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# A COMPARISON OF THE ACHIEVEMENT OF SELECTED STUDENTS IN HIGH SCHOOL SOCIAL STUDIES TAUGHT BY THE TEAM TEACHING METHOD AND THE TRADITIONAL METHOD

A Thesis

Presented to

the Graduate Faculty

Central Washington State College

In Partial Fulfillment

of the Requirements for the Degree

Master of Education

by Curtis Harris Christian May 1969 5771,31
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| Daryl Bas | sler, Co | OMMITTEE | CHAIRMAN   |
| T. Dean S | Stinson  |          |            |
| Dan A. Ur | nruh     |          |            |

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#### CHAPTER I

THE PROBLEM, HYPOTHESIS, AND DEFINITION OF TERMS USED

Despite growing and widespread popularity, the teaching team remains a hypothetical concept yet to be fully demonstrated as a means for improving instruction in the schools. Though the descriptive literature on teaching teams is voluminous, experimental data on achievement are in short supply.

#### I. THE PROBLEM

Statement of the problem. It was the purpose of this study to compare learning outcomes of students taught by traditional methods with that of students instructed by certain selected arrangements of resources commonly associated with the teaching team approach.

Importance of study. Although the entire profession writhes with ferment, education has focused an especially watchful eye upon approaches to improving classroom instruction. Waves of adaptation and experimentation surge across the nation. The traditional classroom and the traditional methodology now suddenly become open to question whereas heretofore they were largely closed to criticism. Yet, despite such activity

a paucity of research exists on classroom instruction as it relates to achievement. No one approach to teaching, no single arrangement to promote learning is substantiated as superior by empirical test. Clearly it is time to initiate a series of vigorous and sophisticated investigations of team teaching and other methodological variables as they relate to learning.

Analysis of problem. The teaching profession has suffered because it lacks precise terminology. Team teaching is an added instance of obtuse definition; the term has almost as many meanings as there are schools employing the system. It means a variety of things to the un-initiated as well as to one who has spent considerable time studying the developments in team teaching. For example, Bush and Allen in their book, A New Design for High School Education, say, "the integration of professional staff, support staff, and resource personnel into a productive unit to carry out a particular course cycle creates a teaching team." (9:47).

Organization differs; some teams involve two teachers, others four or five; some use aides or flexible schedules, others do not; some teams indicate two or more subject areas, others concentrate on a single course and a single grade level as used in this investigation.

The design of teaching teams also differs. In some schools the purpose of assigning one hundred fifty to two hundred students to a teaching team is to improve the guidance program. In the school where this study was made, the goal was to develop competence in one subject area and to facilitate specialization.

The central purpose of teaching teams from their inception has been to create more effective and efficient instruction. Students should learn better the necessary skills and knowledge in subject areas.

Members of the teaching profession and lay people in a community are familiar with the traditional or self-contained classroom method of instruction.

Prior to beginning this study, it was necessary to examine the two methods of teaching used in this investigation. This examination revealed the difficulty of determining the type of research that would best reveal the learning outcomes produced by both teaching methods. On the surface, this seemed to be a rather simple question; however, after observing the many different forms of team teaching and the difference in teacher techniques in the self-contained or traditional type program, it was evident that the answer was not as simple as it appeared.

Limitations of the study. This study did not attempt to measure team teaching in its entirety. Considering the complexities of team teaching, it is unlikely that a single study could encompass adequately the entire spectrum of variables associated with the team approach to instruction. This study did measure learning outcomes as they were affected by an application of certain variables thought to be important to learning and to which team teaching was associated empirically. An attempt was made to determine whether or not learning was enhanced by delegating to a group of teachers certain methodological variables thought to influence the mastery of subject content.

It was also recognized that it was impossible to control the variables, that might affect learning outcomes, in the team teaching groups as closely as in the traditional method of instruction.

#### II. THE HYPOTHESIS

The very nature of this investigation plus a very close examination of the problem, importance of the study, analysis of the problem, and limitations of the experiment, compel this writer to advance the following null hypothesis.

Statement of hypothesis. There will be no difference in achievements of students taught by a team of several teachers possessing a variety of specialities, and who control the necessary teaching aids to facilitate instruction, than when taught by individual teachers each using conventional techniques and working independently with groups of twenty-five to thirty students.

#### III. DEFINITIONS OF TERMS USED

Team teaching. Team teaching in this study was interpreted as involving three teachers in one subject area, United States History and Government, operating vertically without aides or flexible scheduling and the students rotating every twelve weeks to a team member. The team of three teachers possessed a variety of specialities and controlled the necessary aids to facilitate team teaching.

Traditional teaching. Traditional teaching in this experiment was interpreted as involving two teachers with each individual teacher using conventional techniques and working independently with groups of twentyfive to thirty students.

Control groups. Throughout the report of this study the term "control group" shall be interpreted to mean a group of students in a learning situation which is generally considered to be "traditional;" one teacher working alone with a class of twenty-five to thirty students in a self-contained classroom. In this investigation two such groups are used and referred to as groups  $C_1$  and  $C_2$ .

Experimental group. Since this study was conducted in only one high school, the term "experimental group" shall be interpreted as indicating the group of students taught under the team teaching method of instruction. Throughout this investigation, the experimental groups shall be referred to as  $\mathbf{E}_1$  and  $\mathbf{E}_2$  since there were two such groups used in this study.

#### CHAPTER II

#### REVIEW OF LITERATURE

During the 1950's the national literature on education became characterized by a concern for quality in education, the prelude to a more intense anxiety which followed Soviet orbital successes. Paralleling this national concern, there developed within education an enlivened interest in new approaches to curriculum and instruction. Educators became increasingly aware of the many archaic concepts and impractical conditions which surround the classroom and the school. With help from the philanthropic foundations, schoolmen began attempts to improve these conditions.

#### I. HISTORICAL BACKGROUND

One major focus of change was to develop means of lifting from the backs of teachers many burdensome clerical routines. The use of non-professional aides and assistants in Bay City, Michigan and in New England preceded more comprehensive programs for better use of the professional staff. Success in these initial endeavors led to proposals that other non-instructional activities as well could be delegated, that all learning did not necessarily have to be directed by teachers, and

Meanwhile, programmed learning re-emerged from a thirtyyear slumber and teachers became aware of the potential
for independent study inherent in these materials. Some
of the time customarily spent by pupils in classroom
groups could be, it was surmised, replaced by independent study to the advantage of the student. Add to these
developments the growing curricular reforms in the
separate subjects arising from the phenomenal growth of
knowledge, and it is understandable why imaginative
educators sought to develop improved strategies of teaching which theoretically reflected these emerging concepts.
(1:256).

Concurrent with regional and local efforts, the National Association of Secondary School Principals in 1956 established the "Committee on the Experimental Study of the Utilization of the Staff in the Secondary School," to sponsor wide experimentation in school organization and instruction. Investigation supported by this committee included team teaching, large and small group instruction, independent study, schedule modification, the employment of teacher assistants, and the use of new technological devices in teaching. Spurring this interest was national distribution of three booklets authored by Dr. J. Lloyd Trump: Images of the Future, New

<u>Directions to Quality Education</u>, and <u>New Horizons for</u>

<u>Secondary School Teachers</u>, the first of which went into five printings. (2:1).

Close upon the heels of Trump's first publication, numerous articles began to appear in professional magazines. In the two-year period 1955-1957 not a single article on the subject of team teaching was listed in the Education Index. By contrast, between July 1959 and June 1960, thirty-five articles on this subject appeared in various journals. This deluge was loosed by the January 1958 issue of The Bulletin of the National Association of Secondary School Principals, the first comprehensive report fabricated on staff utilization. The profession had evidently become increasingly openminded about ways students could be organized for instructional purposes and the ways schools should make use of the differentiated talents of the professional staff. Consequently, suggestions put forth by the Commission on the Experimental Study of the Utilization of the Staff spread widely. Today, variations of the recommendations, or adaptations thereof, are followed in schools in virtually every state of the Union. (2:15).

#### II. THE NATURE AND ADEQUACY OF RESEARCH

of the 130 plus printed articles that were available on teaching teams and staff utilization, the vast majority were collected in five works, the January 1958, 1959, 1960, 1961, and 1962 issues of <u>The Bulletin</u> (20:1-213). These documents comprise an extensive reporting; each issue contains resumes from those school systems which undertook experimentation under the Commission. While <u>The Bulletin</u> is not primarily a research journal, some experimental data on learning are reported.

In the research journals a disappointingly limited amount of information on teaching teams is available. The American Educational Research Association, publishers of the Review of Educational Research, treats staff utilization tersely in but parts of two issues, one entitled, "Curriculum Planning and Development," and the other "Educational Organization, Administration, and Finance." (15:1-15). The Harvard-Lexington Experiment in Team Teaching has as yet no final published results, and may not report until 1969.

With the exception of reports on sixteen projects, the record consists entirely of subjective, opinion-type evaluation. Such documents are inadequate as a measure of the learning which results from application of the methods. The following quotation is typical:

Probably the most significant conclusion which might be drawn is that the operation during the two years had been successful as evidenced by the fact that students expressed a desire to continue with the type of instruction, teacher aides indicated regret in the necessity to leave the program, teacher—team members and leaders indicated the desire to continue in the program and other teachers on the staff were interested in participating in teams next year (5:159).

The response of the students was probably the most satisfying single aspect of the experiment thus far. Their industry, interest, conduct, and cooperation were beyond expectations and they seemed to appreciate the change of pace and novelty of the methods of instruction. An informal poll showed almost unanimous approval of the project (3:65).

Articles listed in the <u>Education Index</u> on team teaching are primarily: (1) descriptions of the different approaches to team teaching, or (2) conceptual analyses or criticisms of team teaching. Other sections of the <u>Education Index</u>, such as "Student Achievements," deal with cultural or psychological factors, late school entrance, public relations, and test results. None specifically evaluate team teaching in terms of achievement and few discuss the learning environment in the classroom.

The National Education Association's report on staff utilization (3:15) briefly mentions achievement results from the Bay City, Michigan Study, but primarily

discusses the different arrangements for size, composition, planning, and scheduling involved in a team composition. The report concludes that, "There has been no large body of critical analysis of these projects by outsiders."

(3:20). Focus on Change, which purports to summarize the status of the experimental projects as of 1961, devotes but one paragraph to student achievement. No mention of content mastery is given other than such generalized notices as, "Achievement in large classes generally ranked as high as in traditional classes of comparable ability and sometimes higher." (27:75). No specific data are given.

Thus, in the majority of cases, reports elaborate on different methods of teaching and various aspects of team organization rather than results of student achievement. Since experimental research in education tends to be hampered by the difficulties of establishing carefully controlled conditions within an operating school, investigators evidently tend to rely primarily on subjective evaluations.

A Survey of Team Teaching Programs in Seven

Western States by Walter Borg and Luna R. Brite at Utah

State University only reports on the level at which team

teaching is used at the present time. Also, it describes

the team members and concludes that members of teams need the same characteristics as teachers in a traditional environment (6:1-10). The study does not attempt to measure achievement. Harry I. Wigderon, Coordinator of Research, Tulare County Department of Education, Visalia, California writing in <a href="Teaching">Team Teaching</a> in June 1964 concluded that, "team teaching is a form not a substance; an organization, not a program." (29:3).

A limited number of schools (5:159) have attempted to evaluate the influence of these newer methods on student achievement.

Robert H. Anderson, writing on "Individualizing Instruction" in the <u>Sixty-First Yearbook of the National Society for the Study of Education</u>, stresses the need for research in methods of teaching and in grouping within the school environment. He states, "Although . . . there is a long and interesting story behind present-day classroom grouping practices, it is discouraging to review the limited research which has been based on past innovations and procedures." (1:108). Wrightstone argues in a brief but competent review that "the search for better class organization for instruction is complex and elusive." (30:30). Wrightstone lists six questions which

though partially answered by past research, require further study 60:30). Four of these, relevant to teaching teams, are:

- 1. How are groups within the class used to organize the class for more effective instruction?
- What types of class organization are used to adapt secondary-school instruction to student abilities and needs?
- 3. What are the dynamic features of modern class organization for effective learning?
- 4. How do teachers organize classroom instruction for pupils of low ability, high ability, and with special disabilities?

Anderson concludes by stating, "The realization that adequate answers to such basic questions are not yet available should cause research workers and other personnel to intensify their efforts to understand what is being done. This applies no less to conventional class-room situations, which probably have less theoretical and objective justification than is widely assumed, than it does to the emergency patterns of collaborative teaching and flexible grouping." (1:244).

Directing his comments specifically to the experiments in staff utilization, Gregory R. Anrig states that, "There is a need to improve the standards of research being used to test such new ideas. Particularly, there is a need to provide for improved control and

evaluation of experiments (2:254)." Philip R. Pitruzzello of the University of Chicago develops this theme still further by writing that the few research reports to date have a common pattern--"a comparison of students through achievement testing after a year of instruction by team teaching and by conventional teaching." (22:335). Pitruzzello then questions the competency of teachers with the new methods, and of the relevance of standardized tests to measure achievement. He believes that, "Far too many uncontrolled variables obscure the meaning of the results . . . perhaps the problem lies in basic research designs which are too broad to produce reliable answers to rather specific questions . . . less ambitious and more restricted approaches would be fruitful and enlightening. Focusing research on a single variable at a time would provide one approach to improving inquiry. More productive and better defined questions are possible with a single variable approach, as:

- 1. Will flexibility in relating grouping directly to the instructional task increase the effectiveness and efficiency of learning?
- Will allowing the learning activity to determine class size enhance the attainment of specified objectives?
- 3. Will maximum utilization of specializations of team members improve instruction?

4. Will the special techniques applicable (allow-able) by large group and small group instruction increase effectiveness and efficiency of learning?"

In summarizing his opinion, Pitruzzello insists that in the usual year-long studies, the variables become hopelessly subordinated to the administrative demands of operating a school and thus research becomes meaningless. He urges that the time covered be reduced to a single unit of instruction, allowing the experimental situation to be kept clear of interruptions during the shorter period of time (22:335).

The opinions of Wrightstone and Pitruzzello appear to be substantiated by a number of other researchers.

Moorer, at a Florida State University conference on staff utilization, stated that, "We must be 'hard-nosed' and rigorous in the application of carefully designed schemes of appraisal so that we can document carefully our claims of improved quality." (19:278). Philip Lambert of the University of Wisconsin questions the sophistication of present research, especially in regard to the inadequacy of control groups. He suggests that experiments in team teaching must co-exist in schools within an on-going project (21:4). Drummond, writing in Educational

Leadership, insists that "Much more sophisticated research

designs should be used, so that the variables in the situations can be more carefully controlled." (10:162).

Clearly then, a sharp call may be heard for competent investigation of the learning outcomes resulting from application of the staff utilization approach to an operating school situation.

#### III. THE CONTEXT

The teaching profession has for years suffered because it lacks precise terminology. Team teaching is an added instance of obtuse definition; the term has almost as many meanings as there are schools employing the system. As Ploghft describes it, "To the uninitiated, team teaching may mean a variety of things and to one who has spent considerable time studying the developments in team teaching it means a variety of things." (23:220).

Organization differs; some teams involve two teachers, others four or five; some teams use aides or flexible schedules, others do not; some teams include two or more subject areas, others concentrate on a single course and a single grade level; some teams subdivide the school vertically, others cut horizontally across the entire student body (26:278).

In the Claremont Graduate School Plan, the purpose of assigning 150 to 200 students to a group of four to six teachers is to improve the guidance program. In other instances, the goal is to develop enhanced competence in one subject area; to facilitate specialization. In yet another case the objective may be to fuse two subjects, such as English and history, in a new manner by using two specialists together rather than applying the core concept with one teacher and two subjects.

In spite of the complexity, or perhaps because of it, some choices must be made if one is to evaluate teacher teams in a meaningful sense. It was decided that the first point was to determine the purpose of team teaching. Numerous goals have been advanced, most of which miss the central aim, that of enhancing learning. Some stated objectives are:

- 1. To provide better training for new teachers.
- 2. To recognize and reward good teachers; to implement the merit system.
- To improve the quality of in-service training.
- 4. To stimulate and refresh the teacher's imagination.
- 5. To provide "built-in" supervision.
- 6. To provide for the students some alternatives for identification.

- 7. To provide an improved organizational means to administer the school.
- 8. To make more efficient use of facilities.

Though these aims may have merit, they are subordinate to the problems of learning, of elevated curriculums, and of grouping for instruction which are more generic to the central notion of team teaching. Judson Shaplin of Harvard University states that the primary emphasis for teaching teams is upon the purposes of instruction, upon the possession of the necessary skills and knowledge by the teachers, and upon the inherent possibilities for flexible grouping of students to achieve these instructional purposes (24:1-98). Shaplin concludes that the underlying rationale must be that of attention to the problems of learning, and not upon the mere rearrangement of personnel which of itself will not improve instruction (24:1-98).

The central purpose of teaching teams was, from the first instance, clearly outlined by J. Lloyd Trump, a primary architect of the plan. He stated that, "The goal for teachers will be more effective and efficient instruction. Students will learn better the necessary skills and knowledge in subject areas . . . " (27:32). Ploghft supports this viewpoint. He writes, "A

proposition that a hierarchy in the teaching team provides a means whereby good teachers may be recognized and rewarded, cannot be defended as deserving inclusions in any plan which is at the outset concerned with more effective teaching-learning situations. Certain teachers could be paid more than others if they were to have one hundred pupils in self-contained classrooms." (23:220).

Thus, team teaching is a contemporary phenomena with origins "in a variety of historic efforts to individualize instruction, to achieve greater flexibility and efficiency in the arrangement of instructional groups, and to reorganize or upgrade teaching services to children." (1:255). Within this framework a teaching team could be deemed superior for academic achievement if it (1) proved more effective in terms of learning outcomes, or (2) proved more economical in terms of time per unit of at-school instruction.

#### IV. THE NEED FOR EXPERIMENTATION IN THE CLASSROOM

Psychologists and educators (14:1-25) are calling for renewed attempts to relate learning theory to class-room instruction. Hilgard writes: "The strong emphasis these days upon the importance of pure science is an attempt to restore balance, but it must not be permitted

to degrade the importance of applied science. applications of science require the same high order of abilities, and the same concern for objectivity, that characterizes pure science." (14:24). Hilgard substantiates this viewpoint by pointing out that ordinarily a "stage of invention" lies between a discovery in pure science and its practical application, and that conversely technology often does not wait for pure science, as the history of our practical knowledge about diet, metallurgy, and animal breeding makes abundantly clear. Hilgard continues by suggesting that education needs a taxonomy of learning as it applies to the classroom, and that this taxonomy should mesh educational objectives with educational processes to determine what can be taught best by machine, what by classroom teacher, and in which environments and with what resources. Hilgard concludes that, "Beyond research on principles of learning we need research on the bridges between theory and practice and then we need research at the point of application." (14:24).

The application of learning theory to the classroom is an applied science which has too long been
lightly treated. It is discouraging to review the
limited published research on class organization and
instruction. Much of that available is insufficiently

comprehensive and inadequately controlled. As Goodlad points out, "The effectiveness of experimental patterns has been determined largely by observations of administrative expediency, teacher satisfaction, and readiness of the teaching profession for change." (12:223). He suggests that, as a starting point, we need to learn the conditions of grouping under which students learn most effectively. True, we have determined that class size, per se, is not a critical variable affecting learning (1:240). But the appropriateness of class size to function needs rigorous study as does the value of ability grouping, of age grouping, and of grouping for interest.

Anderson joins those who advocate renewing efforts at applied research. He states that, "Among the ideas still generally accepted is that 'regular' classrooms in elementary and secondary schools should be of uniform size, capable of comfortably housing some twenty to thirty pupils. Despite the importance of such questions as optimum class size and optimum architectural layout of space, it is significant that no substantial theoretical justification has yet been offered in support of this arrangement of classroom space." (1:240). The quest of research thus remains that of fabricating class-

room patterns which enhance the significant differences between the ability, the interest, and the motivation of students, together with effective utilization of teaching resources.

Meanwhile, the volume of research remains thin. It is distressing to find that the 1960 edition of Research Studies in Education lists but seventeen dissertations in process under the wide category of "Methods of Teaching, Teaching Aids and Libraries." (11:1-86). Concurrently, however, some seventy-eight dissertations are investigating student problems beyond the high school, twenty-eight dissertations are exploring the subject of school plant and pupil transportation, and twenty-four are evaluating school public relations. Evidently it is more rewarding in some ways to investigate situations external to classrooms and to instruction than it is to deal directly with the learner and his immediate environment.

In conclusion, one additional point will be made.

Method is not exclusive to learning; strategy alone does

not encompass all teaching. An instructor may teach, for

instance, nothing but specific facts. He may teach them

brilliantly, and the facts may be important by all criteria;

but why teachthem if they soon are to be forgotten?

Assuming content is important, teaching then must be for transfer and generalization, for structure. Learning, to be vital, must be retained. Education is a road rather than an event.

#### CHAPTER III

#### METHODS OF RESEARCH

#### I. RESEARCH SETTING

Eleventh-grade students in social studies attending Eisenhower High School in Yakima, Washington were the subjects for this study. Eisenhower High School serves a community of largely middle and upper-middle class families, many of whom are doctors, attorneys, bankers, and business executives. The newest of two high schools in the district, Eisenhower enrolls approximately 1400 students in grades 10-12. As a group, the Eisenhower clientele tend to be strongly oriented toward a program of college preparatory education in the secondary school.

The experiment included 108 Eisenhower eleventhgrade students on which reliable data could be gathered.
The experimental treatment was conducted during the
students' regular classes in "United States History and
National Government," the eleventh-grade social studies
class required of students. Classes were held during
all periods of a six-period day.

#### II. PROCEDURES FOR THE EXPERIMENT

The procedures used in this experiment will be discussed in terms of three factors: (1) the design of the experiment; (2) the teaching procedures; (3) the testing procedures.

Design of the experiment. Generally, the experiment followed the classical design for experimental research. Samples were drawn where necessary, from each population to be tested. In this case, samples were drawn from the population involved in the team teaching classes and were labeled groups  $\mathbf{E}_1$  and  $\mathbf{E}_2$  for convenience of identification. These groups were labeled the experimental groups. The control groups labeled as groups  $\mathbf{C}_1$  and  $\mathbf{C}_2$  were picked from the two classes at Eisenhower High School that were taught by traditional methods.

Matched pairs were drawn from the experimental and the control groups on the basis of sex and intelligence scores taken from the school records. (See Appendix B and Appendix C). The intelligence scores were based on the Henman-Nelson Test which is the intelligence test used at Eisenhower High School. The pairs used in this study were matched the first day of school and remained constant throughout the year. There were no dropouts or transfers during the school year.

Teaching procedures. Two conditions occurred in this experiment. One condition incorporated the instructional systems described as important to learning and which are generally considered generic to team teaching. The other condition omitted these systems, and attempts to emulate that teaching situation which is generally considered to be "traditional," one teacher working alone with a class of from twenty-five to thirty students in a self-contained classroom.

The study, covering a course in United States

History and National Government, was of one year's duration. Instruction commenced on the first teaching day of the school year and the criterion measure, an achievement test, was administered on the designated examination date at the close of the school year.

The basic texts used in the course were <u>History</u>
of a Free People by Bragdon and McCutchen (6) and

Magruder's American Government, revised, by William A.

McClenaghan (16). Also, Gordon's <u>Reviewing American</u>

History, (13) which contains prepared criterion measures,
was used as supplementary material. Some of the techniques and methods used in teaching the course were taken
from some of the suggested guidelines in the book, <u>Social</u>

Studies in <u>Secondary Education</u> written by Jonathan

McClendon (18).

Three teachers, all males, carried the primary responsibility for conducting the course in this study. The three had been teaching together for two years prior to conducting the study, and were well acquainted with one another's competencies and shortcomings. Each instructor had his bachelor's degree from similar institutions and all had taken graduate work, thus affording similar educational backgrounds.

In terms of experience, variations did occur. One teacher had twenty eight years of classroom experience, a second had ten years experience and the third was beginning his fifth year. The teacher with ten years' experience was beginning his fourth year of team teaching and the other two had team-taught the previous year only. The teachers could be considered familiar with the techniques of team teaching based upon previous and present experience. Two of the teachers operating as members of the teaching team were also teaching the two "traditional" classes used in this study.

Additional variables which might interfere with the accuracy of the values to be explained have been considered. Independent variables controlled in this experiment were:

1. Student sophistication: The students were in their second year of instruction by teaching teams of this type, and were familiar with a variety of instructional systems.

- 2. All of the students attended one high school and the majority were from the same socioeconomic community.
- 3. Parents and the community were now well accustomed to staff utilization procedures. No undue interest resulted from this study.

Testing procedures. An achievement test was constructed especially for the study. The content validity of the test was insured by selecting questions from the texts and supplementary material. Questions were selected from Gordon's textbook, Reviewing American History (13) including examinations covering the course from which questions were needed for this study. The validity of the test was further insured by choosing questions equally from each unit of instruction. achievement test, finally agreed upon as the best possible examination for the study and containing 217 test items, (See Appendix A) was thoroughly examined and accepted by each participating teacher. The students were allowed three hours to complete this achievement test. A rigid time schedule for each unit was followed by teachers: this procedure established a good equitability between the distribution of content, the allowable time spent on each unit, and the criterion measure.

### CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA

The results of testing were organized as follows:

- 1. A statistical comparison of the difference in achievement of the control group and experimental group as shown by a "t" test of significance of the matched-pairs in Test Group I.
- 2. A statistical comparison of the difference in achievement of the control group and experimental group as shown by a "t" test of significance of the matched-pairs in Test Group II.

### I. PRESENTATION OF EVIDENCE

In order to make a complete statistical comparison between the groups the methods outlined in the introduction of this chapter were completed by running a "t" test of significance of the matched-pairs of both test Group I and test group II.

Test Group I. The results of the "t" test of significance of test group I is explained in the following comparisons. (See Table I on page 32. The formula used here is explained on page 30 of chapter III.)

$$\mathbf{E}d^{2} = \mathbf{E}D^{2} - \frac{(\mathbf{E}D)^{2}}{N}$$

$$t = \frac{\overline{D}}{\mathbf{E}d^{2}/N(N-1)}$$

t = 1.19

The achievement test constructed for the test groups in this experiment were administered to the experimental and control groups. The raw scores were computed so that a statistical comparison was made between the scores of the experimental and control groups.

A "t" test of significance was computed for each test group of matched pairs. This comparison showed whether there was any significant difference in the scores of the test groups. The formula used to compute the "t" tests was

$$\mathbf{Z}d^2 = \mathbf{\Sigma}D^2 - \frac{(\mathbf{\Sigma}D)^2}{N} \cdot t = \frac{\overline{D}}{\sqrt{\frac{\mathbf{\Sigma}d^2}{N(N-1)}}}$$

from Van Dalen (30:342,383).

The five per cent level was established as the statistical measure of significant learning.

In summary, one could argue that the study was conducted under as controlled and yet as "natural" conditions as could be found in an operating school.

TABLE I

# TEST GROUPS AND TEST RESULTS

## MATCHED-PAIR GROUPS

# Test Group I

| Experi   | mental <sub>l</sub>   | Cont  | rol <sub>1</sub>  | <u>D</u>  | <u>D</u> 2   |
|--|---|---|---|---|--|
| M.M. B.A. CB.P. V.L. W.C.H. S.S. M.B.B. S.C.L. A.S.S. N. KKBS.C. B.C. N. | 165<br>129<br>93<br>82<br>107<br>160<br>90<br>101<br>133<br>82<br>114<br>121<br>139<br>127<br>138<br>89<br>124<br>129<br>134<br>121<br>92<br>115<br>116<br>111<br>65<br>113<br>138<br>122 | R.S.<br>L.Y.<br>J.S.<br>P.S.<br>P.S.<br>P.M.<br>P.L.<br>N.C.I.<br>L.G. G.G.<br>C.B.B.<br>H.C.<br>B.B.<br>G.G.<br>M.S.<br>T.S.<br>D.H. | 152<br>144<br>108<br>96<br>110<br>143<br>115<br>125<br>99<br>127<br>108<br>129<br>122<br>140<br>104<br>121<br>127<br>128<br>86<br>121<br>104<br>108<br>109<br>140<br>140<br>131 | -13<br>+15<br>+14<br>+ 3<br>-17<br>+13<br>-10<br>- 10<br>- 10<br>- 10<br>- 10<br>- 10<br>- 10<br>- 10 | 169<br>225<br>196<br>225<br>196<br>289<br>169<br>164<br>225<br>164<br>289<br>169<br>100<br>24<br>25<br>49<br>36<br>36<br>144<br>166<br>164<br>81 |
|  | 3250  |   | 3299  | +57   | 3333   |

There is no significant difference of achievement demonstrated by either test group at .05 level.

Test Group II. The results of the "t" test of significance of the matched-pairs groups are demonstrated by the following statistical comparison. (See Table II on page 34 of this chapter for the data used in this comparison. Also, the formula used here is explained on page 30 of chapter III).

$$\mathbf{\Sigma} d^2 = \mathbf{\Sigma} D^2 \qquad \underline{(\mathbf{\Sigma} D)^2}$$

$$t = \sqrt{\sum_{d^2/N(N-1)}}$$

$$t = .59$$

TABLE II

# TEST GROUPS AND TEST RESULTS

## MATCHED-PAIR GROUPS

Achievement Test Results

Test Group II

| Experimental <sub>2</sub>   |  | Contr  | Control <sub>2</sub>                                |                            | <u>D</u> 2  |
|---|--|--|---|----------------------------|---|
| B.G. J.S. S.P. S.W. S. S.N.S. C.V.E. M.M. R.J. R.T. D.V. P. V.W. K.W. S.T. R.M. M.B. D.H. S.A. M.B. D.E. B.C. | 135<br>127<br>119<br>191<br>112<br>79<br>94<br>168<br>152<br>194<br>146<br>104<br>125<br>124<br>101<br>86<br>132<br>121<br>186<br>102<br>118<br>118<br>118<br>118<br>118<br>118<br>118<br>118<br>118<br>11 | S.B. R.B. C.C. C.C. B.C. D.E. R.H. M.J. M.A. S.W. S.S. M.V. S.S. M.V. S.S. | 118<br>105<br>96<br>138<br>123<br>180<br>107<br>131 | 96345266697558640626556376 | 81<br>39<br>124<br>366<br>366<br>367<br>367<br>367<br>367<br>367<br>367 |
|   | 3244   |  | 3227  | -17                        | 931   |

The difference in achievement indicated by the above "t" test of significance does not show any significant difference in learning outcomes at the .05 level.

The presentation and analysis of the data used will be discussed in the summary and conclusions presented in the following chapter.

### CHAPTER V

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

## I. SUMMARY

The purpose of this study was to clarify the issue of achievement as it relates to team teaching. Much has been written recently in vague terms about the positive or dilatory effects of teaching teams. Data, however, seldom were given in support of a particular position; opinions were typically just opinions. Such data as were available ordinarily lacked the cogency and sharpness required of reliable data. For instance, some tests which tend to measure learnings over a lifetime usually lack the sensitivity to detect differences arising from a few months of instruction in control versus experimental situations.

In addition, the chameleon-like quality of team teaching compounds the difficulty of accurately identifying what it is researchers were attempting to measure. Team teaching is not a single substance or system. It cannot, as presently constituted, be as closely defined as certain equalities of learning such as concepts or attitudes. The umbrella of team teaching encompasses weak, strong, and mediocre learning environments. One,

two, or all of the variables commonly associated with a team approach to teaching are, nationwide, applied to the learning situation and labeled simply, "team teaching."

As a result of such looseness, literally everything excepting one teacher working alone with thirty students has been identified as team teaching. Thus, it was in an attempt to sharpen some definitions and bring some order to the situation that the present study was conceived.

Rationale for the study are threefold. The study attempts to gain: (1) more accurate identification and specific application of certain methodological variables generic to team teaching; (2) close control over the learning and testing environment; (3) a sensitive, precise criterion measure which would evaluate materials presented during the experiment, rather than generalized learnings. Present research on team teaching fails to meet these criteria.

The methodological variables selected for evaluation were teacher specialization through teaming, the use of large or small groups according to function, and the application of modern instructional devices such as the overhead projector and limited units of programmed materials. Additional variables often found in team teaching situations, such as use of teacher aides or

flexible period lengths were not examined.

The criterion measure was created especially for the study. In addition to establishing reliability and validity, attempts were made to enhance sensitivity and accuracy by testing separately for facts, for transfers (or associations), and for application of rules learned in the course. The criterion measure was purposely specialized; it tests generalized learnings across a large body of content.

### II. CONCLUSIONS

The hypothesis of this study was that there would be no difference in achievements of students taught by a team of several teachers possessing a variety of specialities, and who control the necessary teaching aids to facilitate instruction, than when taught by individual teachers using conventional techniques and working independently with groups of twenty-five to thirty students. No new psychological concepts were espoused. Rather, certain theories commonly agreed upon were applied to a system of teaching in order to identify this system in terms of the psychology of learning. This system was then compared experimentally with traditional classroom situations for achievement outcome.

A "t" test of significance was run on the matchedpairs group and the results as discussed in Chapter IV lead this writer to the following conclusions:

The difference in achievement was in favor of the control group by 1.19 of a point in Test Group I. The difference is too small to be significant. The null hypothesis is retained.

In Test Group II of the matched-pairs the "t" test of significance tends to be contradictory to Test Group I and favors the experimental group by .59 of a point. This certainly is not of significance, therefore, the null hypothesis is retained.

In all of the statistical comparisons discussed above the conclusion reached by this writer is that there is no significant difference at .05 level. The null hypothesis is retained by this writer in all statistical comparisons.

Generalizations arising from this analysis must be tentative, both because only the subject field of social science was examined, and also because of the complex nature of learning in its immediate and long-range aspects.

Learning in the classroom, or elsewhere, incorporates a number of complex identities such as perception and

discrimination, association, aptitude, set, and motivation.

These forces interact to form an individual's thinking or
generalizations, which in turn cluster as concepts.

How strongly these elements basic to learning are influenced in the classroom by various strategies of teaching is yet to be determined. The profession of teaching needs to make a serious and resolute assault upon this very problem. Method and theory must fuse, or else good teaching will continue to be a matter of chance.

### III. RECOMMENDATIONS

During the course of planning and conducting a study, many insights and innumerable avenues for exploration arise which are inconveniently invisible at the initiation of the experiment. This is as much an act of learning as it is an act of proving or disproving.

The writer lists some of the more important issues concerning learning in the classroom which arose during the course of this study, together with some suggestions for further investigation:

(1) While learning may be measured in experiments of one or two hours, it is possible that under classroom conditions a period of one year's instruction is insufficient to gain a comprehensive measure of learning fair to both

zation could not be fully applied within the short time limit. In this experiment a single course was taught, so in essence all teachers become specialists. However, over a period of four or six courses, a more reliable comparison could be made between the one teacher working alone to prepare and teach and test, and a team who might share these tasks more efficiently and thus enhance specialization through added time for preparation.

- (2) Additional studies on methods or strategies of classroom instruction should maintain some control over what is to be taught and measured. However, a degree of freedom should be given to the separate conditions for organizing and pacing the materials.
- team teaching en mass. It was an attempt to test for achievement by this method as compared to traditional classroom instruction. Certain additional variables common to many teaching teams, such as the utilization of teacher aides or the scheduling of different length time modules, should be

- examined separately and in concert with the variables of this experiment; teacher specialization, grouping for function, and use of modern instructional aids.
- (4) The individual who investigates a teaching team faces a serious dilemma. He either ignores the teacher variable and tests a control group against an experimental group, or else he controls the teacher variable and faces the possibility that the added preparation time given to teachers in team situations will inadvertently assist these same teachers in instructing their traditional classrooms. way out of this dilemma is suggested. teaching a series of units, in which the two sets of teachers alternate the two conditions, a design may be established which eliminates both problems. A minimum of four consecutive instructional units should be taught and tested so as to gauge effectiveness over the full cycle of a series of preparations, presentations and examinations. The criterion measures should be especially constructed for the experiment so as to enhance sensitivity to the material covered.

- (5) In testing the separate variables of team teaching, some modifications of these variables should be encouraged. For instance, the variable of grouping for function (i.e., large groups for instruction, small groups for discussion, etc.) may be organized so that small discussion groups immediately follow the large group presentation, so that the presentation is one day and the discussion is the next, or so that the discussion of a topic prepares the student for a large group presentation. In the first instance immediate reinforcement should be enhanced, in the second instance the strength of spaced learning, and in the third instance the facets of set and perception.
- (6) A series of studies need to be conducted on a number of grade levels and in all subject fields. If different subject fields have different structures, then studies should be conducted so as to determine the optimum instructional system for each structure. Also, it is psychologically sound to give younger children more activity and concrete experiences than the older students, who may by vicarious generalizations accelerate their rate of learning.

- (7) Careful analysis should be made of all student responses aligned to achievement, such as the effect of different instructional systems on the ability of students to think critically, to work independently, and on their concepts of learning and of self. Queries should not aim at describing the instructional systems employed, but at the <u>results</u> of these systems; do not examine students about the method, test for the objective, the result.
- (8) Close control over the present study was gained by preparing common instructional materials for both conditions, and by establishing a calendar for the teaching of these materials. Perhaps in attempting to eliminate intervening variables, such as teacher preparation of special handouts for just one of the two conditions, the writer eliminated some of the vitality of both, or either, of the conditions which he was attempting to examine.



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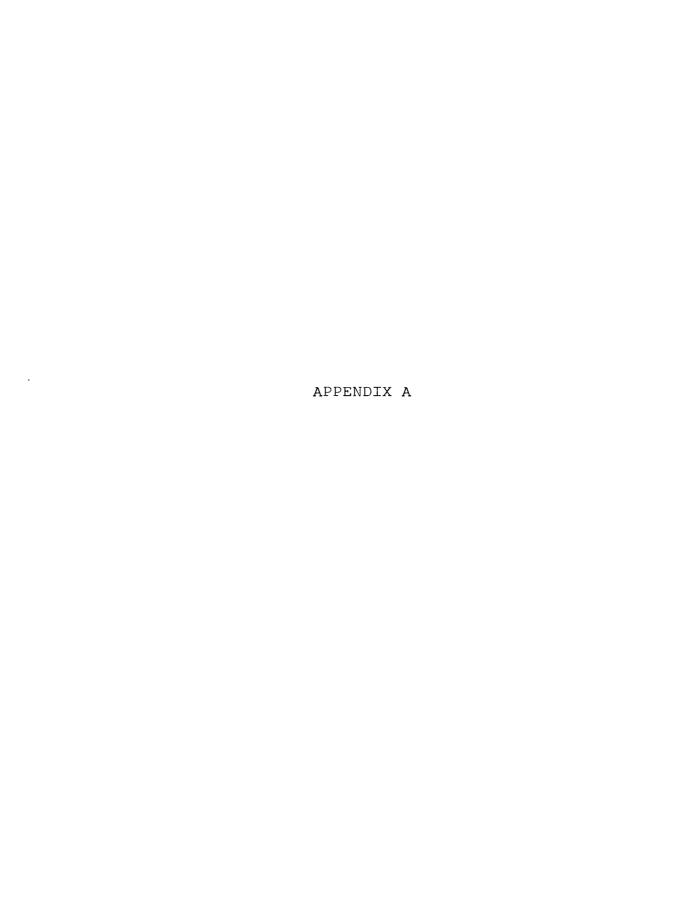
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# U. S. HISTORY

# FINAL EXAMINATION

June 6, 1967

# Completion Test

Write the word or expression that completes the statement correctly.

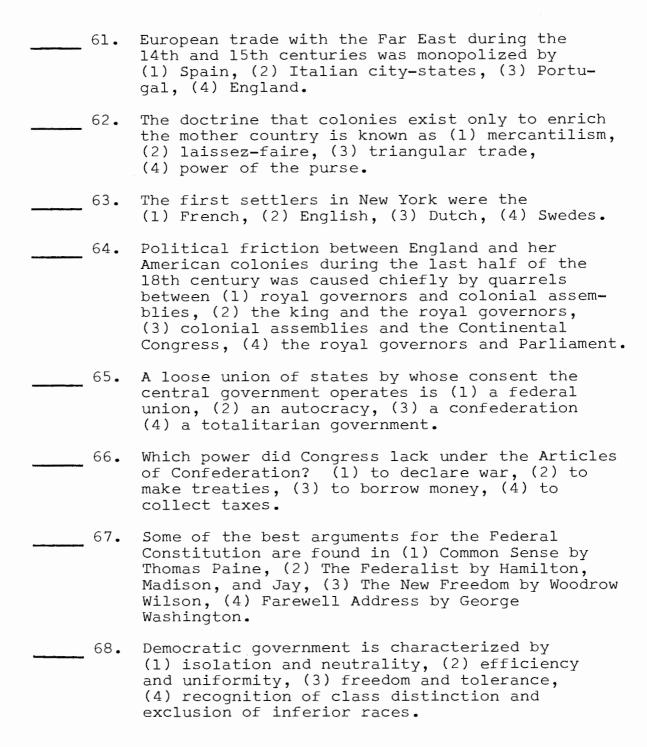
| 1.  | The first elected legislature in the New World was the   |
|-----|--|
| 2.  | The first written constitution in America was the  |
| 3.  | The town meeting developed as a local legislature in   |
| 4.  | The leader of Rhode Island colony who extended complete religious freedom to all people was                                  |
| 5.  | Because they produced sufficient grain for export, the Middle Colonies were known as   |
| 6.  | Immigrants to the colonies who agreed to work for a fixed number of years in exchange for their trans- portation were called |
| 7.  | The chief occupation of more than 90% of the English colonists was   |
| 8.  | A celebrated victory for the American ideal of freedom of the press was the case.  |
| 9.  | The legislative power is vested in   |
| 10. | The number of Presidential electors from each state shall be equal to the number of  |
| 11. | The has the sole power of impeach-   |
| 12. | The serves as the President of the Senate.   |
| 13. | All bills for raising revenue shall originate in   |
|     |  |

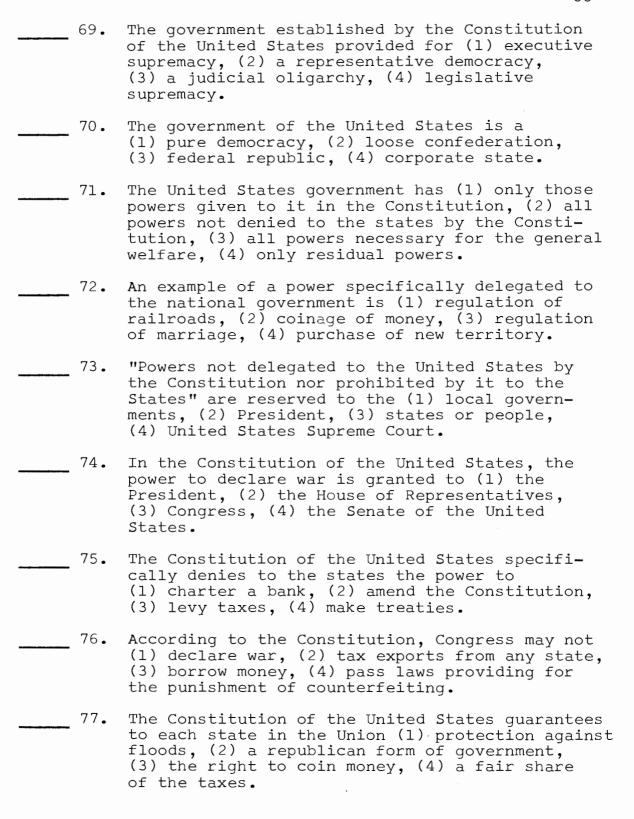
| 14. | The privilege of unlimited debate in the Senate may be halted by a special 2/3's vote known as |                                   |        |                                       |  |  |  |
|-----|--|-----------------------------------|--------|---------------------------------------|--|--|--|
| 15. | A Presidential veto may be overridden by a vote of   |                                   |        |                                       |  |  |  |
| 16. | In our government today, there is a trend toward an increase in the powers of the branch.      |                                   |        |                                       |  |  |  |
| 17. | Cases  | Cases of impeachment are tried by |        |                                       |  |  |  |
| 18. | A Supreme Court decision, declaring an act of Congress unconstitutional, must be a vote.       |                                   |        |                                       |  |  |  |
| 19. | The only state in the Union having a unicameral or one-house legislature is                    |                                   |        |                                       |  |  |  |
| 20. | As a result of the Missouri Compromise,entered the Union as a free state.                      |                                   |        |                                       |  |  |  |
| 21. | The method used to smuggle Negro slaves out of the South was called                            |                                   |        |                                       |  |  |  |
| 22. | Abraham Lincoln stated that his primary purpose in waging the Civil War was to                 |                                   |        |                                       |  |  |  |
| 23. | The only President in the history of the United States to be tried for impeachment was         |                                   |        |                                       |  |  |  |
| 24. | The Alabama claims were peaceably settled by   |                                   |        |                                       |  |  |  |
| 25. | The P  | ittsburgh of the South            | n is _ | •                                     |  |  |  |
|     |  | Matchir                           | ng Tes | t                                     |  |  |  |
|     | 26.  | Thomas Jefferson                  | a.     | Captured Quebec                       |  |  |  |
|     | 27.  | Charles Townshend                 | b.     | Committees of Cor-<br>respondence     |  |  |  |
|     | 28.  | Edmund Burke                      | С.     | Tax program opposed by the colonists. |  |  |  |
|     | 29.  | Haym Salomon                      | d.     | Englishman who favored colonists.     |  |  |  |

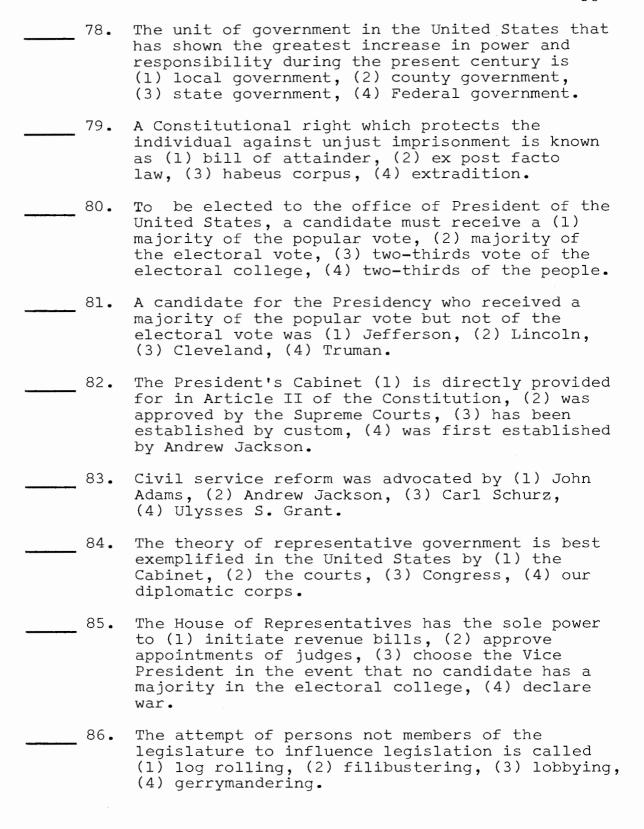
|   | 30. | General Wolfe        | e. | Author of Common Sense   |
|---|-----|----------------------|----|--|
| Proceedings of the Particular Service   | 31. | General Cornwallis   | f. | Wrote Declaration of Independence                                    |
| *************************************** | 32. | Marquis de Lafayette | g. | Surrendered army at<br>Yorktown                                      |
|   | 33. | George Rodgers Clark | h. | Won the Northwest<br>Territory                                       |
|   | 34. | Thomas Paine         | i. | Foreigner who aided the colonists                                    |
|   | 35. | Samuel Adams         | j. | Helped finance the Revolutionary War.                                |
|   | 36. | Henry L. Stimson     | k. | Led Filipino revolt against the U.S.                                 |
|   | 37. | John Hay             | 1. | Chinese Nationalist<br>leader during W.W. I                          |
|   | 38. | Sun Yat-sen          | m. | Allied Supreme Com-<br>mander for Japan                              |
|   | 39. | Emilio Aguinaldo     | n. | lst Pres. of Indepen-<br>dent Philippine<br>Republic                 |
|   | 40. | Millard Tydings      | 0. | Announced open-door policy   |
|   | 41. | Theodore Roosevelt   | р• | Opened Japan to<br>Western Trade                                     |
|   | 42. | Manual Roxas         | q• | Stated that U. S. would recognize no territory taken by force        |
|   | 43. | Manuel Quezon        | r. | Received Nobel Peace<br>Prize for efforts in<br>ending Russo-Jap War |
|   | 44. | Chaing Kai-shek      | S. | Chinese Communist<br>leader  |

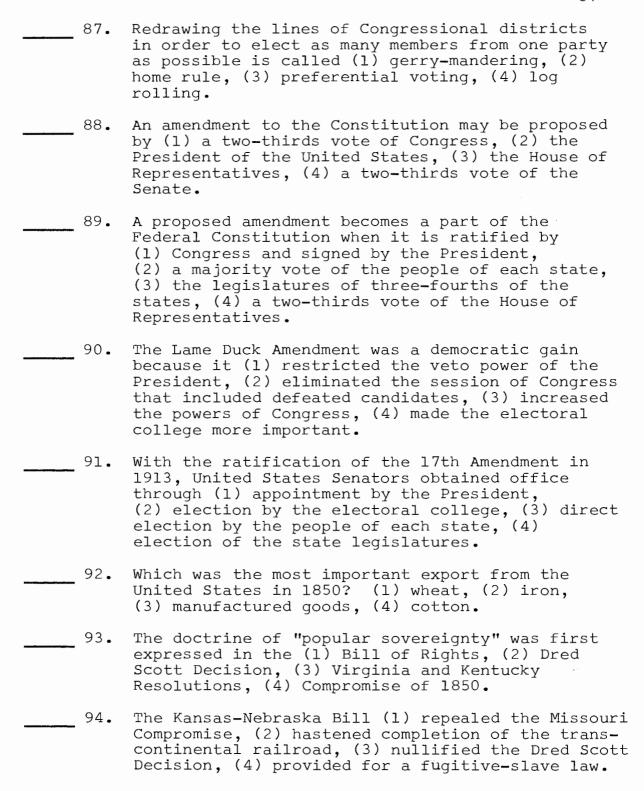
|  | 45.   | Mal Tse-Tung         | t.         | Act providing inde-<br>pendence for the<br>Philippine Islands |
|--|-------|----------------------|------------|---|
|  | 46.   | Douglas MacArthur    | u.         | UN Mediator for<br>Palestine                                  |
|  | 47.   | Matthew C. Perry     | V•         | Communist Leader of<br>East Germany                           |
|  | 48.   | Dwight D. Eisenhower | W •        | Chancellor of West<br>Germany                                 |
|  | 49.   | Marshal Tito         | <b>X</b> • | First President of<br>South Korea                             |
|  | 50.   | Syngman Rhee         | У•         | First Prime Minister of Israel                                |
| ************************************** | 51.   | Nikita Khrushchev    | <b>Z</b> • | Author of "atoms for peace" plan                              |
|  | 52.   | Vladyshaw Gomulka    | Α.         | Communist leader of Poland                                    |
|  | 53.   | Ralph Bunche         | В.         | Head of United Arab<br>Republic                               |
|  | 54.   | Jawaharlal Nehru     | С.         | Communist leader of<br>Yugoslavia                             |
|  | . 55. | Janos Kadar          | D •        | American plan for international control of atomic energy      |
|  | 56.   | Gamal Nasser         |            |   |
|  | 57.   | Konrad Adenauer      |            |   |
|  | 58.   | Bernard Baruch       |            |   |
|  | 59.   | David Ben-Gurion     |            |   |
|  | 60.   | Walter Ulbricht      |            |   |
|  |       |                      |            |   |

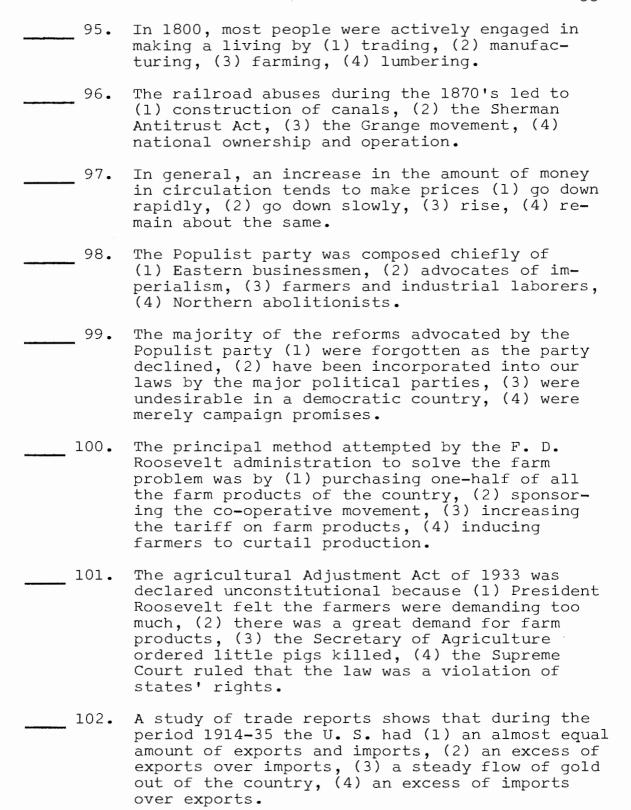
## Multiple-Choice Test

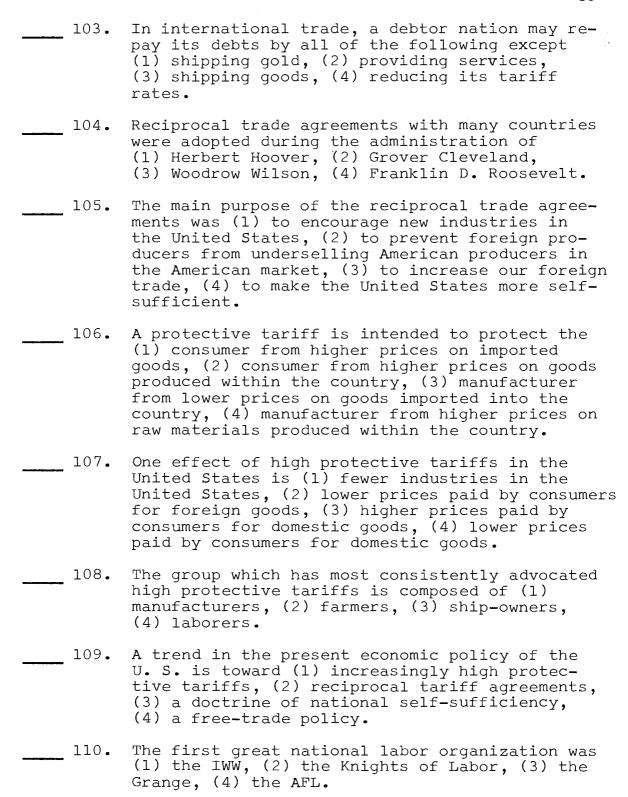


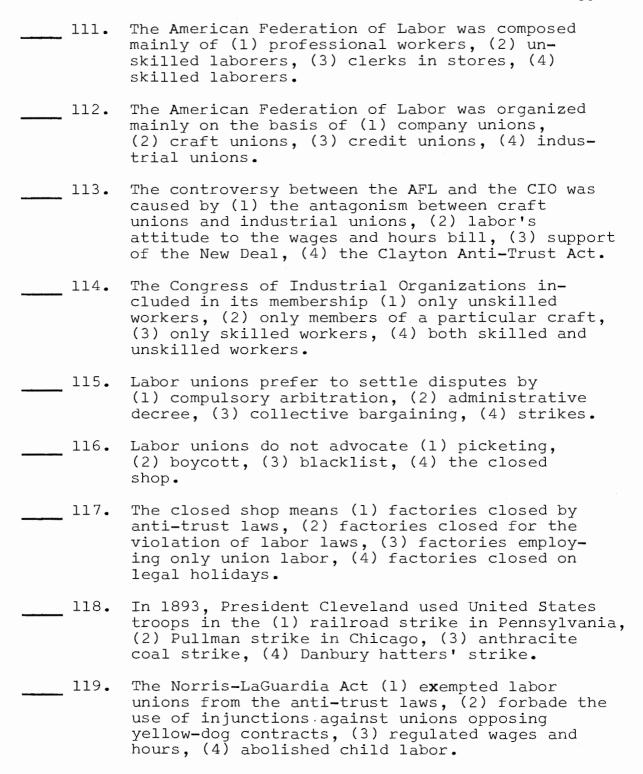


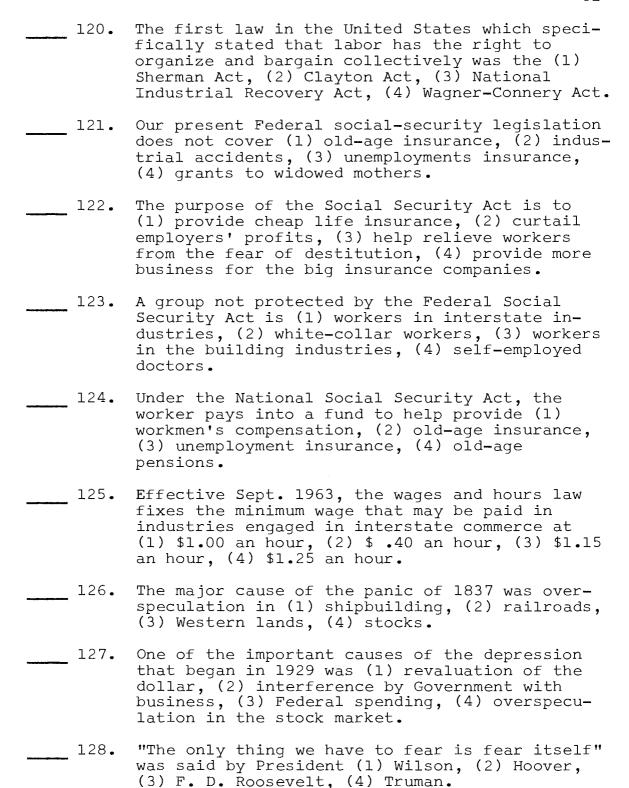


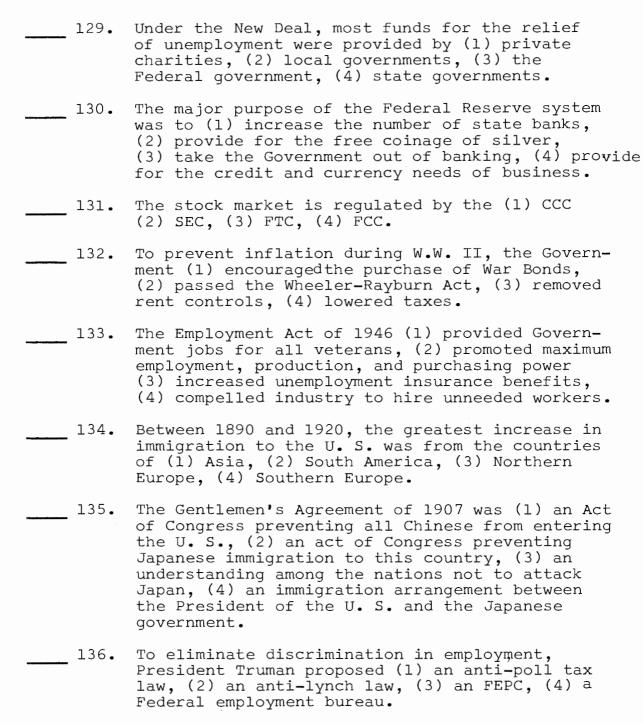




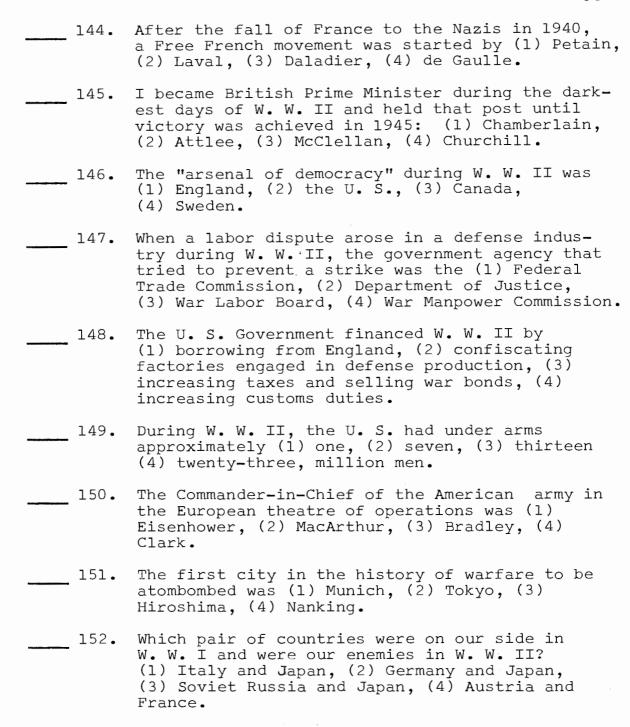








137. "We should consider any attempt on their (European nations) part to extend their system to any portion of this hemisphere as dangerous to our peace and safety" was a statement of policy made by (1) G. Washington, (2) James Monroe, (3) William McKinley, (4) Woodrow Wilson. The Hay-Paunceforte Treaty between the U. S. 138. and Great Britain was concerned with the (1) boundary between Maine and Canada, (2) building of a canal across the Isthmus of Panama, (3) "open door" in China, (4) Bering Sea seal fisheries. 139. The Platt Amendment provided for (1) the annexation of Cuba by the U. S., (2) the establishment of a protectorate over Cuba by the U. S., (3) the withdrawal of American investments from Cuba, (4) the return of Cuba to Spain. 140. The Monroe Doctrine was the basis for our intervention in the (1) Mexican War, (2) Spanish-American War, (3) Oregon boundary dispute, (4) Venezuela boundary dispute. 141. Theodore Roosevelt's point of view in regard to foreign affairs is best expressed by (1) "Peace at any price," (2) "Millions for defense, but not one cent for tribute," (3) "We are too proud to fight," (4) "Speak softly and carry a big stick." 142. Theodore Roosevelt's corollary to the Monroe Doctrine provided for (1) freedom for all the colonies of European nations in the Western Hemisphere, (2) the neutrality of the U. S. in case of European wars, (3) the recognition of the American nations which had seceded from Spain, (4) intervention in the affairs of Latin American countries to insure payment of debts by those countries. 143. World War II started in 1939 when Germany launched an attack upon (1) England, (2) France, (3) Poland, (4) Russia.



153. The Atlantic Charter stated that (1) no American troops would be sent across the Atlantic to invade foreign countries, (2) the U. S. fleet would patrol the Atlantic, (3) the British fleet would patrol the S. W. Pacific, (4) the United Nations would seek no aggrandizement, territorial or otherwise. The Charter of the United Nations was completed 154. at the conference held at (1) New York, (2) San Francisco, (3) Yalta, (4) London. American membership in the United Nations re-155. guired Senate approval because of the Senate's power to (1) initiate revenue bills, (2) filibuster, (3) ratify treaties, (4) recognize new governments. 156. According to the United Nations Charter, each nations' voting strength in the General Assembly is according to (1) size, (2) population, (3) military strength, (4) the principle of one vote for one nations. 157. The six nonpermanent members of the Security Council are selected by the (1) General Assembly, (2) Economic and Social Council, (3) five permanent members of the Council, (4) Secretariat. 158. The United Nations Charter gives the Security Council the power to (1) veto decisions of the Assembly, (2) cancel treaties made by member nations, (3) recommend use of force to stop aggression, (4) elect the Secretary-General. The veto power in the UN is held by (1) each 159. member of the Security Council. (2) each member of the General Assembly, (3) only the "Big Three" nations, (4) the five permanent members of the Security Council. A territory that is under the protection of the 160. UN but whose government is supervised by a strong nation is called a (1) trusteeship, (2) protectorate, (3) mandate, (4) sphere of influence. A leading member of the UN that was never a mem-161. ber of the League of Nations is (1) Italy, (2)

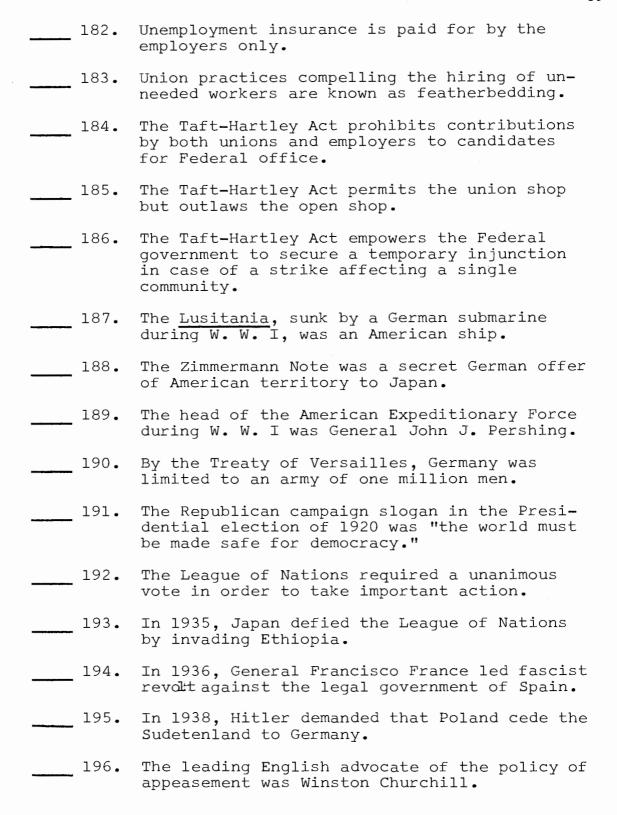
Soviet Russia, (3) France, (4) the United States.

- 162. Which was an achievement of the United Nations?
  (1) establishment of a truce in Algeria, (2)
  award of Kashmir to Pakistan, (3) release of
  Hungary from control of Soviet Russia, (4) withdrawal of the French and British from the Suez
  Canal Zone.
  - 163. The UN finances its activities chiefly by (1) charging admission to visitors, (2) requesting funds of member nations, (3) placing a tax upon citizens of UN member nations, (4) selling UN stamps and souvenirs.
- 164. The doctrine of laissez-faire helped the progress of the Industrial Revolution chiefly because the doctrine (1) advocated the regulation of business to protect consumers and small businessmen, (2) imposed a minimum of restrictions on the freedom of manufacturers to develop business, (3) protected the workingman from unfair labor practices on the part of the employer, (4) supported a governmental policy of high protective tariffs against foreign goods.
  - Industrial Revolution, the industrialized nations of the world have been able to (1) raise the national standard living despite increases in population, (2) eliminate periods of recession and depression in the economy of the nations, (3) eradicate poverty and hunger among the peoples of their nations, (4) resist demands to lower trade barriers among nations.
- 166. A contributing factor to the rise of communism in Russia, of fascism in Italy and of nazism in Germany was the (1) popularity of democratic governments, (2) prevailing economic conditions, (3) provisions of the Treaty of Versailles, (4) weaknesses of the League of Nations.
- 167. The emancipation of both serfs in Russia and slaves in the United States failed to accomplish the anticipated results, chiefly because (1) political turmoil brought restoration of serfdome and slavery to both nations, (2) the immediate outbreak of war nullified all social reforms, (3) the exploitation of both groups

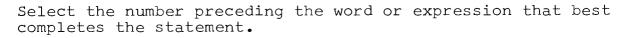
- continued for many years after emancipation, (4) serfs and slaves proved impossible to educate because of former hardships.
- 168. Which statement applies to the governments of both Great Britain and the U. S.? (1) Members of the lower house of the legislature are elected directly by the voters. (2) Cabinet members may introduce bills in the legislature, (3) The Chief Executive may be removed from office by impeachment. (4) The courts decide on the constitutionality of any law passed by the legislature.
- 170. Which provision of the Northwest Ordinance of 1787 was based upon an established practice followed in Great Britain? (1) "There shall be neither slavery nor involuntary servitude in the said territory, otherwise than in the punishment of crime . . " (2) " . . . such State shall be admitted . . . on an equal footing with the original States" (3) "The inhabitants . . . shall . . . be entitled to the benefits of the writ of habeaus corpus, and of the trial by jury . . . " (4) " . . . schools and the means of education shall forever be encouraged."
  - 171. The idea that the Constitution of the U. S. provides for a central government of limited sovereign power is best supported by the (1) exercise of residual powers by the states, (2) use of implied powers by Congress, (3) grant of military power to the President of the United States, (4) right of judicial review of lower court decisions by the U. S. Supreme Court.

172. The Constitution of the U. S. prohibits the passage of a bill of attainder. The effect of this provision is that a citizen is guaranteed (1) a trial, (2) the right to vote, (3) the right to bear arms, (4) freedom of religion. Patents and copyrights give to individuals and 173. corporations who receive them (1) unlimited control of a product, (2) control of the product for a limited length of time, (3) public grants to make manufacturing profitable, (4) immunity from public interference in the manufacture of the product. 174. The decision to embark on a space program is an example of the exercise by Congress of (1) implied powers, (2) police powers, (3) concurrent powers, (4) reserved powers. 175. Which action required a two-thirds vote of the U. S. Senate to become effective? (1) declaration of war against Japan in 1941, (2) appointment of Earl Warren as Chief Justice of the U. S. Supreme Court, (3) ratification of the Nuclear Test Ban Treaty in 1963, (4) President Truman's removal of General Douglas MacArthur from his Far Eastern commands. 176. The ideal of direct democracy is best exemplified by (1) manhood suffrage, (2) the initiative and referendum, (3) the city manager form of government, (4) the commission form of government. True - False Test 177. Among the workers not organized into unions are agricultural workers. 178. Unions dominated by employers were known as industrial workers' unions. 179. The Norris-LaGuardia Act restricted the issuance of injunctions by Federal courts. 180. The Wagner-Connery Act forbade unfair labor practices relating to wages and hours. 181. Male workers are entitled to social security old-

age insurance benefits starting at the age of 60.

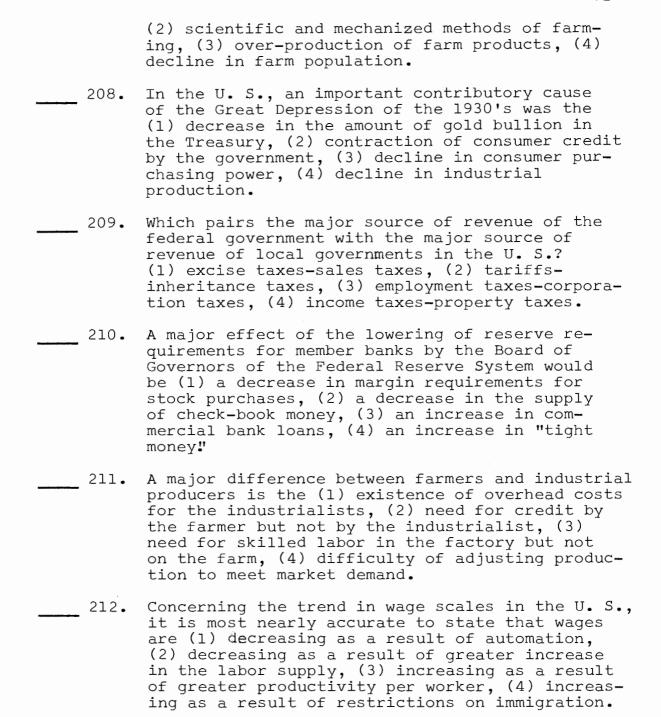


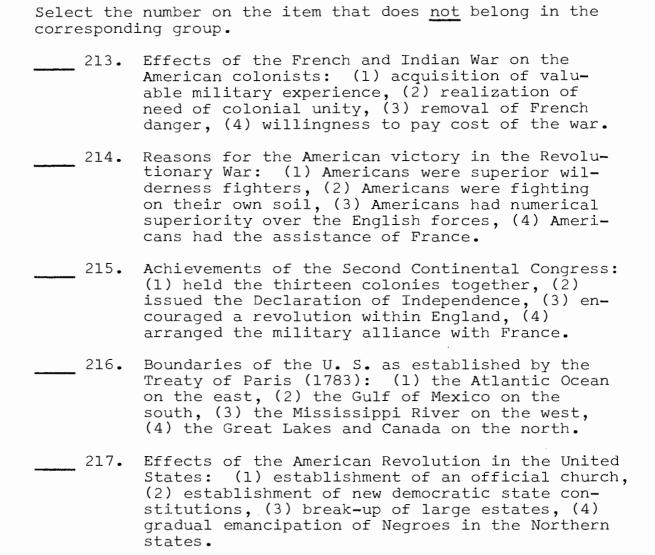
## Multiple Choice



- 197. The development of the spirit of nationalsim after 1812 in the U. S. was best illustrated by the (1) Hartford Convention, (2) proclamation of the Monroe Doctrine, (3) presidential election of 1824, (4) enactment of the Tariff of 1828.
- 198. Which issue aroused the strongest sectional feeling during President Jackson's administration? (1) tariff question, (2) spoils system, (3) change in the method of nominating a President, (4) question of Indian lands in Georgia.
- 199. Since the end of W. W. II, which has been an important business trend in the U. S.?
  (1) decline of discount houses, (2) shift of industries to the S. E., (3) decrease in the use of credit facilities, (4) diversification of interests and holdings by large corporations.
- 200. President Polk failed to gain bipartisan support for the Mexican War mainly because (1) the Whigs argued that Westward expansion would hurt New England manufacturing, (2) the Democrats maintained that Great Britain would use the war as an excuse to occupy all of Oregon, (3) many feared that acquisition of new territories would reopen the slavery controversy, (4) before the war, Mexico had declared herself in favor of selling the disputed territory.
- 201. The chief reason why the English commercial class supported the Southern Confederacy instead of the North at the time of the Civil War in the U. S. was that the South (1) was fighting for self-determination and the preservation of its social structure, (2) with its superior military officers and fighting men was more likely to win the war, (3) was more likely to guarantee the payment of debts to British citizens, (4) was more likely to provide favorable tariff conditions for British goods.

- 202. In U. S. history, the presidential election of 1876 showed that (1) it is possible for the method provided by the Constitution for selecting a President to prove unworkable, (2) a third party was influential in the outcome of the election, (3) the Republican party returned to power for the first time since the election of 1860, (4) the stationing of federal troops in the South had no political effect on the election.
  - 203. In 1919, President Wilson found it impossible to negotiate a peace settlement on the basis of the Fourteen Points, chiefly because of the (1) Allied refusal to support an association of nations, (2) collapse of the Austro-Hungarian and Ottoman Empires, (3) establishment of mandated territories in Africa and Asia, (4) secret territorial agreements among the Allied governments.
- 204. The careers of Theodore Roosevelt and Franklin D. Roosevelt were similar in that each man (1) led the cause for international peace but involved the U. S. in a general war, (2) led the fight for progressive ideas and developed a slogan that has become part of our historical background, (3) succeeded to the presidency upon the death of the previous President, (4) successfully mediated an international dispute between major world powers.
- 205. During the late 1920's and early 1930's, U. S. foreign policy changed most significantly in respect to (1) Canada, (2) Great Britain, (3) Latin America, (4) Middle East.
- 206. Which generalization is supported by the history of the world between 1919 and 1939 (1) the failure of collective security encouraged aggression, (2) the Treaty of Versailles destroyed the spirit of nationalism, (3) the British Empire reached the height of its power, (4) the strong nations were ready to abandon imperialistic policies.
- 207. With respect to agriculture in the U. S., which of the following is a basic cause of the other three? (1) parity pricing of farm products,





APPENDIX B

GROUP I

MATCHED-PAIRS E<sub>1</sub> AND C<sub>1</sub>

| Expe | cime | ntal <sub>l</sub> | I.Q. | Raw<br>Score | Control <sub>1</sub> | I.Q. | Raw<br>Score |
|------|------|-------------------|------|--------------|----------------------|------|--------------|
| Girl | 1    | M.M.              | 125  | 165          | Boy 1 R.S.           | 125  | 152          |
| Boy  | 2    | B.S.              | 119  | 129          | Girl 2 L.Y.          | 119  | 144          |
| Воў  | 3    | C.D.              | 101  | 93           | Girl 3 J.S.          | 100  | 108          |
| Воу  | 4    | B.D.              | 97   | 82           | Girl 4 S.P.          | 100  | 96           |
| Воу  | 5    | C.P.              | 109  | 107          | Girl 5 P.S.          | 106  | 110          |
| Воу  | 6    | J.P.              | 122  | 160          | Girl 6 L.S.          | 122  | 143          |
| Воу  | 7    | V.L.              | 104  | 90           | Girl 7 P.M.          | 105  | 115          |
| Воу  | 8    | $M \cdot G \cdot$ | 109  | 101          | Girl 8 P.L.          | 108  | 112          |
| Воу  | 9    | G.W.              | 115  | 133          | Girl 9 N.H.          | 116  | 125          |
| Воу  | 10   | R.C.              | 93   | 82           | Girl 10 C.L.         | 95   | 99           |
| Воу  | 11   | Е.Н.              | 111  | 114          | Girl ll R.I.         | 111  | 127          |
| Воу  | 12   | F.S.              | 103  | 121          | Girl 12 L.I.         | 103  | 108          |
| Воу  | 13   | S.S.              | 121  | 139          | Girl 13 L.G.         | 121  | 129          |
| Воу  | 14   | C.M.              | 115  | 127          | Girl 14 R.G.         | 113  | 122          |
| Воу  | 15   | R.B.              | 123  | 138          | Girl 15 C.G.         | 125  | 140          |
| Воу  | 16   | L.B.              | 97   | 89           | Girl 16 L.C.         | 96   | 104          |
| Воу  | 17   | J.S.              | 111  | 124          | Girl 17 J.B.         | 111  | 121          |
| Воу  | 18   | L.L.              | 114  | 129          | Girl 18 C.B.         | 115  | 127          |
| Girl | 19   | D.R.              | 116  | 134          | Boy 19 C.H.          | 116  | 129          |
| Girl | 20   | K.K.              | 115  | 121          | Boy 20 B.L.          | 113  | 128          |
| Girl | 21   | K.J.              | 95   | 92           | Boy 21 C.B.          | 95   | 86           |
| Girl | 22   | B.S.              | 108  | 115          | Boy 22 S.B.          | 108  | 121          |
| Girl | 23   | S.C.              | 111  | 116          | Boy 23 G.H.          | 110  | 104          |
| Girl | 24   | D.L.              | 109  | 111          | Boy 24 S.C.          | 108  | 108          |
| Girl | 25   | C.A.              | 81   | 65           | Boy 25 M.S.          | 79   | 61           |
| Girl | 26   | B.S.              | 106  | 113          | Boy 26 T.R.          | 106  | 109          |
| Girl | 27   | I.S.              | 121  | 138          | Boy 27 F.S.          | 120  | 140          |
| Girl | 28   | C.N.              | 118  | 122          | Boy 28 D.H.          | 117  | 131          |



## TEST GROUP II

## MATCHED-PAIRS $\mathbf{E}_2$ AND $\mathbf{C}_2$

| Exper | imer | ntal <sub>2</sub>         | [.Q. | Raw<br>Score | Co   | ontr | <u>ol</u> 2           | I.Q. | Raw<br>Score |
|-------|------|---------------------------|------|--------------|------|------|-----------------------|------|--------------|
| Girl  | 1    | в.С.                      | 115  | 135          | Boy  | 1    | S.B.                  | 115  | 126          |
| Girl  | 2    | J.S.                      | 114  | 127          | Воу  | 2    | R.B.                  | 113  | 121          |
| Girl  | 3    | S.P.                      | 104  | 119          | Воу  | 3    | J.C.                  | 104  | 116          |
| Girl  | 4    | S.W.                      | 135  | 191          | Воу  | 4    | C.C.                  | 137  | 187          |
| Girl  | 5    | J.N.S.                    | 108  | 112          | Воу  | 5    | B.C.                  | 108  | 117          |
| Girl  | 6    | J.A.S.                    | 88   | 79           | Воу  | 6    | $M \cdot C \cdot$     | 90   | 81           |
| Girl  | 7    | $C \cdot V \cdot E \cdot$ | 91   | 94           | Воу  | 7    | D.E.                  | 92   | 100          |
| Girl  | 8    | $M \cdot M \cdot$         | 128  | 168          | Воу  | 8    | P.E.                  | 127  | 162          |
| Girl  | 9    | R.J.                      | 117  | 152          | Воу  | 9    | R.H.                  | 117  | 146          |
| Girl  | 10   | R.T.                      | 107  | 112          | Воу  | 10   | $M \bullet I \bullet$ | 107  | 121          |
| Girl  | 11   | D.J.                      | 94   | 94           | Воу  | 11   | J.J.                  | 95   | 101          |
| Girl  | 12   | $R \cdot V \cdot P \cdot$ | 122  | 146          | Воу  | 12   | $M \cdot P \cdot$     | 120  | 141          |
| Girl  | 13   | $V \cdot W \cdot$         | 110  | 104          | Воу  | 13   | M.S.                  | 110  | 109          |
| Girl  | 14   | L.W.                      | 111  | 125          | Воу  | 14   | M.A.S.                | 111  | 117          |
| Girl  | 15   | K.W.                      | 106  | 124          | Воу  | 15   | S.W.                  | 106  | 118          |
| Воу   | 16   | S.C.                      | 107  | 101          | Girl | 16   | К.В.                  | 106  | 105          |
| Воу   | 17   | R.T.                      | 105  | 86           | Girl | 17   | S.D.                  | 106  | 96           |
| Воу   | 18   | R.M.                      | 126  | 132          | Girl | 18   | J.S.                  | 127  | 138          |
| Воу   | 19   | M.B.                      | 114  | 121          | Girl | 19   | C.A.                  | 114  | 123          |
| Воу   | 20   | S.D.                      | 137  | 186          | Girl | 20   | P.J.                  | 137  | 180          |
| Воу   | 21   | P.H.                      | 105  | 102          | Girl | 21   | G.P.                  | 106  | 107          |
| Воу   | 22   | S.A.                      | 113  | 136          | Girl | 22   | S.S.                  | 115  | 131          |
| Воу   | 23   | M.E                       | 107  | 112          | Girl | 23   | M.V.S.                | 107  | 118          |
| Воу   | 24   | J.B.                      | 110  | 118          | Girl | 24   | K.V.                  | 112  | 121          |
| Воу   | 25   | D.E.                      | 118  | 145          | Girl | 25   | V.S.                  | 117  | 138          |
| Воу   | 26   | в.С.                      | 112  | 123          | Girl | 26   | S.S.                  | 112  | 117          |