERIMENTAL AND  
CONTROL GROUPS, EQUATED ON THE BASIS  
OF HONOR POINT RATIO

	Experimental			Control		Chances	
	N	Mean Gain	S. D.	Mean Gain	S.D.	Diff.	in 100
High third	17	17.8	18.0	17.6	18.0	0.2	50
Middle third	16	10.1	14.4	9.5	13.6	0.6	56
Low third	17	15.8	11.6	7.1	18.8	8.7	95
Total	50	15.3	13.7	11.3	18.0	4.0	88

Table X shows that the high third of the experimental group and the high third of the control group on the basis of honor point ratio made almost identical mean gains. There is, then, no superiority of one method over the other in its effect upon these pupils in the high third in achievement as indicated by teachers' marks. The data show that between the middle thirds on this basis there was no real difference. The low third of the experimental group made a mean gain of 15.8 while the low third of the control group gained only 7.1. The high standard deviation, 18.8, of the mean gain of the low third of the control group is indicative of a notable inconsistency in gains. The superiority of the pupil activity procedure with the low third is significant.

TABLE XI

MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE  
IN GAINS OF EACH THIRD OF THE EXPERIMENTAL AND  
CONTROL GROUPS, EQUATED ON THE BASIS  
OF PRE-TEST SCORES

Experimental				Control			
	N	Mean Gain	S.D.	Mean Gain	S.D.	Diff.	Chances in 100
High third	17	14.6	13.3	14.4	17.6	0.2	50
Middle third	16	17.8	13.3	15.2	21.6	2.6	67
Low third	17	15.5	13.3	9.5	14.0	6.0	90
Total	50	15.3	12.7	11.3	18.0	4.0	88

Table XI shows the results of the experiment when the thirds of each group are matched on the basis of the pre-test scores. There is no difference in gains between the high thirds. Between the middle thirds the difference in mean gains, 2.6 points, favors the experimental group. The difference is not significant. The mean gain of the experimental low third exceeded that of the control low third by 6.0 points. This difference closely approaches significance.

Comparison of the means and standard deviations of the low thirds shows that the experimental pupils made the more consistent gains.

TABLE XII

PRE-TEST AND FINAL SCORES, GAINS, AND DIFFERENCE IN GAINS  
OF THE TWENTY-EIGHT MATCHED PAIRS

Experimental				Control				
Pupil	Pre-test	Final	Gain	Pupil	Pre-test	Final	Gain	Diff.
2	105	138	33	4	121	125	4	29
5	82	70	-12	6	81	94	13	-25
6	75	100	25	3	97	99	2	23
7	47	43	-4	8	64	87	23	-27
9	99	128	29	9	68	71	4	25
11	90	103	13	13	87	121	34	21
12	56	89	33	11	79	75	4	37
14	61	81	20	12	107	117	10	10
15	52	55	3	14	62	60	-2	5
16	75	98	23	16	53	37	-16	39
18	77	81	4	18	77	90	13	-9
19	47	73	29	15	60	50	-10	39
20	25	49	24	19	44	44	0	24
22	95	89	-6	23	83	114	31	-39
23	58	69	11	22	61	67	6	5
24	89	105	16	21	74	90	16	0
26	77	86	9	34	68	96	28	-19
27	45	71	26	30	61	72	11	15
29	54	72	18	28	32	46	14	4
28	39	56	17	33	55	60	5	12
30	66	51	-5	31	52	63	11	-16
31	100	130	30	29	44	52	8	24
33	50	54	4	37	69	52	-17	21
34	53	75	22	40	25	38	13	9
38	68	102	34	39	37	42	5	29
38	44	62	18	36	63	69	6	12
39	36	60	24	42	45	56	9	15
48	30	69	39	48	69	82	13	26
Mean Gain				17.00				
				10.6				
S. D.				12.96				
				11.8				

Table XII shows the pre-test score, final score, and gain of each individual in the twenty-eight matched pairs. Twenty-four experimental individuals show gains and four show losses. Their mean gain was 17. Twenty-two control individuals show gains and six show losses. Their mean gain was 10.6. Table III, Page 27, shows the data by which these pairs were matched.

TABLE XIII

MEAN GAINS, STANDARD DEVIATION OF THE GAINS, AND DIFFERENCE  
IN GAINS OF EACH THIRD OF EXPERIMENTAL  
AND CONTROL MATCHED PAIRS

Experimental				Control		Chances	
	N	Mean Gain	S. D.	Mean Gain	S. D.	Diff.	in 100
High third	9	15.5	8.4	9.3	11.2	6.2	90
Middle third	10	15.4	8.4	9.3	14.0	6.1	88
Low third	9	20.3	13.0	5.8	9.2	14.5	99.7
Total	28	17.0	13.9	10.6	11.8	6.4	98

Table XIII shows the outcome of this investigation with the twenty-eight matched pairs. These results serve as a valuable check on the results obtained with the equated thirds of the total groups, since these twenty-eight pairs closely approached identity in the three criteria\* on which they were matched. The pupil activity procedure produced greater gains in each third of the matched pairs. In the high and middle thirds the difference is enough to indicate a definite superiority in the pupil activity procedure. Between the low thirds there is a significant difference in gains in favor of the experimental pupils. This outcome coincides with the results obtained with the low thirds of the total groups on each basis of comparison.

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\* Table III, Page 27, shows the likeness of the two pupils in each matched pair.

## CHAPTER V

## SUMMARY, CONCLUSION, AND SUGGESTIONS FOR FURTHER STUDY

A. Summary

The data presented in this study show that when United States history was taught to one group by a pupil activity procedure and to an equivalent group by the conventional procedure:

1. The high third of the experimental group, in mental ability who were taught by the pupil activity procedure, made superior but not significantly superior gains over the high third of the equivalent control group, taught by the conventional method.
2. The middle third of the experimental group, in mental ability, who were taught by the pupil activity procedure, made slightly inferior gains to those of the middle third of the equivalent control group who were taught by the conventional procedure.
3. The low third of the experimental group, in mental ability who were taught by the pupil activity procedure made significantly superior gains over the low third of the equivalent control group who were taught by the conventional procedure.
4. The oldest third of the experimental group made significantly superior gains over the oldest third of the control group who were taught by the conventional procedure.
5. The middle thirds of the experimental and control groups chronologically made approximately equal gains.
6. The youngest third of the experimental group made slightly inferior gains to those of the youngest third of the control group.
7. The high third of the experimental group, in previous academic achievement, made gains almost identical to the gains of the high third of the control group in previous academic achievement.
8. The middle third of the experimental group, in previous academic achievement, made slightly superior but not significant gains in comparison with the gains of the control group.
9. The low third of the experimental group in previous academic achievement, showed a significant superiority

in gains over the low third of the control group in previous academic achievement.

10. The high thirds of the experimental and control groups on the basis of pre-test scores made equal gains.
11. The middle third of the experimental group on the basis of pre-test scores made slightly superior gains over the control group on the basis of pre-test scores.
12. The low third of the experimental group on the basis of pre-test scores made definitely superior but not significant gains in comparison with the gains of the low third of the control group, on the basis of pre-test scores.
13. Each third of the experimental matched pupils showed definitely superior gains over the equivalent third of the control pupils. The gains of the low experimental third were statistically significant.

#### B. Conclusion.

Since the high and middle thirds of the experimental group were not consistently hindered by the pupil activity procedure, and since the low third made significantly superior gains, the implication follows that greater use of the pupil activity procedure in the teaching of United States history is justifiable.

#### C. Limitations of the Conclusion

1. It is impossible to determine the specific factor which produced the significant gains of the low third of the experimental group. Was it because each social problem was more thoroughly discussed, because greater individual responsibility for participation had been established or because the procedure set up more favorable conditions for first hand experience in dealing with the problems analyzed?

2. The results prove only that the low third made superior

gains in the outcomes measured by this particular test. Since the high third of the experimental group contributed much more in the discussions, it is possible that they achieved more in some less tangible outcomes which this test does not measure.

3. The success of the pupil activity procedure does not prove that the low third of a similar group should be segregated and then taught by the pupil activity procedure. It is probable since the high third participated observably more than the low third, that this reaction among the more able pupils of the high third made a definite contribution to the achievement of the less able ones in the low third.

#### D. Suggestions for Further Study

The following allied problems have arisen as a result of this investigation and are therefore suggested for further study:

1. Factors which account for occasional pupil loss in subject matter during a semester of enrollment in the subject.
2. The effect of using a pupil activity procedure in teaching United States history to the low third segregated from all others of the group.
3. The effect of using a pupil activity procedure in teaching United States history to the high third segregated from all others of the group.
4. The correlation between knowledge of the social studies and social conduct.
5. Means of measuring outcomes other than factual knowledge resulting from the social studies.

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## APPENDIX

# COLUMBIA RESEARCH BUREAU AMERICAN HISTORY TEST

By HARRY J. CARMAN

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History and Civics

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and BEN D. WOOD

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## TEST: FORM A

### For High Schools and Colleges

*Do not open this booklet, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, etc. Write plainly.*

Name .....  
(First name, initial, and last name)

Age last birthday ..... years.

Class ..... Date ..... 19.....

School or college .....

City ..... Teacher .....

How many school years have you studied American history in high school? (Indicate by drawing a circle around the right number.)  $\frac{1}{2}$ , 1,  $1\frac{1}{2}$ , 2.

**GENERAL DIRECTIONS.** This examination consists of four parts and requires ninety minutes of working time. The directions for each part are printed at the beginning of the part. Read them carefully and proceed at once to answer the questions. There is a time limit for each part. You are not expected to answer all the questions in any part before the time is up, but if you should, go back and make sure that your answers are right. You may then work further on any previous part or go ahead to the next part. If you have not finished a part when the time is up, stop work on that part and proceed at once to the next. No questions may be asked after the examination has begun.

You need two sharpened lead pencils. *Do not open the booklet yet.*

PART	SCORE
I	
II	
III	
IV	
Total	
Rating	
Classification	

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## PART I

**DIRECTIONS.** Read each of the following statements very carefully. If a statement is true, place a plus (+) in the parentheses following it; if it is false, place a zero (0) in the parentheses following it. If you are not sure whether a statement is true or false, leave the parentheses blank. Do not guess. *Twenty minutes.*

## SAMPLES.

- a. George Washington was the first President of the United States.....( + )  
 b. The panic of 1857 had no effect upon the economic life of the South.....( 0 )

1. All those who settled in Massachusetts previous to the Revolutionary War were required by law to become members of the Congregational Church. ( )
2. The English colonists in North America enjoyed more complete self-government than did the French colonists.....( )
3. Nothing resembling the feudal system of landholding existed in colonial America.....( )
4. Absolute liberty of conscience in religious matters was advocated by Cotton Mather.....( )
5. Class distinctions based on family and wealth existed in colonial America as well as in the Old World.....( )
6. Throughout the colonial period the Americans depended largely on England for their tools and clothing.....( )
7. The greatest barrier to the poor who wanted to migrate to America was the cost of the long sea voyage.....( )
8. Peter Zenger was a New York publisher who was arrested for criticizing government officials.....( )
9. The Albany Plan of Union was a scheme for uniting the six Iroquois nations of central New York.....( )
10. One of the principal industries of the Carolina colonists was cod fishing....( )
11. Some of the British colonies in North America never had colonial assemblies ( )
12. In colonial Virginia most churchgoers belonged to the Church of England....( )
13. The "Mayflower Compact" was the first written document to be adopted in America to provide a definite framework of government.....( )
14. Indentured servitude was a system whereby ship owners and other persons of means furnished the passage money to immigrants in return for their promise to work for a term of years to repay the sum advanced.....( )
15. The majority of the English colonies in America had compulsory education laws.....( )
16. By 1680 Philadelphia was the largest city in English colonial America.....( )
17. Mrs. Harriet Beecher Stowe wrote a novel picturing the worst features of the slavery system.....( )
18. The Webster-Hayne debates set forth the opposing doctrines of nationalism and states' rights.....( )
19. The Crittenden Compromise was a proposal designed to prevent the Pullman strike of 1894.....( )
20. The basic cause of the Mexican War was the discovery of gold in California.( )

21. The *Alabama* was an English-built Confederate cruiser used to prey on the commerce of the United States. ....(    )
22. Texas and Oregon were obtained at the same time through a compromise between Northern and Southern leaders. ....(    )
23. John Marshall believed in a liberal interpretation of the "implied powers" of the Federal Constitution. ....(    )
24. By the Treaty of Paris, which concluded the French and Indian War, Louisiana was ceded to France. ....(    )
25. Extensive land speculation was a very important contributing cause to the panic of 1837. ....(    )
26. By 1860 less than one half of American manufactures were produced in the New England and Middle Atlantic states. ....(    )
27. During the American Civil War the French attempted to establish an empire in Mexico. ....(    )
28. One of the reasons why Andrew Jackson vetoed the recharter of the second United States Bank was that it tended to retard the prosperity of Eastern manufacturers. ....(    )
29. By destroying the labor organizations then existing, the panic of 1837 tended to lower the standard of living of the working class. ....(    )
30. Prior to 1860 our educational institutions included most of the present-day social sciences in their courses of study. ....(    )
31. The first factory zone in America extended from Maine to Maryland. ....(    )
32. The South and West staunchly supported the second United States Bank. ....(    )
33. By 1850 the South was largely dependent on the North for credit and for manufactured goods. ....(    )
34. The Tariff of 1816 was primarily designed to prevent the export of American raw materials to France. ....(    )
35. The building of the Erie Canal increased the commercial importance of Boston. ....(    )
36. Alexander Hamilton insisted that the Federal government assume the debts which the various states had incurred during the Revolutionary War. ....(    )
37. The rapid Western expansion of agriculture led New England farmers to adopt large-scale farming in order to compete. ....(    )
39. The majority of the foreigners who came to the United States before 1860 settled in the Eastern cities. ....(    )
39. After 1820 the United States charged settlers nothing for the Western lands. ....(    )
40. The Federal Constitution, as originally adopted, provided for a two-house legislature. ....(    )
41. Recreation in urban America is tending to become less and less commercialized. ....(    )
42. The organization of agriculture in the South changed materially with the abolition of slavery. ....(    )
43. The Mugwumps were a group of dissatisfied Democratic leaders determined to defeat Grover Cleveland. ....(    )
44. American manufacturers as a group have usually favored immigration into the United States. ....(    )
45. By 1895 a majority of the disputes between capital and labor were settled by voluntary arbitration. ....(    )

*Go right on to the next page.*

46. The "blanket injunction" was used against organized labor in connection with the Pullman strike of 1894. .... ( )
47. The contention of the United States that it had sole jurisdiction of the seal fisheries in the Bering Sea was denied by an arbitral tribunal .... ( )
48. In 1920 more than three fourths of the American children of high school age were attending high schools. .... ( )
49. American business men carried on trade with the Orient before the Spanish-American War. .... ( )
50. Fewer courses in vocational training are now offered in American secondary schools than were offered in 1900. .... ( )
51. The Grangers demanded legislation that would forbid railroads to discriminate between shippers .... ( )
52. Since 1900 the infant mortality rate in the United States has decreased. .... ( )
53. The "crime of 1873" consisted in issuing a very large number of silver dollars( )
54. President Roosevelt advocated that all big business concerns be destroyed( )
55. Cleveland advocated reducing the Treasury surplus by spending large sums of money on internal improvements. .... ( )
56. At the close of the Civil War, Eastern manufacturers and Western farmers advocated Federal aid for railways. .... ( )
57. After being passed by Congress and signed by the President, laws affecting interstate commerce must be approved by the Supreme Court before they become effective. .... ( )
58. President Cleveland favored the repeal of the Sherman Silver Purchase Act of 1890. .... ( )
59. Since 1900, negroes have practically ceased to migrate from the South to the North. .... ( )
60. During the twenty years following the Civil War, the average prices of commodities increased. .... ( )
61. One of the principal purposes of the Ku Klux Klan, which operated during the late sixties, was to restore the political supremacy of the Southern whites. ( )
62. The American Federation of Labor is composed of radical trade unionists who desire to transform America into a communistic state. .... ( )
63. Since 1900 the majority of immigrants have crowded into the industrial centers of the United States. .... ( )
64. The Civil War acted as a great stimulus to industry in the North. .... ( )
65. In 1920 more than one half of the laborers in the factories of the North were foreign-born. .... ( )
66. In 1902 President Roosevelt threatened to send a fleet of American war ships to Venezuela to prevent Germany from gaining a territorial foothold there( )
67. Since the Civil War there has been a steady shift of population from rural sections to urban communities. .... ( )
68. Most American labor unions have been organized during periods of widespread unemployment. .... ( )
69. Harvesting machines were first used extensively in the United States after the close of the Civil War. .... ( )
70. Before the Spanish-American War citizens of the United States had economic interests in Cuba. .... ( )

71. The Sixteenth Amendment to the Constitution (income tax) was vigorously opposed by Western farmers. . . . ( )
72. The total railroad mileage in the United States was less in 1925 than in 1915. ( )
73. Western farmers generally have supported expansion in the volume of paper money. . . . ( )
74. Our merchant marine did not keep pace with our industrial growth after the Civil War. . . . ( )
75. Over a million persons annually attend the Farmers' Institutes held in the various states. . . . ( )
76. The Federal Reserve System effectively prevents "elasticity" of currency. ( )
77. The proportion of illiteracy in the United States is greater among immigrants from southern Europe than among negroes. . . . ( )
78. The Presidential Succession Act forbade any person to hold the office of President of the United States for more than two full terms. . . . ( )
79. The famous Fourteen Points outlined President Wilson's program for insuring permanent World Peace . . . . ( )
80. Until 1890 stock grazers had almost free use of the unsettled Western plains. ( )

*If you finish before the time is up, go on to Part II.*

<i>Number right</i> . . . . .	<i>Number right</i> . . . . .
<i>Number wrong</i> . . . . .	<i>Number wrong</i> . . . . .
<i>Number omitted</i> . . . . .	<i>Rights minus wrong</i> . . . . . (Score)
<i>Sum should equal 80.</i>	



## PART II

**DIRECTIONS.** Below are eight groups of items, each of which is divided into two columns. Each item in the left-hand column is numbered. Each item in the right-hand column is followed by parentheses. Place in the parentheses the number of that item in the left-hand column that is associated with the item in the right-hand column. Each group is a separate problem; do not match items in one group with items in another group. *Twenty minutes.*

**SAMPLES.**

- |            |                                   |
|------------|-----------------------------------|
| a. 1. 1492 | Declaration of Independence ..... |
| 2. 1620    | Discovery of America .....        |
| 3. 1776    |                                   |

- 
- |                    |   |
|--------------------|---|
| I. 1. Pennsylvania | First permanent settlement in America .....   |
|                    | Tobacco .....                                 |
| 2. Massachusetts   | Largest number of German settlers .....       |
|                    | Samuel Adams .....                            |
| 3. New York        | Robert Morris .....                           |
|                    | Last colony to be established .....           |
| 4. Virginia        | Rum manufacture .....                         |
|                    | Poor Richard's Almanac .....                  |
| 5. Georgia         | Zenger Trial .....                            |
|                    | Dutch West India Company .....                |
| II. 1. 1493        | Albany Plan of Union .....                    |
| 2. 1588            | Pope's Line of Demarcation .....              |
| 3. 1676            | Louisiana Purchase .....                      |
| 4. 1714            | Northwest Ordinance .....                     |
| 5. 1754            | Bacon's Rebellion .....                       |
| 6. 1787            |   |
| 7. 1803            |   |
| III. 1. 1815       | Tariff of Abominations .....                  |
| 2. 1820            | Missouri Compromise .....                     |
| 3. 1828            | Emancipation Proclamation .....               |
| 4. 1837            | Admission of Texas as a state .....           |
| 5. 1845            | Andrew Jackson's victory at New Orleans ..... |
| 6. 1863            |   |
| 7. 1873            |   |
| IV. 1. 1865        | Hay-Pauncefote Treaty .....                   |
| 2. 1878            | Opening of Panama Canal .....                 |
| 3. 1884            | Esch-Cummins Act (Transportation Act) .....   |
| 4. 1896            | First election of Grover Cleveland .....      |
| 5. 1901            | Bland-Allison Act .....                       |
| 6. 1914            |   |
| 7. 1920            |   |

- |                         |                                      |
|-------------------------|--------------------------------------|
| <b>V. 1. Mormons</b>    | William Lloyd Garrison . . . . . ( ) |
| 2. Foreign diplomacy    | Cyrus McCormick . . . . . ( )        |
| 3. Civil Service Reform | Salmon P. Chase . . . . . ( )        |
| 4. Organized labor      | George Pendleton . . . . . ( )       |
| 5. Harvesting machinery | James G. Blaine . . . . . ( )        |
| 6. Abolition            |                                      |
| 7. Civil War finance    |                                      |

- |                            |                                  |
|----------------------------|----------------------------------|
| <b>VI. 1. Philanthropy</b> | Samuel F. B. Morse . . . . . ( ) |
| 2. Dartmouth College Case  | Henry Clay . . . . . ( )         |
| 3. Organized labor         | E. H. Harriman . . . . . ( )     |
| 4. Telegraph               | Andrew Carnegie . . . . . ( )    |
| 5. Missouri Compromise     | John Mitchell . . . . . ( )      |
| 6. Pullman strike          |                                  |
| 7. Railroads               |                                  |

**VII.** (This outline map shows the limits of the geographical sections listed below.)



1. New England States
2. Middle Atlantic States
3. South Atlantic States
4. North Central States
5. South Central States
6. Rocky Mountain States
7. Pacific Coast States

**Greatest production of**

- |                                   |     |
|-----------------------------------|-----|
| Cereals . . . . .                 | ( ) |
| Iron . . . . .                    | ( ) |
| Oil . . . . .                     | ( ) |
| Automobiles . . . . .             | ( ) |
| Lumber . . . . .                  | ( ) |
| Sugar . . . . .                   | ( ) |
| Sheep . . . . .                   | ( ) |
| Clothing (manufactured) . . . . . | ( ) |
| Citrus fruit . . . . .            | ( ) |
| Furniture . . . . .               | ( ) |

- |                                  |                             |
|----------------------------------|-----------------------------|
| <b>VIII. 1. Philip D. Armour</b> | Oil . . . . . ( )           |
| 2. T. Coleman du Pont            | Steel . . . . . ( )         |
| 3. Charles M. Schwab             | Railroads . . . . . ( )     |
| 4. John D. Rockefeller           | Meat packing . . . . . ( )  |
| 5. J. B. Duke                    | Merchandising . . . . . ( ) |
| 6. John Wanamaker                |                             |
| 7. James J. Hill                 |                             |

*If you finish before the time is up, complete Part I or go on to Part III.*

*Number right . . . . . (Score)*

## PART III

**DIRECTIONS.** Below are several statements and questions, each of which is followed by five phrases. Mark in the parentheses the number of that phrase that correctly completes the statement or answers the question. (One, and only one, phrase is correct in each case). *Thirty-five minutes.*

## SAMPLE.

- a. One of the principal products of colonial New York was —  
 1 rice    2 indigo    3 flour    4 gold    5 aluminum.....( 3 )

- 
1. The five Intolerable Acts were authorized by —  
 1 the Colonial Assembly of Massachusetts    2 the First Continental Congress    3 the royal Governor of Massachusetts    4 the Second Continental Congress    5 the British Parliament.....( )
2. The bulk of intercolonial commerce was carried by means of —  
 1 canals    2 inclined railways    3 pack horses    4 stagecoaches    5 river and coastwise boats.....( )
3. The Molasses Act of 1733 was designed to aid —  
 1 English West Indian planters    2 colonial merchant shippers    3 French sugar growers    4 English merchants    5 Dutch carriers.....( )
4. Which one of the following cities had a population of 10,000 or more during the colonial period?  
 1 Hartford    2 Williamsburg    3 Charleston    4 Albany    5 Jamestown ( )
5. The Continental Congress of 1776 —  
 1 drafted a Declaration of Independence    2 planned the city of Washington, D. C.    3 sent a petition to the British Parliament    4 formulated the Federal Constitution    5 levied a protective tariff.....( )
6. The chief source of specie for the colonies was —  
 1 the mother country    2 colonial mines    3 trade with the Indians    4 trade with foreign West Indies    5 gold mines of Argentine.....( )
7. The Proclamation of 1763 —  
 1 encouraged colonists to settle beyond the Alleghenies    2 directly encouraged the French to carry on their fur trade in the Mississippi Valley    3 forbade colonists to settle in the territory acquired from the French as a result of the French and Indian Wars    4 opened the Mississippi Valley to colonial missionaries    5 opened the Mississippi Valley to American land speculators.....( )
8. The Alien and Sedition Laws were enacted —  
 1 for the purpose of ending radical French influence in America and silencing opposition to the government    2 to boost the political fortunes of John Marshall    3 to silence the discord within the Federalist party    4 to end the dreamy career of Aaron Burr    5 to restrict immigration...( )
9. The Federalist leaders were for the most part —  
 1 discontented farmers    2 workingmen    3 tenant farmers    4 frontiersmen    5 business men.....( )

10. The Underground Railway was —  
 1 the first subway running under the Hudson River    2 the first experiment with an underground cable for operating trolley cars    3 the name given to a system of aiding the escape of runaway negroes    4 the chief line of communication between the battlefields of Antietam and Gettysburg  
 5 the passageway connecting the Senate Chamber and the Senate Office Building.....(    )
11. The religious denomination which was most active on the frontier between 1820 and 1840 was —  
 1 Methodist    2 German Lutheran    3 Episcopalian    4 Hebrew  
 5 Congregational.....(    )
12. The annexation of Texas was advocated by —  
 1 John Quincy Adams    2 Daniel Webster    3 President Tyler  
 4 Harriet Beecher Stowe    5 Theodore Roosevelt.....(    )
13. The Webster-Ashburton Treaty settled a long-standing dispute between Great Britain and the United States over —  
 1 the Maine boundary    2 the Oregon boundary    3 damages growing out of the War of 1812    4 fishing rights in Lake Ontario    5 the Florida boundary.....(    )
14. The Homestead Act of 1862 was —  
 1 the first general factory act passed by Congress after the Civil War  
 2 legislation which hastened the colonization of the Great West    3 legislation affecting the status of Cuba    4 a high protective tariff act  
 5 a scheme for housing urban laborers.....(    )
15. The ratification of the Federal Constitution was opposed by —  
 1 holders of bonds of the central government    2 speculators in Western lands    3 merchants    4 debtor farmers    5 manufacturers.....(    )
16. In the Dartmouth College Case the United States Supreme Court held —  
 1 that the courts had no right to nullify an Act of Congress    2 that a state could not impair a contract    3 that the Constitution of the United States was the supreme law of the land    4 that the college authorities had no power to refuse admission to the sons of farmers and mechanics  
 5 that the Federal government could not tax a state college.....(    )
17. The Whisky Rebellion was —  
 1 a revolt of the Iroquois because their supply of liquor was cut off  
 2 a riot of Pennsylvania miners caused by a rise in the price of whisky  
 3 a revolt caused by the enactment of state-wide prohibition in Pennsylvania    4 a revolt of western Pennsylvania farmers who objected to the Federal excise tax    5 a revolt of the whisky manufacturers against high license taxes.....(    )
18. The Federal Constitution was ratified by —  
 1 state legislatures    2 popular referendum    3 state conventions  
 4 Continental Congress    5 presidential proclamation.....(    )
19. The Missouri Compromise provided —  
 1 that the principle of squatter sovereignty should apply to Missouri  
 2 that all that part of the Louisiana Purchase north of the parallel 36° 30' except Missouri should be free soil    3 that all territory north of 36° 30' should decide for itself whether or not it wanted slavery    4 that Missouri should come in as a slave state and California as a free state    5 that Congress should not interfere with the slave trade for twenty years.....(    )

20. The Owenite Communities were —  
 1 camps for escaped convicts      2 training schools for wayward boys  
 3 Kentucky mountain villages which manufactured Owen's whisky  
 4 communities idealizing social equality      5 convalescing centers for disabled Civil War veterans. . . . . ( )
21. The Ostend Manifesto aimed to —  
 1 stop the encroachments of Russia      2 aid Southern expansionists  
 3 protect our rights in Morocco      4 stimulate American trade with China  
 5 stir up a revolt in Panama against Colombia. . . . . ( )
22. Which one of the following tended to encourage England to recognize the complete independence of the Southern Confederacy?  
 1 the activities of Charles Francis Adams      2 the battle of Vicksburg  
 3 the attitude of English labor      4 the enactment of a protective tariff by the North      5 disagreement among English statesmen. . . . . ( )
23. The chief opposition to the War of 1812 came from —  
 1 New England      2 Virginia      3 New York      4 the West      5 the South ( )
24. The principal champion of high tariff in 1890 was —  
 1 James G. Blaine      2 William McKinley      3 George Pendleton  
 4 James B. Weaver      5 Charles Sumner. . . . . ( )
25. The Alabama claims were —  
 1 debts of the state of Alabama after the Civil War      2 claims of Alabama against Jefferson Davis for seizure of state property in war time      3 claims of the United States against Great Britain      4 claims of citizens of Alabama against the United States      5 claims of British bankers who held bonds issued by Alabama. . . . . ( )
26. The leading cause of the panic of 1873 was —  
 1 the evils of radical reconstruction      2 the Bland-Allison Act      3 overbuilding of railroads      4 the corruption of the Grant administration  
 5 anthracite coal strikes. . . . . ( )
27. The Populists advocated —  
 1 an income tax      2 private ownership and operation of railroads  
 3 a gold standard      4 the abolition of all political parties      5 the repeal of the Interstate Commerce Act of 1887. . . . . ( )
28. About what fraction of the total population of the United States is in the ten largest cities of the United States?  
 1 one per cent      2 five per cent      3 fifteen per cent      4 twenty-five per cent      5 forty per cent. . . . . ( )
29. Americanization is the process of —  
 1 keeping foreigners out of America      2 extending American trade by means of subsidies      3 teaching American ideals to foreigners  
 4 becoming naturalized      5 protecting American industries. . . . . ( )
30. The Pendleton Act of 1883 was designed —  
 1 to prevent the nomination of Grover Cleveland for the presidency  
 2 to improve the Civil Service      3 to lower the tariff      4 to increase pension rates for Civil War veterans      5 to restrict labor organizations. . ( )
31. The principal customer of the United States outside of Europe is —  
 1 South America      2 Mexico      3 Canada      4 Japan      5 India . . . . . ( )

32. The Philippines were —  
 1 annexed to the United States at the suggestion of President Cleveland  
 2 annexed to the United States by joint resolution of Congress  
 3 ceded to the United States in lieu of war indemnity      4 annexed to  
 the United States as a result of the Spanish-American War      5 acquired  
 from Spain in exchange for Lower California .....(    )
33. The section of the country which most strongly opposed our entry into the  
 World War was —  
 1 New England    2 Middle Atlantic States    3 South    4 Middle West  
 5 Far West .....(    )
34. About what fraction of the total population of the United States is of negro  
 blood?  
 1 one per cent    2 five per cent    3 ten per cent    4 twenty per cent  
 5 thirty per cent .....(    )
35. The Scalawags were —  
 1 selfish Southern politicians    2 Northerners with Southern sympathies  
 3 negroes    4 poor whites serving jail sentences    5 Northern trust  
 promoters .....(    )
36. About what proportion of the total expenditures of the Federal Government  
 is devoted directly and indirectly to past wars and possible future wars?  
 1 ten per cent    2 thirty per cent    3 fifty per cent    4 seventy per  
 cent    5 ninety per cent .....(    )
37. The nomination of Taft in 1908 was effected primarily because of —  
 1 his wide popularity    2 his record as a successful vote getter    3 his  
 affiliation with Theodore Roosevelt    4 his reform principles    5 his  
 opposition to big business .....(    )
38. The Washington Conference of 1921 was called —  
 1 to discuss the entry of the United States into the League of Nations  
 2 to consider making separate peace with Germany    3 to promote business  
 interests of the United States in South America    4 to discuss a unified Air  
 Service for the Army and Navy    5 to consider limitation of naval arma-  
 ments .....(    )
39. The Bland-Allison Act —  
 1 made all other forms of money redeemable in gold    2 standardized the  
 gold dollar in terms of silver and copper    3 made John Sherman Secre-  
 tary of the Treasury    4 directed the Treasury department to purchase  
 a certain amount of silver bullion each month    5 increased the powers  
 of the Interstate Commerce Commission .....(    )
40. The Progressive Party of 1912 —  
 1 favored free trade    2 favored a high protective tariff    3 favored the  
 creation of a non-partisan tariff commission    4 made no mention of  
 tariff    5 favored a "single tax" .....(    )

[ 11 ]

*Go right on to the next page.*

41. The activities of four of the following tended to widen the breach between England and the American colonies. Which one did *not*?  
 1 Grenville 2 Andros 3 Lord Chatham 4 Townsend 5 George III. ( )
42. Four of the following contributed to the English colonization of America. Which one did *not*?  
 1 rivalry between England and Spain 2 proclamation of 1763  
 3 opposition in England to the Stuart kings 4 desire for freedom of worship 5 economic conditions in England.....( )
43. Four of the following encouraged the United States to acquire California. Which one did *not*?  
 1 Japan's threat to acquire California 2 strong expansionist feeling in the United States 3 desire of American settlers in California for annexation 4 desire of American merchants to get rid of Mexican trade restrictions 5 fear of seizure by European powers.....( )
44. Four of the following contributed to the industrial diversification of the North before the Civil War. Which one did *not*?  
 1 mechanical inventions 2 War of 1812 3 discovery of gold in California 4 Fugitive Slave Law 5 protective tariffs.....( )
45. Four of the following were parts of the so-called "American System" supported by Hamilton and Clay. Which one was *not*?  
 1 internal improvements at the cost of the government 2 issue of unsecured paper money 3 the National Bank 4 protective tariff 5 government subsidies.....( )
46. Four of the following represent recent attempts to improve our governmental machinery. Which one does *not*?  
 1 short ballot 2 executive budget 3 city manager form of government 4 diffusion of responsibility 5 Australian ballot.....( )
47. Four of the following contributed to the foundation and development of our free public school system. Which one did *not*?  
 1 desire to diminish crime and pauperism 2 extension of the franchise 3 availability of money from sale of state lands 4 religious dogmas and denominational rivalry 5 feeling that in a democracy education must be widespread.....( )
48. Four of the following contributed to the breakdown of the American intellectual isolation. Which one did *not*?  
 1 introduction of telegraph 2 railway construction 3 the Embargo Act 4 cheap postage 5 correspondence schools.....( )
49. Four of the following contributed to the panic of 1893. Which one did *not*?  
 1 speculation by industrial concerns 2 "Specie Circular" 3 lack of faith of business interests in a Democratic administration 4 business depression in Europe 5 overproduction and unemployment.....( )
50. Four of the following tend to destroy unnecessarily our natural resources. Which one does *not*?  
 1 competitive newspaper advertising 2 "One-crop" system 3 pleasure automobiles 4 reforestation 5 electric billboards.....( )

*If you finish before the time is up, complete Parts I and II or go on to Part IV.*

*Number right.....(Score)*

## PART IV

DIRECTIONS. *In each of the blanks at the right put the word or shortest phrase that will complete the sentence correctly. Write carefully and clearly. Fifteen minutes.*

SAMPLE.

- a. The name of the first permanent English settlement in America was..... (Jamestown)
1. The name of the first Englishman to circumnavigate the globe was..... (\_\_\_\_\_)
2. The name of the English statesman most responsible for the expulsion of France from North America by Great Britain was..... (\_\_\_\_\_)
3. The Swedes established a colony in the 17th century in what is now the state of..... (\_\_\_\_\_)
4. The name of the author of *The Wealth of Nations*, a book which pointed out the fallacies of "mercantilism," was..... (\_\_\_\_\_)
5. The name of the principal advocate of the first United States Bank was..... (\_\_\_\_\_)
6. The Clay Compromise Tariff of 1833 aimed to placate the state of..... (\_\_\_\_\_)
7. The name of the principal leader of the anti-Federalists was..... (\_\_\_\_\_)
8. The name of the author of *Rip Van Winkle* and *The Legend of Sleepy Hollow* was..... (\_\_\_\_\_)
9. Henry Clay and the other "War Hawks" welcomed the War of 1812 as a means of acquiring from England the territory of..... (\_\_\_\_\_)
10. The Compromise of 1850 abolished the slave trade in .. (\_\_\_\_\_)
11. The name of the man to whom Andrew Jackson attributed his defeat in the presidential campaign of 1824 was..... (\_\_\_\_\_)
12. The name of the man who invented the compressed air brake for railroad trains was..... (\_\_\_\_\_)
13. The Thirteenth Amendment to the Federal Constitution made the former slaves..... (\_\_\_\_\_)
14. Our opportunity to insist on the policy of the "open door" in China came largely as a result of our participation in..... (\_\_\_\_\_)
15. The names of the two outstanding leaders of the Progressive Party were Theodore Roosevelt and..... (\_\_\_\_\_)
16. The name of the first important Federal law designed to regulate railroads was..... (\_\_\_\_\_)

*Go right on to the next page.*



17. The name of the presidential candidate who received the support of the South and the West in the election of 1896 was.....(\_\_\_\_\_)
18. The first American Governor-General of the Philippine Islands later became President of the United States. His name was.....(\_\_\_\_\_)
19. The principal issue in the presidential campaign of 1888 was the question of.....(\_\_\_\_\_)
20. The name of the outstanding advocate in the United States of the "single tax" was.....(\_\_\_\_\_)

*If you finish before the time is up, look over all four parts and correct any mistakes you have made.*

*Number right.....(Score)*

# COLUMBIA RESEARCH BUREAU AMERICAN HISTORY TEST

By HARRY J. CARMAN

Associate Professor of History, Columbia University

THOMAS N. BARROWS

History and Civics

The Lincoln School of Teachers College, Columbia University

and BEN D. WOOD

Associate Professor and Director Bureau of Collegiate Educational Research  
Columbia College, Columbia University

## TEST: FORM B

### For High Schools and Colleges

*Do not open this booklet, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, etc. Write plainly.*

Name .....  
(First name, initial, and last name)

Age last birthday ..... years.

Class ..... Date ..... 19.....

School or college.....

City ..... Teacher.....

How many school years have you studied American history in high school? (Indicate by drawing a circle around the right number.)  $\frac{1}{2}$ , 1,  $1\frac{1}{2}$ , 2.

**GENERAL DIRECTIONS.** This examination consists of four parts and requires ninety minutes of working time. The directions for each part are printed at the beginning of the part. Read them carefully and proceed at once to answer the questions. There is a time limit for each part. You are not expected to answer all the questions in any part before the time is up, but if you should, go back and make sure that your answers are right. You may then work further on any previous part or go ahead to the next part. If you have not finished a part when the time is up, stop work on that part and proceed at once to the next. No questions may be asked after the examination has begun.

You need two sharpened lead pencils. *Do not open the booklet yet.*

PART	SCORE
I	
II	
III	
IV	
Total	
Rating	
Classification	

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## PART I

**DIRECTIONS.** Read each of the following statements very carefully. If a statement is true, place a plus (+) in the parentheses following it; if it is false, place a (0) in the parentheses following it. If you are not sure whether a statement is true or false, leave the parentheses blank. Do not guess. *Twenty minutes.*

## SAMPLES.

- a. George Washington was the first President of the United States. . . . . ( + )  
 b. The panic of 1857 had no effect upon the economic life of the South . . . . . ( 0 )

- 
1. After the passage of the Toleration Act of 1649, Maryland enjoyed greater freedom of conscience in religious matters than did Rhode Island. . . . . ( )
  2. Horse racing, corn-husking bees, and card playing were forbidden by law in colonial America. . . . . ( )
  3. The Proclamation of 1763 forbade colonists to settle in the territory acquired by Great Britain from France as a result of the French and Indian War. . . . ( )
  4. The economic development of Pennsylvania was retarded by William Penn's refusal to admit German immigrants. . . . . ( )
  5. The principal motive of the majority of those who left Europe for America during the colonial period was to better their social and economic condition ( )
  6. During colonial times the West Indies were not a market for the commodities produced in New England. . . . . ( )
  7. During colonial times the trading companies and proprietors welcomed the practice of kidnaping persons from the streets of English cities as a means of populating the colonies. . . . . ( )
  8. Furnishings for the wealthier colonial homes were for the most part imported from the Old World. . . . . ( )
  9. After the "Boston Massacre" Samuel Adams did his best to prevent a break between Great Britain and her American colonies. . . . . ( )
  10. The French government signed treaties of alliance and commerce with the United States in 1778 as a means of striking a blow at Great Britain. . . . . ( )
  11. Religious toleration existed in the colony of Massachusetts before 1680. . . . . ( )
  12. The principal occupation in the majority of the colonies was agriculture. . . . ( )
  13. By 1730 the value of the exports of South Carolina was second only to that of exports from Massachusetts. . . . . ( )
  14. The majority of the Dutch inhabitants of New York did not oppose its acquisition by the English in 1664. . . . . ( )
  15. The First Continental Congress prepared a Declaration of Independence in which the American colonies were declared to be free and independent states. . . . . ( )
  16. All the colonies except Rhode Island and Georgia had compulsory education laws. . . . . ( )
  17. By the Jay Treaty of 1794 England solemnly promised not to seize American ships or to impress American seamen in time of peace. . . . . ( )
  18. The Homestead Act of 1862 hastened the settlement of the West. . . . . ( )

19. The labor organizations which were formed in the United States previous to 1835 advocated state-supported systems of education.....(    )
20. Most of the colleges established in the Ohio Valley before 1860 were non-denominational institutions .....(    )
21. Ohio, Indiana, and Illinois were settled by both Northerners and Southerners.(    )
22. John Brown's raid menaced Richmond in the early days of the Civil War..(    )
23. Gas was used in the United States for illuminating city streets previous to the Civil War .....(    )
24. Canal building in the United States before 1860 was confined to the region east of the Alleghenies.....(    )
25. Social distinctions were even more pronounced on the frontier than in the older settled regions.....(    )
26. The rural church was one of the leading social centers in America before 1860.(    )
27. The Missouri Compromise effected the admission of Missouri as a slave state but prohibited slavery in the Louisiana Territory north of 36° 30'.....(    )
28. Influenced by Gallatin's report on manufactures, President Jefferson, in 1811, advocated an embargo to encourage our infant industries.....(    )
29. The acquisition of Louisiana more than tripled the territory of the United States.....(    )
30. Today an individual may travel by train from New York to San Francisco in less time than it took Washington to travel from Mount Vernon to New York for his first inauguration.....(    )
31. The Know-Nothing Party was organized as a protest against foreign influence in our politics.....(    )
32. In his "Freeport Doctrine" Douglas maintained that the people of a territory had the lawful means to introduce or to exclude slavery.....(    )
33. The "Gag Resolutions" were attempts on the part of the enemies of abolition to prevent further discussion of the question of slavery in Congress.....(    )
34. The Wilmot Proviso declared that Mexico had no right to exclude slaves from territories ceded to the United States.....(    )
35. The shipping interests of New England opposed the tariff of 1824.....(    )
36. Andrew Jackson was an outstanding advocate of the "spoils system" .....(    )
37. The building of the railways from the Atlantic coast westward greatly aided New England agriculture.....(    )
38. Under the Articles of Confederation, Congress had no power to collect taxes directly from individuals.....(    )
39. Before the Civil War few immigrants came to the United States from southern and eastern Europe.....(    )
40. Slaveholding plantation owners of the South were among those to migrate westward before 1830.....(    )
41. The Republican Party was hostile to railroad expansion and refused to aid the railroad companies by means of land subsidies.....(    )
42. President Wilson promised the Filipinos that the United States would grant them complete independence before 1930.....(    )
43. Roosevelt believed in a liberal interpretation and extension of the Monroe Doctrine .....(    )

*Go right on to the next page.*

44. In 1870 more than half of our exports were agricultural products ; at present more than half of our exports are manufactured goods ready for consumption ( )
45. Lincoln's plan of reconstruction, if adopted, would have given the right of suffrage to the former slaves. .... ( )
46. Since the World War the United States has changed from a debtor to a creditor nation. .... ( )
47. During the period of the World War the Federal government bought the railroads in the United States from their owners. .... ( )
48. Of the total number of illiterate white people in the United States more than half are native-born. .... ( )
49. Wilson won an overwhelming victory in the electoral college in 1916 over a Republican Party demoralized by the Progressive secession. .... ( )
50. Reciprocity treaties were negotiated during President Wilson's administrations between the United States and most of the Latin-American states. .... ( )
51. Since 1900 the majority of immigrants to the United States have come from northern Europe. .... ( )
52. The great East-West railway lines hindered Eastern manufacturers. .... ( )
53. Since 1920 minerals have ceased to be an important source of wealth in Colorado, Montana, and Nevada. .... ( )
54. Participation by the United States in the Boxer Rebellion forced Mexico to restrict the immigration of Japanese laborers into Lower California. .... ( )
55. The total population represented by the ten United States Senators from Nevada, Idaho, Wyoming, Montana, and New Mexico is less than that represented by the two United States Senators from New York. .... ( )
56. The total membership in the American Federation of Labor decreased during the five years following the World War. .... ( )
57. Conscription as a means of raising troops had been used by the United States prior to the World War. .... ( )
58. For ten years following the Civil War our expanding industries suffered from a shortage of labor. .... ( )
59. Owing to the high cost of living the birth rate among the poorer classes in the United States has decreased more than among the well-to-do classes. ( )
60. The proportion of people who own the homes in which they live is smaller today than in 1890. .... ( )
61. Roosevelt, when he came to the presidency in 1901, stated that he was anti-imperialistic and that he opposed the retention of Porto Rico and the Philippines by the United States. .... ( )
62. The growth of immigration from southeastern Europe led to the passage of the Immigration Act of 1885. .... ( )
63. Revivalist meetings, so characteristic of the 19th century, ceased to be held after 1900. .... ( )
64. The United States acquired Alaska to meet the demand of overwhelming public opinion for the acquisition of gold fields. .... ( )
65. The creation and endowment of museums and art centers has become increasingly characteristic of the history of America during the last twenty years. ( )

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- 66. The silver interests of Colorado and Nevada opposed the passage of the Bland-Allison Act of 1878. ....( )
- 67. President Roosevelt vigorously denounced organized labor as "un-American" and detrimental to industrial progress ....( )
- 68. The United States Federal government has established a system of postal savings banks. ....( )
- 69. Corporation management tends to aggravate the labor problem because it destroys the personal relations between employers and employees ....( )
- 70. The United States refused to send delegates to the second Hague Peace Conference because it had been called by the Czar of Russia. ....( )
- 71. Although the automobile and the improved highway have greatly aided city dwellers, they have not affected rural life in America. ....( )
- 72. After the Civil War business men demanded high protective tariffs. ....( )
- 73. Railroad building in the territory between the Mississippi River and the Pacific coast seldom preceded settlement. ....( )
- 74. The carpetbaggers were recruited from the former slaves. ....( )
- 75. Grover Cleveland advocated the building up of a large Treasury surplus ....( )
- 76. The policy of granting old-age pensions to all its employees has recently been adopted by the Federal government. ....( )
- 77. The Income Tax Decision of 1895 met with the approval of Western farmers( )
- 78. The Civil War retarded the industrial development of the North. ....( )
- 79. In recent years there has been a decided drift of the older American families to urban or village communities, their places to some extent being taken by recently arrived immigrants. ....( )
- 80. The Populist Party combined discontented Western and Southern farmers and Eastern laborers. ....( )

If you finish before the time is up, go on to Part II.

Number right .....	Number right .....
Number wrong .....	Number wrong .....
Number omitted .....	Right minus wrong .....(Score)
Sum should equal 80.	

**PART II**

**DIRECTIONS.** Below are eight groups of items, each of which is divided into two columns. Each item in the left-hand column is numbered. Each item in the right-hand column is followed by parentheses. Place in the parentheses the number of that item in the left-hand column that is associated with the item in the right-hand column. Each group is a separate problem; do not match items in different groups. *Twenty minutes.*

**SAMPLES.**

- |    |         |                                       |
|----|---------|---------------------------------------|
| a. | 1. 1492 | Declaration of Independence.....( 3 ) |
|    | 2. 1620 | Discovery of America.....( 1 )        |
|    | 3. 1776 |                                       |
- 

- |      |                  |   |
|------|------------------|---|
| I.   | 1. Pennsylvania  | Patroon system.....( )                    |
|      |                  | Complete religious toleration.....( )     |
|      | 2. Massachusetts | Nathaniel Bacon.....( )                   |
|      |                  | Cod fishing.....( )                       |
|      | 3. New York      | Duke of York.....( )                      |
|      |                  | Governor Berkeley.....( )                 |
|      | 4. Virginia      | Largest colonial city.....( )             |
|      |                  | James Oglethorpe.....( )                  |
|      | 5. Georgia       | James Otis.....( )                        |
|      |                  | College of William and Mary.....( )       |
| II.  | 1. 1620          | British Navigation Act.....( )            |
|      | 2. 1643          | New England Confederation formed.....( )  |
|      | 3. 1660          | Invention of cotton gin.....( )           |
|      | 4. 1763          | Lewis and Clark Expedition.....( )        |
|      | 5. 1793          | End of French and Indian War.....( )      |
|      | 6. 1804          |   |
|      | 7. 1825          |   |
| III. | 1. 1803          | Fugitive Slave Law.....( )                |
|      | 2. 1814          | Homestead Act.....( )                     |
|      | 3. 1825          | Nullification by South Carolina.....( )   |
|      | 4. 1832          | Hartford Convention.....( )               |
|      | 5. 1850          | Completion of Erie Canal.....( )          |
|      | 6. 1862          |   |
|      | 7. 1873          |   |
| IV.  | 1. 1867          | Federal Reserve Act.....( )               |
|      | 2. 1887          | Panama Revolution.....( )                 |
|      | 3. 1890          | Sherman Silver Purchase Act.....( )       |
|      | 4. 1898          | Acquisition of Philippine Islands.....( ) |
|      | 5. 1903          | Interstate Commerce Act.....( )           |
|      | 6. 1913          |   |
|      | 7. 1920          |   |

- V. 1. Spanish-American War  
 2. Organized labor  
 3. Sewing machine  
 4. Mormons  
 5. Civil Service Reform  
 6. Railroads  
 7. Southern Confederacy

Brigham Young ..... ( )  
 Elias Howe ..... ( )  
 James J. Hill ..... ( )  
 Alexander H. Stephens ..... ( )  
 Samuel Gompers ..... ( )

- VI. 1. Tammany politics  
 2. Philanthropy  
 3. Civil War Finance  
 4. Independence of Texas  
 5. Dred Scott decision  
 6. Trans-Atlantic cable  
 7. Botanical experimentation

Sam Houston ..... ( )  
 Roger B. Taney ..... ( )  
 William M. Tweed ..... ( )  
 Luther Burbank ..... ( )  
 John D. Rockefeller ..... ( )

VII. (*This outline map shows the limits of the geographical sections listed below.*)



**Greatest production of**

- |                           |                               |
|---------------------------|-------------------------------|
|                           | Cotton ..... ( )              |
|                           | Anthracite coal ..... ( )     |
|                           | Gold ..... ( )                |
| 1. New England States     | Farm machinery ..... ( )      |
| 2. Middle Atlantic States | Tobacco ..... ( )             |
| 3. South Atlantic States  | Dairy products ..... ( )      |
| 4. North Central States   | Silk goods ..... ( )          |
| 5. South Central States   | Meat packing ..... ( )        |
| 6. Rocky Mountain States  | Boots and shoes ..... ( )     |
| 7. Pacific Coast States   | Hydroelectric power ..... ( ) |

- VIII. 1. Patrick Cudahy  
 2. Harry Payne Whitney  
 3. Andrew Carnegie  
 4. Harry F. Sinclair  
 5. John Jacob Astor  
 6. F. W. Woolworth  
 7. E. H. Harriman

Oil ..... ( )  
 Steel ..... ( )  
 Railroads ..... ( )  
 Meat packing ..... ( )  
 Merchandising ..... ( )

*If you finish before the time is up, complete Part I or go on to Part III.*

Number right ..... (Score)



## PART III

**DIRECTIONS.** Below are several statements and questions, each of which is followed by five phrases. Mark in the parentheses the number of that phrase that correctly completes the statement or answers the question. (One, and only one, phrase is correct in each case). *Thirty-five minutes.*

## SAMPLE.

- a. One of the principal products of colonial New York was —  
1 rice 2 indigo 3 flour 4 gold 5 aluminum ..... ( 3 )
- 
1. By the Molasses Act of 1733 England sought —  
1 to drive the colonial rum manufacturers out of business 2 to safeguard the interests of the British West Indian planters 3 to ruin Dutch shipping 4 to bring on a war with Spain 5 to encourage the slave trade..... ( )
2. The Shenandoah Valley was principally settled by —  
1 the Dutch 2 Irish Catholics 3 Germans and Scotch-Irish 4 Scandinavians 5 Huguenots..... ( )
3. The Writs of Assistance —  
1 provided free legal service to poor debtors 2 authorized officials to search for smuggled goods 3 directed colonial governors to assist the poor and unemployed 4 restricted the colonial governors in their aid to the Indians 5 afforded relief to persecuted Quakers..... ( )
4. Shays's Rebellion resulted from —  
1 failure of Virginia officials to provide proper defense against the Indians 2 English meddling in American affairs 3 the French occupation of New Orleans 4 a contest between the debtor and the creditor class in Massachusetts 5 attempt of Federal government to collect tax on whisky stills..... ( )
5. A leading export of colonial New England was —  
1 cotton cloth 2 tobacco 3 wheat 4 hemp 5 fish..... ( )
6. The economic differences between the Northern and the Southern colonies were chiefly due to —  
1 character of settlers 2 attitude of the mother country 3 climate and topography 4 attitude of Indians 5 number of slaves in the South..... ( )
7. The Albany Plan of Union was a scheme for —  
1 making Albany the colonial capital 2 the union of the colonies for the purpose of waging war against Dutch privateers 3 a closer union of the colonies for defense against the French 4 uniting all the Iroquois tribes 5 opposing our participation in the War of 1812..... ( )
8. The section of the country which most strenuously opposed the War of 1812 was —  
1 New England 2 Middle States 3 South 4 Northwest 5 Southwest..... ( )
9. The man chiefly responsible for setting up the first successful cotton mill in America was —  
1 Horace Mann 2 Peter Cooper 3 Robert Owen 4 Albert Gallatin 5 Samuel Slater..... ( )

10. Which one of the following was generally taught in American educational institutions before 1860?  
 1 agriculture      2 social sciences      3 mechanical arts      4 medicine  
 5 philosophy.....( )
11. Government by an aristocracy of talent and wealth was advocated by —  
 1 Thomas Jefferson      2 John Adams      3 Andrew Jackson      4 James Madison  
 5 Samuel Adams.....( )
12. The chief military advantage which the South had over the North at the beginning of the Civil War was —  
 1 manufactures      2 transportation facilities      3 leaders      4 financial organizations  
 5 number of inhabitants.....( )
13. The Hartford Convention of 1814 was called —  
 1 to raise funds to carry on the War of 1812      2 to consider the possible secession of New England from the Union  
 3 to discuss measures necessary for the defense of Boston      4 to consider the immediate acquisition of Cuba  
 5 to organize the first insurance company in America..( )
14. The Maine boundary dispute between Great Britain and the United States was settled by the —  
 1 Clayton-Bulwer Treaty      2 Webster-Ashburton Treaty      3 Jay Treaty  
 4 Pinckney Treaty      5 Hay-Pauncefote Treaty.....( )
15. Which one of the following men opposed the acquisition of Texas?  
 1 Stephen A. Douglas      2 Thomas Hart Benton      3 John C. Calhoun  
 4 John Quincy Adams      5 Henry Clay.....( )
16. The United States acquired Florida from Spain —  
 1 by Presidential proclamation      2 in exchange for Cuba      3 by treaty      4 in exchange for Louisiana  
 5 as a gift for suppressing the Barbary pirates.( )
17. The Compromise of 1850 provided that —  
 1 slavery should be prohibited in the District of Columbia      2 California should be admitted as a free state  
 3 Texas should retain Arizona but give up its claim on New Mexico      4 Mexico should be compensated for her loss of territory  
 5 the Mormons should give up polygamy.....( )
18. The outstanding figure in the early consolidation of railroads was —  
 1 Cornelius Vanderbilt      2 Jay Cooke      3 Nicholas Biddle      4 J. Pierpont Morgan  
 5 Andrew Carnegie.....( )
19. The panic of 1837 was caused by —  
 1 Martin Van Buren      2 overspeculation      3 Daniel Webster      4 hard times  
 5 Aaron Burr.....( )
20. The strength of the Anti-Federalists lay mainly with —  
 1 the shippers      2 the manufacturers      3 the seacoast merchants      4 the debt-burdened farmers and planters  
 5 the slaves.....( )
21. The chief opposition to the Kansas-Nebraska Act came from —  
 1 the advocates of popular sovereignty      2 the free soilers      3 the cotton planters of the South  
 4 Stephen A. Douglas      5 the Mugwumps.( )
22. Andrew Jackson maintained that the Federal Constitution did not authorize Congress to provide funds for —  
 1 support of a Navy      2 internal improvements      3 regulation of interstate commerce  
 4 maintenance of the White House      5 salaries of Cabinet members.....( )

23. The "Muck-rakers" were —
  - 1 a group of radical writers who exposed the evils of the Grant régime
  - 2 a group of politicians opposed to Civil Service reform
  - 3 opponents of the conservation movement
  - 4 a group of writers who exposed crookedness in big business
  - 5 the builders of the jetties along the Mississippi River
24. Civil Service reform was opposed by —
  - 1 the Liberal Republicans
  - 2 farmers
  - 3 political bosses
  - 4 organized labor
  - 5 Populists
25. The continent to which the United States exports the largest amount of goods is —
  - 1 Asia
  - 2 South America
  - 3 Australia
  - 4 Europe
  - 5 Africa
26. The Non-Partisan League was an organization —
  - 1 favoring more lenient terms for Germany
  - 2 of Middle West farmers
  - 3 favoring the nomination of more women for office
  - 4 to promote world peace
  - 5 to combine the Protestant churches in America
27. United States citizenship was granted in 1917 to the —
  - 1 Filipinos
  - 2 Alaskans
  - 3 Hawaiians
  - 4 Porto Ricans
  - 5 Cubans
28. The repeal of the Sherman Silver Purchase Act was opposed by —
  - 1 Eastern bankers
  - 2 President Cleveland
  - 3 Western farmers
  - 4 New England manufacturers
  - 5 California gold miners
29. The restriction of immigration after the Civil War was strongly advocated by —
  - 1 contractors
  - 2 politicians
  - 3 coal-mine operators
  - 4 steamship companies
  - 5 labor
30. The disputed Hayes-Tilden election of 1876 was settled by —
  - 1 the House of Representatives
  - 2 the United States Supreme Court
  - 3 an Electoral Commission
  - 4 a joint resolution of Congress
  - 5 the United States Court of Claims
31. James Bryce was —
  - 1 an American novelist
  - 2 a German inventor of aniline dyes
  - 3 a Canadian statesman
  - 4 an American newspaper editor
  - 5 a British critic of American government
32. About what fraction of the 1920 population of the United States was foreign born?
  - 1 five per cent
  - 2 fifteen per cent
  - 3 twenty-five per cent
  - 4 thirty-five per cent
  - 5 forty-five per cent
33. Coxey's Army —
  - 1 won the battle of Cold Harbor
  - 2 marched on Washington in the interests of labor
  - 3 retreated before Roosevelt's Rough Riders
  - 4 was heavily pensioned by Congress
  - 5 suppressed the Philippine Insurrection
34. The acquisition of Hawaii was —
  - 1 opposed by President Harrison
  - 2 accomplished by joint resolution of Congress
  - 3 opposed by American business interests
  - 4 one of the causes which involved us in a war with Spain
  - 5 acquired from Germany in exchange for Samoa
35. At present about what fraction of the total population of the United States lives in cities and towns of over 8000?
  - 1 twenty per cent
  - 2 thirty per cent
  - 3 forty per cent
  - 4 fifty per cent
  - 5 sixty per cent

36. By the Treaty of Paris (1898) the United States obtained —  
 1 the Danish West Indies      2 the Samoan Islands      3 the Hawaiian Islands      4 the Island of Guam      5 the Gadsden Purchase.....(    )
37. The "Black Codes" were —  
 1 secret telegraphic codes used by the Southern Confederacy      2 Federal laws restricting the cotton acreage in the black belts of the South      3 Federal laws designed to safeguard the welfare of the freed negroes      4 laws enacted by Northern states forbidding United States officials to molest runaway slaves      5 laws passed by Southern states restricting the liberties of the former slaves.....(    )
38. The "Crime of 1873" was —  
 1 the looting of the United States Treasury by Jesse James      2 manipulation of the Erie Railroad by Jay Gould      3 the destruction of Sioux Indians by General Custer      4 a law stopping the coinage of silver dollars      5 the organization of the Credit Mobilier.....(    )
39. The principal advocates of the Granger laws were —  
 1 bankers      2 farmers      3 manufacturers      4 steamship companies      5 railway operators.....(    )
40. George William Curtis was one of the leading advocates of —  
 1 annexation of Cuba      2 war with Japan      3 Civil Service Reform      4 the Panama Canal      5 inelasticity of currency.....(    )
41. Four of the following were included in the treaty of peace which concluded the American Revolution. Which one was *not*?  
 1 United States and England to share Newfoundland fisheries      2 Great Britain recognized independence of the United States      3 Great Britain to retain temporarily fur-trading posts along the Great Lakes      4 Congress to recommend to the states that they restore loyalist property      5 Great Britain to stop impressment of American seamen.....(    )
42. Four of the following contributed to the shifting of the trade routes between Europe and Asia in the 15th century. Which one did *not*?  
 1 travels of Marco Polo      2 destruction of the Spanish Armada      3 high cost of overland transportation      4 activities of Prince Henry of Portugal      5 desire of other European countries to break down Italian monopoly of Eastern trade.....(    )
43. Four of the following contributed to the formulation of the Monroe Doctrine in 1823. Which one did *not*?  
 1 revolt of Spain's South American colonies      2 Great Britain's desire to break down Spanish mercantilism      3 the desire of the United States to obtain canal rights in Panama      4 Russia's encroachments in the Pacific Northwest      5 the desire of the United States to prevent further spread of European political influence in America.....(    )
44. The Emancipation Proclamation freed the slaves in four of the following states. In which one did it *not* free them?  
 1 Texas      2 Kentucky      3 Virginia      4 Alabama      5 Georgia.....(    )

45. Four of the following constituted a basis for the United States claim to Oregon. Which one did *not*?
- 1 Lewis and Clark expedition    2 John Jacob Astor's fur posts    3 acquisition of Spanish claims    4 Captain Gray's expedition to the mouth of the Columbia River    5 sale of Oregon to the United States by the Hudson's Bay Company. . . . . ( )
46. Alexander Hamilton favored four of the following. Which one did he *not* favor?
- 1 a national bank    2 government by the people at large    3 protective tariff    4 payment of government debts in full    5 liberal interpretation of the Federal Constitution. . . . . ( )
47. In declaring war on Great Britain in 1812, the United States charged the British with four of the following. Which one was *not* included in the charges?
- 1 encouraging the Indians to attack Americans    2 forbidding Americans to manufacture iron goods    3 ruining American trade with blockades    4 illegally seizing American sailors    5 refusing to live up to the Treaty of 1783. . . . . ( )
48. Four of the following are provisions of the Fourteenth Amendment. Which one is *not*?
- 1 All persons born or naturalized in the United States are citizens of the United States    2 no state shall make any law abridging the privileges of citizens of the United States    3 the United States shall assume and pay in full the bonded debts of all states participating in revolt and insurrection    4 no state shall deprive any person of life, liberty, or property without due process of law    5 no person shall hold office under the United States who shall have engaged in insurrection or rebellion against the United States. . . . . ( )
49. Four of the following aimed to increase the control of the Federal government over big business. Which one did *not*?
- 1 Clayton Act of 1914    2 Sherman Act of 1890    3 Hepburn Act of 1906    4 Underwood Act of 1913    5 Interstate Commerce Act of 1887. ( )
50. Four of the following are forms of direct legislation. Which one is *not*?
- 1 initiative    2 recall    3 direct primary    4 gerrymandering    5 referendum. . . . . ( )

*If you finish before the time is up, complete Parts I and II or go on to Part IV.*

*Number right. . . . . (Score)*

PART IV

DIRECTIONS. *In each of the blanks at the right put the word or shortest phrase that will complete the sentence correctly. Write carefully and clearly. Fifteen minutes.*

SAMPLE.

- a. The name of the first permanent English settlement in America was .....(Jamestown)
- 
1. The name of the author of the pamphlets entitled *Common Sense* was .....(\_\_\_\_\_)
2. The system by which nations endeavored to sell much and buy little in order to secure a so-called "favorable balance" of trade was known as .....(\_\_\_\_\_)
3. The name of the colony in which the first Constitution in America was drawn up was .....(\_\_\_\_\_)
4. Four cities of colonial America had 10,000 or more inhabitants. These were Philadelphia, New York, Boston, and .....(\_\_\_\_\_)
5. The first revolt against the Federal government as established by the Constitution was known as .....(\_\_\_\_\_)
6. The name of the country against which the Tariff of 1816 was principally directed was .....(\_\_\_\_\_)
7. The authors of *The Federalist* were John Jay, James Madison, and .....(\_\_\_\_\_)
8. The name of the canal (built before 1850) which greatly increased the commercial importance of New York City was .....(\_\_\_\_\_)
9. The Federal Constitution as first adopted provided that three fifths of the slaves should be counted for purposes of allotting representation in Congress and of apportioning Federal .....(\_\_\_\_\_)
10. The name of the product which constituted America's chief export in the twenty years prior to 1860 was. . (\_\_\_\_\_)
11. The name of the author of *The Pioneer*, *Deerslayer*, and *The Last of the Mohicans* was .....(\_\_\_\_\_)
12. The name of the Senator who most strenuously opposed our entry into the League of Nations was .....(\_\_\_\_\_)
13. The pen name of the author of *Tom Sawyer* and *Huckleberry Finn* was .....(\_\_\_\_\_)
14. Conservation made its greatest gains during the administration of President .....(\_\_\_\_\_)
15. The name of the individual most influential in bringing about the nomination of William McKinley for the presidency was .....(\_\_\_\_\_)

16. The Credit Mobilier was the name of the construction company which built the greater part of the.....( )
17. The name of the Southern city which corresponds to Pittsburgh as a great steel center is.....( )
18. The name of the first organization that attempted to unite all workingmen in the United States was.....( )
19. The name of the man who headed the United States delegation to the Peace Conference following the World War was.....( )
20. The name of the man who discovered the process of vulcanizing rubber was.....( )

*If you finish before the time is up, look over all four parts and correct any mistakes you have made.*

*Number right.....(Score)*





# OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

By ARTHUR S. OTIS

Formerly Development Specialist with Advisory Board, General Staff, United States War Department

## HIGHER EXAMINATION: FORM B

20

For High Schools and Colleges

Score.....

*Read this page. Do what it tells you to do.*

*Do not open this paper, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, birthday, etc. Write plainly.*

Name.....Age last birthday.....years  
First name, initial, and last name

Birthday.....Class.....Date.....19....  
Month Day

School or College.....City.....

This is a test to see how well you can think. It contains questions of different kinds. Here is a sample question already answered correctly. Notice how the question is answered :

Which one of the five words below tells what an apple is?

1 flower, 2 tree, 3 vegetable, 4 fruit, 5 animal.....( 4 )

The right answer, of course, is "fruit"; so the word "fruit" is underlined. And the word "fruit" is No. 4; so a figure 4 is placed in the parentheses at the end of the dotted line. This is the way you are to answer the questions.

Try this sample question yourself. Do not write the answer; just draw a line under it and then put its number in the parentheses :

Which one of the five words below means the opposite of north?

1 pole, 2 equator, 3 south, 4 east, 5 west.....( )

The answer, of course, is "south"; so you should have drawn a line under the word "south" and put a figure 3 in the parentheses. Try this one :

A foot is to a man and a paw is to a cat the same as a hoof is to a — what?

1 dog, 2 horse, 3 shoe, 4 blacksmith, 5 saddle.....( )

The answer, of course, is "horse"; so you should have drawn a line under the word "horse" and put a figure 2 in the parentheses. Try this one :

At four cents each, how many cents will 6 pencils cost?.....( )

The answer, of course, is 24, and there is nothing to underline; so just put the 24 in the parentheses. If the answer to any question is a number or a letter, put the number or letter in the parentheses without underlining anything. Make all letters like printed capitals.

The test contains 75 questions. You are not expected to be able to answer all of them, but do the best you can. You will be allowed half an hour after the examiner tells you to begin. Try to get as many right as possible. Be careful not to go so fast that you make mistakes. Do not spend too much time on any one question. No questions about the test will be answered by the examiner after the test begins. Lay your pencil down.

*Do not turn this page until you are told to begin.*

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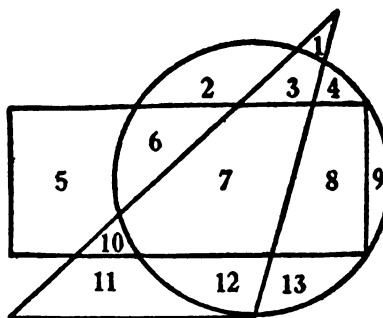
## EXAMINATION BEGINS HERE :

1. The opposite of love is (?)  
1 like, 2 anger, 3 hate, 4 strange, 5 lover..... ( )
2. If 2 pencils cost 5 cents, how many pencils can be bought for 50 cents?..... ( )
3. A man does not always have (?)  
1 bones, 2 heart, 3 teeth, 4 nerves, 5 lungs..... ( )
4. What letter in the word WILMINGTON is the same number in the word (counting from the beginning) as it is in the alphabet?..... ( )
5. If the following words were arranged to make the best sentence, the first word of the sentence would begin with what letter? Print the letter as a capital.  
tests pupils mental thousands have of taken..... ( )
6. A word meaning the same as effect is (?)  
1 cause, 2 result, 3 affect, 4 change, 5 answer..... ( )
7. Gold is more costly than silver because it is (?)  
1 heavier, 2 scarcer, 3 yellower, 4 harder, 5 prettier..... ( )
8. A circle is related to a square in the same way that a sphere is related to (?)  
1 circumference, 2 cube, 3 round, 4 corners, 5 ball..... ( )
9. If 10 boxes full of oranges weigh 500 pounds, and each box when empty weighs 5 pounds, how many pounds do all the oranges weigh?..... ( )
10. The opposite of graceful is (?) 1 rough, 2 homely, 3 miserable, 4 awkward, 5 stout... ( )
11. Which one of the six statements below explains the following proverb? "A bird in the hand is worth two in the bush."..... ( )
  1. It is easier to carry eggs in two baskets than in one.
  2. A man of action has a loud voice.
  3. Tame birds are more expensive than wild ones.
  4. It is better to be content with what you have than to lose it gambling for more.
  5. It is safer not to risk all on one venture.
  6. What a man does is a better indication of his character than what he says.
12. Which statement explains this proverb? "Actions speak louder than words."..... ( )
13. Which statement explains this proverb? "Don't put all your eggs in one basket."..... ( )
14. In general it is safer to judge a man's character by his (?)  
1 voice, 2 clothes, 3 deeds, 4 wealth, 5 face..... ( )
15. Ordinary is related to exceptional as many is to (?)  
1 all, 2 none, 3 few, 4 common, 5 more..... ( )
16. A father is always (?) than his son.  
1 wiser, 2 stronger, 3 richer, 4 older, 5 taller..... ( )
17. The opposite of extravagant is (?)  
1 miser, 2 humble, 3 economical, 4 poor, 5 wasteful..... ( )
18. One number is wrong in the following series. What should that number be?  
1 5 2 6 3 7 4 9 5 9..... ( )
19. What people think about a person constitutes his (?)  
1 personality, 2 character, 3 reputation, 4 biography, 5 career..... ( )
20. A party consisted of a man and his wife, his three sons and their wives, and three children in each of the sons' families. How many were there in the party?..... ( )
21. At a wedding there is always (?)  
1 minister, 2 music, 3 flowers, 4 bride, 5 cake..... ( )
22. To insist that stones have thoughts is (?)  
1 absurd, 2 misleading, 3 improbable, 4 unfair, 5 wicked..... ( )
23. Which word is needed to begin the following sentence? — the four sides of a rectangle are equal, it is a square.  
1 Although, 2 If, 3 Since, 4 Now that, 5 Because..... ( )
24. If the first two statements following are true, the third is (?) All members of this committee are Democrats. Jones is not a Democrat. Jones is a member of this committee.  
1 true, 2 false, 3 not certain..... ( )
25. The opposite of always is (?)  
1 sometimes, 2 often, 3 occasionally, 4 seldom, 5 never..... ( )

26. Which one of these five things is most unlike the other four?  
1 nut, 2 turnip, 3 rose, 4 apple, 5 potato..... ( )
27. Sanitation is related to disease as (?) is to accident.  
1 doctor, 2 hospital, 3 bandage, 4 cleanliness, 5 care..... ( )
28. The two words pertinent and permanent mean (?)  
1 the same, 2 the opposite, 3 neither same nor opposite..... ( )
29. The opposite of loyal is (?)  
1 treacherous, 2 enemy, 3 thief, 4 coward, 5 jealous..... ( )
30. Count each Y in this series that is followed by an E next to it if the E is not followed by an S next to it. Tell how many Y's you count.  
Y E Y S F Z Y E S Z E Y E E S F Z S Y E F Y E S E Y Z E Y E Z..... ( )
31. If a boy can run at the rate of 5 feet in  $\frac{1}{4}$  of a second, how many feet can he run in 10 seconds?..... ( )
32. Which one of the six statements below explains the following proverb? "An ounce of discretion is worth a pound of wit."..... ( )
1. Storms wreck many ships.
  2. Food is seldom as well cooked as it might be.
  3. It is easy to appear wise after an event has happened.
  4. It is easier to keep out of trouble than to lie out of it.
  5. Leadership is easy when all goes well.
  6. Division of responsibility brings poor results.
33. Which statement explains this proverb? "Too many cooks spoil the broth."..... ( )
34. Which statement explains this proverb? "In a calm sea every man is a pilot."..... ( )
35. If the words below were rearranged to make a good sentence, the last word of the sentence would begin with what letter? Print the letter as a capital.  
preparation training life A excellent an college is for..... ( )
36. If the first two statements following are true, the third is (?) George is younger than Frank. James is younger than George. Frank is older than James.  
1 true, 2 false, 3 not certain..... ( )
37. One who pretends to be what he is not is said to be (?)  
1 sensitive, 2 artless, 3 vain, 4 hypocritical, 5 prejudiced..... ( )
38. The opposite of abolish is (?)  
1 alter, 2 create, 3 continue, 4 destroy, 5 change..... ( )
39. If  $2\frac{1}{2}$  yards of cloth cost \$2, how many dollars will 10 yards cost?..... ( )
40. Which of the five things following is most unlike the other four?  
1 ax, 2 knife, 3 razor, 4 hammer, 5 shears..... ( )
41. Sunlight is to darkness as (?) is to stillness.  
1 quiet, 2 sound, 3 dark, 4 loud, 5 moonlight..... ( )
42. The opposite of fickle is (?)  
1 silly, 2 constant, 3 stationary, 4 solid, 5 sober..... ( )
43. If the first two statements following are true, the third is (?) Some of our citizens are Methodists. Some of our citizens are doctors. Some of our citizens are Methodist doctors.  
1 true, 2 false, 3 not certain..... ( )
44. If  $3\frac{1}{2}$  yards of cloth cost 70 cents, how many cents will  $2\frac{1}{2}$  yards cost?..... ( )
45. A point is to a line as a line is to (?)  
1 surface, 2 pencil, 3 dot, 4 curve, 5 solid..... ( )
46. The two words superfluous and requisite mean (?)  
1 the same, 2 the opposite, 3 neither same nor opposite..... ( )
47. One can measure a city block — by pacing.  
1 evenly, 2 carefully, 3 cautiously, 4 approximately, 5 correctly..... ( )
48. Suppose that the first and second letters of the alphabet were interchanged, also the third and fourth, the fifth and sixth, etc. Write the letter which would then be the eighteenth letter of the series..... ( )
49. If a strip of cloth 36 inches long will shrink to 33 inches when washed, how many inches long will a 48-inch strip be after shrinking?..... ( )
50. Which one of the five words following is most unlike the other four?  
1 strong, 2 bad, 3 ripe, 4 round, 5 come..... ( )
51. A home always has (?)  
1 a mother, 2 hearth, 3 congeniality, 4 familiarity, 5 music..... ( )

[ 3 ] Do not stop. Go on with the next page.

52. A word meaning the same as controversy is (?)  
 1 dispute, 2 conversation, 3 discussion, 4 lawsuit, 5 dialogue..... ( )
53. Find the two letters in the word LATER which have just as many letters between them in the word as in the alphabet. Write the one of these two letters that comes first in the alphabet... ( )
54. The law of gravitation is (?)  
 1 obsolete, 2 absolute, 3 approximate, 4 conditional, 5 constitutional..... ( )
55. Which one of the five words below is most like these three: joy, anger, and fear?  
 1 habit, 2 memory, 3 hate, 4 life, 5 hearing..... ( )
56. A peninsula is to a continent as (?) is to the ocean.  
 1 river, 2 cape, 3 gulf, 4 lake, 5 island..... ( )
57. If all the even-numbered letters in the alphabet were crossed out, the tenth letter left, not crossed out, would be what letter? Print it. *Do not mark the alphabet.*  
 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z..... ( )
58. A hotel serves a mixture of 3 parts cream and 2 parts milk. How many pints of cream will it take to make 25 pints of the mixture?..... ( )
59. Write the letter of the alphabet which is the third to the right of the letter which is midway between M and Q..... ( )
60. Which of the following is a trait of character?  
 1 wealth, 2 strength, 3 reputation, 4 loyalty, 5 admiration..... ( )
61. If a prosperous son neglects his poor, aged parents, he is considered (?)  
 1 thrifty, 2 extravagant, 3 unwise, 4 thoughtless, 5 shrewd..... ( )
62. One number is wrong in the following series. What should that number be?  
 1, 2, 4, 8, 16, 36, 64..... ( )
63. Evolution is to revolution as crawl is to (?)  
 1 baby, 2 floor, 3 stand, 4 run, 5 hands and knees..... ( )
64. How many of the following words can be made of the letters in the word FREIGHT, using any letter twice?  
 retire, height, grief, trigger, neither, thrift, relief, eighty..... ( )
65. If Frank can ride a bicycle 300 feet while George runs 200 feet, how many feet can Frank ride while George runs 300 feet?..... ( )
66. If the words below were rearranged to make a good sentence, the *fifth* word in the sentence would begin with what letter? Print the letter as a capital.  
 life friends valuable to The make asset in a is ability..... ( )
67. If the first two statements following are true, the third is (?) It takes perseverance to become a skillful juggler. This boy has perseverance. He will become a skillful juggler.  
 1 true, 2 false, 3 not certain..... ( )
68. If a wire 20 inches long is to be cut so that one piece is  $\frac{2}{3}$  as long as the other piece, how many inches long must the longest piece be?..... ( )
69. Find the letter which in this sentence itself appears a second time nearest the beginning..... ( )
70. Which of the five things following is most like these three: ivory, snow, and milk?  
 1 butter, 2 rain, 3 cold, 4 cotton, 5 water..... ( )
71. One number is wrong in the following series. What should that number be?  
 1 2 4 7 11 16 23..... ( )
72. What number is in the space which is in the rectangle and in the triangle but not in the circle? ( )



73. What number is in the same geometrical figure or figures as the number 6?..... ( )
74. How many spaces are there which are in any two but only two geometrical figures?..... ( )
75. What is the greatest number of spaces that could be made to be in any one but only one geometrical figure by overlapping any triangle, circle, and rectangle in any way?..... ( )



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