1971

A Comparison Of The Effects Of Teaching A Twelfth Grade Government And Sociology Class In An Environment Saturated With Study Trips And Resourcespeakers With The Effects Of A Traditional Course In Government And Sociology When Both Are Offered In A Voluntary Summer School Program

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A COMPARISON OF THE EFFECTS OF TEACHING A TWELFTH GRADE GOVERNMENT AND SOCIOLOGY CLASS IN AN ENVIRONMENT SATURATED WITH STUDY TRIPS AND RESOURCE SPEAKERS WITH THE EFFECTS OF A TRADITIONAL COURSE IN GOVERNMENT AND SOCIOLOGY WHEN BOTH ARE OFFERED IN A VOLUNTARY SUMMER SCHOOL PROGRAM

A Dissertation Presented to
the University of the Pacific
in Partial Fulfillment of the Degree
Doctor of Education

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by

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April 15, 1971

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Dated April 27, 1971

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CHAPTER I

INTRODUCTION

From the time of John Dewey to the present day, educators have paid extensive lip service to "learning through doing." Often in practice, however, they tend to follow a catechistic process which requires students to memorize materials and to reflect back what they have memorized. In the field of the social sciences, for example, history has traditionally been taught through the memorization of names and by the learning of the chronological order of the dates of historical events. The study of government, in the same manner, has consisted of reading about government rather than observing government in action or in practicing the techniques of government. This dissertation, through the application of an experimental design, sought to compare traditional instruction in government with an innovative approach which took students outside of the classroom and placed them in face-to-face contact with government in action.

High school curricular plans for training for citizenship have often aimed at learning about the processes of government through reading and discussion. An example of such a plan is found in the 1962 California social studies framework which listed seven "goals" for the social studies program:

> Becoming better prepared for the responsibilities of adult citizenship through learning about current and immediate problems of the life of the nation and the adults in it.
>
> Studying thoroughly the government of the United States, its relations with other nations, and important aspects of local and state government.
>
> Realizing the need for citizens to be informed and to participate in political affairs.
>
> Understanding the complexities of social institutions and of economic enterprise.
>
> Learning about the basic contemporary issues facing American society and how these problems touch their own lives.
>
> Recognizing the international aspects of most modern problems.
>
> Realizing the individual's responsibility for high levels of constructive thought and action in the achievement of our national goals and aspirations.[1]

When Horton[2] conducted a nation-wide survey of high school students in 1962, he discovered that there was no significant relationship between the completion of a high school course in civics or government and the attitudes considered to be effective citizenship. Specifically, the students in the study often rejected the tenets of the Bill of Rights and tended to accept the tenets of fascism. Horton con-

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[1] Social Studies Framework for the Public Schools of California (Sacramento: California State Department of Education, 1962), p. 83.

[2] Roy E. Horton, Jr., "American Freedom and the Values of Youth," in Anti-democratic Attitudes in Schools, ed. by H. H. Remmers (Evanston: Northwestern University Press, 1963), pp. 56-9.

cluded that factors outside of the school such as the area of the country, the economic level of the family, or the educational level of the parents were more important in determining one's attitude toward government than were courses in government or civics. He suggested innovative social studies teaching where students would be allowed more participation in realistic problems related to self-government.

More recent attempts to devise a curricular framework such as the one cited above have been made in California. In 1968 a newer document was compiled which tended to shift from studying "about" the discipline of social studies toward learning the process of inquiry. The justification for this approach is given as:

> Though society may change radically, the ways in which men seek to understand it remain much more constant. This means that while students are studying the society, they must be mastering the inquiry-conceptual skills and tools that will equip them to continue learning throughout their lives. Specifically they must master the processes of inquiry which have been developed to study man in society . . . students must also become proficient in using the conceptual tools and the data which social scientists employ as they utilize the process of inquiry. Concepts such as role, region, decision-making, culture, and economic systems are conceptual tools for studying man in society. New concepts will be developed and existing ones may be changed.[3]

The older of the two frameworks clearly follows the tradition of learning about social studies. The newer

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[3]Social Sciences Education Framework for California Public Schools (Proposed): A Report of the Statewide Social Sciences Study Committee to the State Curriculum Commission and the State Board (Sacramento, 1968, duplicated), p.2.

document would involve the student in the social sciences by having him use the tools and data which social scientists employ. Further, the new framework states expected outcomes of instruction in behavioral terms. A few examples from the curriculum suggested for the twelfth grade show how much more specific the newer approach aims to be. Under the heading "Ordinany Citizens Influencing Decisions" the framework lists in part:

> The student should be able to:
>
> Describe the values related to a stated position on a political issue.
>
> Classify political behavior of individuals and groups.
>
> Identify factors underlying public acceptance of products.
>
> Classify political positions of candidates and parties according to constituency characteristics.
>
> Describe appropriate means for individual and group expression on public policy.
>
> Evaluate impact on public opinion of political-economic decisions (taxes, tariffs, currency manipulation).[4]

The folowing samples, taken at random from the same portion of the framework, show how the behavior of students can be stated in a way which lends itself to measurement. All begin with the phrase "The student should be able to:"

> Analyze a political campaign to determine the appeals made to specific socio-economic and ethnic groups in the electorate.

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[4] Ibid., p. 127.

> List the methods of influencing legislative decision makers available to special interest groups.
>
> List the methods available for the executive to influence legislation in state, local, and national government.
>
> List possible consequences of changes in laws on significant social problem areas (in housing, education) in a local community.
>
> Identify the local governmental response in different sections of the country to federal policy decisions on social issues.[5]

In California, where the state legislature had for a decade or more mandated specific programs, a major change took place in the year 1968 with the passage of Senate Bill No. 1. Control of the curriculum was shifted in large measure to local school districts and to their governing boards. The statement of legislative intent which preceded the provisions of the section of this bill on "Educational Program" clearly reflects the current attitude:

> 7502. The Legislature hereby recognizes that, because of the common needs and interests of the citizens of this state and the nation, there is a need to establish a common state curriculum for the public schools, but that, because of economic, geographic, physical, political, and social diversity, there is a need for the development of educational programs at the local level, with the guidance of experienced educators and citizens. Therefore, it is the intent of the Legislature to set broad minimum standards and guidelines for educational programs, and to encourage local districts to develop programs that will best fit the needs and interests of the pupils.[6]

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[5]Ibid., pp. 133-35.

[6]Senate Bill No. 1 (Sacramento: State Printing Plant, State of California, 1968), pp. 58-60.

The Problem for Investigation

Within the Sacramento City Unified School District, Sacramento, California, the social studies program had, until recently, been traditional in nature. Following the pre-Senate Bill No. 1 pattern of ninth grade world history, eleventh grade American history, and twelfth grade government and civics, the students in high school studied about government and about history. Beginning in 1967, when the curriculum department involved teachers in the drafting of new goals for the district's curriculum, the ground work was laid for innovation. For the next decade a problem-centered social science curriculum was envisioned by the teachers which would include many new courses such as "comparative economic systems," "consumer economics," and "current critical issues."[7] Additionally, major changes were planned for existing courses.

One major proposal called for the complete revamping of the senior year of social studies which had, until then, consisted of a traditional course in government and an elective in civics. This proposal utilized an approach which would take students outside of the classroom and into the community to witness at first hand the workings of government and business. Additionally, government and business leaders would be asked to come into the classroom to meet face-to-face with the students and to explain at first hand the workings of their

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[7] Immediate and Short-term Plans for the Curriculum, Instructional Programs, and Special Services (Sacramento City Unified School District, 1967), pp. 120-21.

departments and businesses.

This approach is somewhat similar to an innovative design for civic education suggested by Patterson and McNassor.[8] They outlined a summer school program which would include both class work and participation in the community outside of the school. Development of civic maturity was envisioned as a major outcome of such a course.

The intent of the concentrated summer school program offered in Sacramento was to create a "saturated environment" in which the study of government would become participation in government in action rather than the study about government. The question posed was: Will instruction in government carried out in an environment saturated with study trips and resource speakers prove a more effective method for preparing twelfth grade students for citizenship than is instruction in a traditional government class?

The experimental approach was approved by the school district and was scheduled for implementation during the summer session of 1969 at one high school in Sacramento with enrollment in the course open to any student in the district. This dissertation seeks to investigate the above question through the use of an experimental design to compare the experimental class, taught in a "saturated environment," with a

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[8]Donald McNassor and Franklin Patterson, "New Designs for Civic Education in the High School," in The Adolescent Citizen, ed. by Franklin Patterson (Glencoe, Illinois: The Free Press of Glencoe, 1960), pp. 329-34.

traditional class, both of which were offered during the same summer session in the same attendance areas with open enrollment.

Rationale

When educators conducted a study through the Tufts University Civic Education Center to determine what assumptions are involved in the teaching of social studies, they discovered that the most dominant operating assumption found in American high schools was " . . . that citizenship is learned through the curriculum and subject matter of a prescribed instructional program."[9]

The effects of school instruction, however, may or may not reflect the goals which educators assume they are seeking to reach. In his forward to Volume III of the classic Eight Year Study report William Aiken noted:

> To secure a credit or unit the student must "pass" a course. To pass a course he must remember certain facts and show proficiency in certain skills. Therefore, remembering knowledge and practicing techniques for examinations become the purposes of education for pupils and teachers alike. What goes on the school record becomes the real objective of the student, no matter what the school says its purposes are. If the pupil secures the required credits, he is graduated. The job is done. Concentration on these worth goals seems to make teachers and students forget the larger, long-range purposes of education.[10]

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[9] Ibid., p. 166.

[10] Wilford M. Aiken in Adventure in American Education, Volume III: Appraising and Recording Student Progress. ed. by Eugene R. Smith (New York: Harper and Bros.,1942), p.xvii.

One of the long-range purposes of education in the social sciences has long been education for citizenship in a democracy. In the Sacramento City Unified School District the primary educational goal for development is listed as:

> The primary purposes of the educational program of the Sacramento City Unified School District is to prepare children, youth and adults to reach their fullest potential for a creative and useful life lived in dignity and freedom and that they may become loyal, effective, self-supporting and actively participating American citizens.[11]

Objectives listed in the same document which are to be reached through instruction in the social sciences include:

> Understand that sound local, state or national government is dependent upon the willingness of citizens to assume . . . basic responsibilities.
>
> Recognize that the practical application of our democratic ideals requires time and continuous evaluation, adjustment and effort.
>
> Develop an active interest in current happenings and understand the need to be an informed citizen.
>
> Understand the privileges of citizenship and the responsibilities that accompany these privileges.[12]

The application of an experimental treatment to twelfth grade social studies using a "saturated environment" approach can be considered a success only if it does a better

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[11] Immediate and Short Term Plans, p. 1.

[12] Ibid., p. 54.

job of leading toward such objectives as those stated above than does a traditional class, as measured by changes in the behavior of the students following instruction.

Even if initial changes are noted in an experiment, there is often a leveling off of differences so that in the months following an experiment many of the apparent gains disappear. A study conducted by Alper on the effects of the National Citizenship Test (which was broadcast on television) discovered significant differences between viewers and non-viewers immediately following the telecasting of the program. However, a follow-up study conducted six months later showed that time had erased nearly all of the differences which the investigator had earlier detected.[13]

Additionally, the measuring process itself can influence the outcome of an experiment. Webb and Campbell[14] suggest strategies utilizing unobtrusive measures to overcome the reactive effectives of measurement.

For these reasons the design and procedure chosen for the comparison of treatments in this study were based upon unobtrusive measurement and on the collection of the principal

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[13]Shelton W. Alper, "The Impact of the National Citizenship Test on Expressed Attitudes and Knowledge of High School Students," (Unpublished Ed.D. dissertation, Auburn University, 1967), p. 108.

[14]Eugene J. Webb, Donald T. Campbell, Richard D. Schwartz, and Lee Sechrest, Unobtrusive Measures: Nonreactive Research in the Social Sciences)Chicago: Rand McNally and Co., 1966), pp. 10-21.

data in a period beginning several months following the completion of the experimental class.

Hypotheses for Investigation

The research hypothesized that instruction in government for twelfth grade students taught during a summer session in an environment saturated with extensive study trips and resource speakers would change the citizenship behavior of participants in a positive direction to a degree significantly greater than would instruction in a traditional class taught in a summer session. Further, the following specific areas of citizenship behavior would be expected to improve:

> 1. In-school citizenship would improve significantly as measured by counselor opinion and reflected in reduced disciplinary problems, increased participation in school activities and better daily school attendance.
>
> 2. Behavior outside of school would change in a positive direction as measured by increased participation in the activities of the community.
>
> 3. The attitudes of students following treatment would more closely resemble those of responsible adults than those of students instructed in a traditional class, as measured by an attitude scale.
>
> 4. Statistically significant cognitive gains in the concepts of social studies would be observed in those students in the treatment group, as measured by Sub-test Five of the Iowa Test of Educational Development.[15]

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[15] Iowa Tests of Educational Development, Grades 8-12, Form X-4; Subtest Five (Chicago: Science Research Associates, Incl, 1960), pp.30-39.

Procedure Followed

Control and Experimental Groups

All students who signed up for the special government class were included as the experimental group. Because these students represented three of the district's senior high schools and because each of these schools offered traditional government classes during the same summer period, the control group was formed of all students signing up for the regular government class in these schools.

Design

An analysis of co-variance was selected to compare the experimental and control groups on the cognitive measure. The analysis of co-variance was partitioned into the levels of male and female on the assumption that boys tend to be more politically aware than do girls in senior high school, and consequently might perform at a higher level in an experimental class. This difference is verified by Hess and Torney[16] in a 1965 study where they found that boys acquire political attitudes more rapidly than girls and show more interest in political affairs.

A non-parametric test, the Sign Test, was selected to measure observed changes, positive or negative, in student behavior both in and out of school. The Spearman Rho

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[16]Robert D. Hess and Judith V. Torney. The Development of Basic Attitudes Toward Government and Citizenship During the Elementary School Years (University of Chicago Press, 1965), pp. 173-184.

correlation technique was used to measure the degree of correlation between the attitudes of experimental and control subjects when compared with the attitudes of adult judges on an instrument constructed to measure attitudes toward problems facing society.

Evaluative Instruments

The section of the Iowa Test of Educational Development designed to measure concepts in social studies[17] was selected for the measurement of cognitive gains. The opinions of school counselors were utilized as one method of assessing changes in citizenship behavior. School and district records were examined to provide data on attendance and discipline. A video-taped questionnaire was employed to measure the attitudes of subjects and adults toward problems in society. Students' own evaluations were used to measure changes in participation in activities, both in and out of school.

Definition of Terms

A number of the terms utilized in this dissertation need definition. Following is a list of such terms with their definitions:

> Saturated Environment. An environment for instruction which is saturated with extra-class excursions and with resource speakers so that the learner becomes surrounded with a supportive atmosphere related to the subject studied.
>
> Unobtrusive Measurement. Unobtrusive measurement is measurement made without the knowledge or awareness

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[17] See Supra., p. 11.

of the subjects being measured.[18]

Archives Approach. The archives approach is defined as the researcher's utilization of existing information on file such as pupil progress records, cummulative files, and other records maintained in the school.[19]

Interference Theory. Interference theory is a theory held by early writers such as Thorndike, who held that forgetting, or loss of a portion of learned material, is caused by the interference of other learnings, previous and subsequent to the acquisition of learned material.[20]

Proactive Inhibition. Prior learnings which interfere with the retention of newly learned material.[21]

Retroactive Inhibition. Learnings or experiences between the learning of a specific bit of material and a subsequent time of recall which tend to interfere with the material originally learned.[22]

Order of Chapters

This study is divided into five chapters. Chapter One discusses the problem to be investigated, the rationale used, and the procedures followed. Chapter Two contains a review of the literature related to the problem under investigation. Chapter Three details the procedures followed in the study. Chapter Four reports the results of the evaluative instruments

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[18]Eugene J. Webb, et al., Unobtrusive Measures: Nonreactive Research in the Social Sciences (Chicago: Rand McNally and Co., 1966), pp. 10-21.

[19]Encyclopedia of Educational Research, Fourth Edition. ed. Robert L. Ebel (Toronto: The MacMillan Company, 1969), p. 721

[20]Ibid.

[21]Ibid.

[22]Ibid.

and the statistical procedures used. Chapter Five contains an analysis of the results obtained, a statement of the findings of the study, and recommendations for further investigation.

CHAPTER II

REVIEW OF SELECTED LITERATURE

Introduction

This chapter reviews literature related to the problem under investigation and is organized around the topics of Goals of Social Studies Instruction, Computer Search for Innovative Program, Field Trips and Related Class Activities, Patterns of Instruction in Civics and Government, Attitudes and Attitudinal Change, Differences Among Learners, Unobtrusive Measurement, and Forgetting Curves.

Goals of Social Studies Instruction

Both California and local [Sacramento] district goals for social studies instruction were discussed in Chapter I of this paper.[1] The goals for social studies instruction have long been a topic for discussion on the national level. In 1934 a committee of the American Historical Association published a report listing the following recommendations for curricular goals in the social studies:[2]

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[1]See Supra, pp. 1-5.

[2]Conclusions and Recommendations of the Commission: Report of the Commission on the Social Studies (New York: Charles Scribner's Sons, 1934), pp. 139-40.

1. The program should be derived from the disciplines of geography, economics, sociology, political science and history.

2. Program should give knowledge and understanding concerning the earth as the physical home of man.

3. Program should give knowledge and understanding concerning major social processes historically used by man.

4. Program should cover the evolution of civilization.

5. There should be a detailed study of the evolution of Western civilization--and the unity of Western culture.

6. Program should provide a detailed study of the American people with particular reference to the material conquest of the continent and development of our institutions.

7. Program should provide a realistic study of the institutions and cultures of the major peoples of the contemporary world.

8. The program should provide for a realistic study of the life, institutions and culture of contemporary America.

9. Program should include study of all great philosophies and theories of contemporary man.

10. The younger generation should be introduced to sources of information and to methods of inquiry, scrutiny, criticism, authentication, and verification.

11. Program should not only indoctrinate--should also stimulate intellectual curiosity and sympathy with the growth of avocational as well as practical interests.

Thirty-three years later, when a civic education project team for the National Council for the Social Studies undertook the writing of the current goals for civic education,

many of the goals remained the same, even though stated in terms of a "changing world." The reader will note similarities in the following statements to those of the older document.[3]

1. Knowledge and skills to assist in solving the problems of our times.

2. Awareness of the effects of science on civilization and its use to improve the quality of life.

3. Readiness for effective economic life.

4. Ability to make value judgements for effective life in a changing world.

5. Recognition that we live in an open-ended world which requires receptivity to new facts, new ideas, and new ways of life.

6. Participation in the process of decision-making through expression of views to representatives, experts, and specialists.

7. Belief in both liberty for the individual and equality for all, as guaranteed by the Constitution of the United States.

8. Pride in the achievements of the United States, appreciation of the contributions of other peoples, and support for international peace and cooperation.

9. Use of the creative arts to sensitize oneself to universal human experience and to the uniqueness of the individual.

10. Compassion and sensitivity for the needs, feelings, and aspirations of other human beings.

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[3]Donald W. Robinson, et al., Promising Practices in Civic Education (Washington, D.C.: National Council for the Social Studies, 1967), pp. 16-18.

11. Development of democratic principles and application to daily life.

The overriding goal for civics instruction in high school has often been stated as the development of good citizens for our nation. A typical definition of the good citizen is given by Pitkin[4] as:

> . . . a mature person who has the qualities of emotional development that make him free to think and reason and not to be dominated by purely emotional thrusts. This is the goal toward which educators should strive in the development of the youth of the future. We must help to reassure youngsters that they are growing up; help each to develop an adequate self-image; help each to resist pressures for too much conformity to the peer and other groups; and provide experiences from which young people will gain confidence and recognition that they are being successful as they grow toward adulthood. Our aim is to make them self-reliant and independent.

Computer Search for Innovative Programs

A survey of research concerning innovative programs in civics and government did not reveal another program, past or present, utilizing the "saturated environment" approach reported in this study. A computer search conducted through Datrix, a service of University Microfilms of the Xerox Corporation, did not locate such a study. Key words used in conducting this search were:

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[4]Victor E. Pitkin, "Youth Development and Citizenship," Citizenship and a Free Society: Education for the Future, Thirtieth Yearbook of the National Council for the Social Studies (Washington, D. C.: The National Council for the Social Studies, 1960), pp. 61-62.

INNOVAT*[5] EXPERIMENTAL SUMMER	SOCIAL	STUD* SCIENCE	TRIP EXCURSION VISIT TOUR	SECONDARY HIGH SCHOOL

Field Trips and Related Extra Class Activities

Researchers in education report a more extensive use of the field trip (or study trip) in the elementary than in the secondary segment of the schools. An Elementary and Secondary Education Act, Title I, project in New York during 1967 and 1968 used extensive field trips to enrich the experiences of disadvantaged children in the non-public schools. Through an evaluation conducted by questionnaire, the experimenters of The Institution Center for Urban Education were successful in upgrading the self-images of children.[6]

A similar approach was used in San Francisco in 1965 by the San Francisco Unified School District. Field trips were used to broaden the experiences of Chinese, Negro, and Spanish-speaking children in disadvantaged areas. The experimenters noted increased motivation as well as expanded vocabulary among students participating in the trips. Students began to read in school many words related to the field trips.[7]

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[5]An asterisk following a word stem indicates a search for all words built upon the stem. INNOVAT*, for example, would include innovate, innovative, innovation, etc.

[6]"Educational Field Trips for Disadvantaged Pupils in Non-Public Schools,"[1967-68] (New York: Institution Center for Urban Education, ERIC ED 034-002).

[7]State Compensatory Education Program (San Francisco: San Francisco Unified School District, June 1965, ERIC ED 16-009).

L. W. Yeater reported a highly structured marine science project in Beaufort, North Carolina, where coordination between a marine laboratory and the elementary schools provided not only field trips for students, but also follow-up materials for the teacher to use back in the classroom. In the opinion of teachers and administrators, classroom instruction was enriched by the cooperative effort and field trips served to reinforce the curriculum.[8]

Henry Versnick evaluated the results of the annual Boys' Day Convention and Boys' Day in Detroit as a vehicle for citizenship training for teen-aged boys. Participants responding to a questionnaire constructed by the investigator reported satisfaction with the program, and community and school leaders stated:

> . . . this program seems to meet the following objectives: 1. Developing communication skills and leadership ability; and 2. Developing an appreciation and interest in the governmental process.[9]

Versnick concluded that the activities carried on outside of school in these programs were a valuable adjunct to the curriculum of public and non-public high schools.

J. S. White studied the citizenship program in the secondary schools of Davis County, Utah through the use of a questionnaire to teachers and administrators in the county.

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[8]L. W. Yeater, "A Field Experience--A Why, a How." The Marine Science Project, Beaufort, North Carolina, 1967 (ERIC ED 020-830).

[9]Henry Versnick, "Youth and the Processes of Government," (unpublished Ed.D. Dissertation, Wayne State University, 1967), p. 236.

He found that field trips and the use of community resource speakers improved motivation, but he concluded that the program was entirely too limited in scope to have much impact. He recommended a comprehensive effort to expand field trips and community resource speaking engagements so as to encompass all secondary students.[10]

Most secondary programs in which out-of-class instruction was utilized relied on volunteer participation of students, owing to the problems of scheduling and the expense which would arise when such instruction was scheduled in the traditional school day. For example, Dale L. Brubaker reported on a volunteer program involving bright twelfth-grade students in social studies. Brubaker conducted social studies seminars in the homes of his students in Okemos, Michigan.[11] Reaction among the students, who attended voluntarily to hear civic and business leaders speak, varied according to the individual. Brubaker reported that the seminar approach made "high school teaching more exciting" and that the experiment was worth the time and effort involved.

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[10]J. S. White, "An Appraisal of the Citizenship Education Program in the Secondary Schools of the Davis County School District," (unpublished Ed.D. dissertation, University of Utah, 1963), pp.109-37.

[11]Dale L. Brubaker, "A Social Studies Seminar for Twelfth Grade Students," in Innovation in the Social Studies, ed. by Dale L. Brubaker (New York: Thomas Y. Crowell Co.,1968), pp. 164-65.

Patterns of Instruction in Civics and Government

In a study spanning over one hundred years of instruction in secondary social studies in California, Yonker found that although instruction in these disciplines was fairly uniform throughout the state, the content of the courses centered more around history than it did around other branches of the field. He also discovered that while agreement seemed to exist among teachers and state educational leaders over the courses to be required of college bound students, there was little agreement on what type of social studies offering best prepared a student for life outside of school. Yonker suggested an inquiry based curriculum as opposed to existing patterns based upon memorization of dates, names, and events.[12]

Bereday and Stretch[13] studied comparative patterns of instruction in the U.S.S.R. and in the United States. Their conclusion was that more school time was devoted in Russia toward the political socialization of adolescents than was allotted in the United States. They recommended, however, not an increase of time for American children but a restructuring of curriculum, concluding that a short but

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[12]Thomas Walter Yonker, "The Development of the Social Studies in California Secondary Education, from 1849 to 1964," (unpublished Ed.D. dissertation, Arizona State University, 1967), pp. 107-119.

[13]George Z. F. Bereday and Bonnie B. Stretch, "Political Education in the U.S.A. and the U.S.S.R.," Comparative Education Review, VII (1963), 1-16.

well-organized program presented by an enthusiastic instructor would be effective in civics education.

Coleman[14] concluded as early as 1958 that existing patterns of civics instruction were not effective in the secondary schools where adolescents form their own societies. His findings were based on the results of attitude scales and questionnaires administered to a large sample of high school students. He suggested the involvement of adolescents in actual problems of community, state, and nation utilizing the same competitive spirit found in athletics.

Attitudes and Attitudinal Change

Attitudes and methods for the development and the shifting of attitudes have been the focuses of numerous studies.

A four-year investigation utilizing questionnaires and attitude scales was conducted by Martin Levin among ten high schools in Illinois. He found that family background and political climate of opinion within the high school of attendance were of paramount importance in the development of political attitudes.[15]

Early experiments with attitude change reported

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[14]James S. Coleman, "A Sociologist Suggests New Perspectives," in The Adolescent Citizen, ed. by Franklin Patterson (Glencoe, Illinois: The Free Press of Glencoe, 1960), pp. 288-311.

[15]Martin Louis Levin, "The Political Socialization of Adolescents," (unpublished Ph.D. dissertation, Johns Hopkins University, 1967), pp. 201-203.

significant results with relatively simple procedures for the shifting of student opinion. In 1936, Bateman and Remmers used articles on divorce, social insurance, capital punishment, and labor unions with senior high school students in social studies. Along with the readings, discussions and lectures were used to reinforce the materials read. Using an attitude scale developed for this experiment, they noted:

> These experiments showing that by pre-determined conditioning methods the attitudes of pupils in social science classes can be shifted practically at will carry grave and important educational implications. The social-civic attitudes of high school pupils of today will determine to a very large degree the kind of social and political behavior of the adult citizens of tomorrow. Those charged with the construction of the curricula and especially teachers of the social studies carry a responsibility to a democratic form of government not easily overestimated.[16]

Educators are less naive today in estimating the effects of instruction on adolescents. Patrick Struve discovered that the more involved the adolescent was in ". . .school extra curricular activities, community affairs and political activity, the more politically aware" he would be.[17] Struve

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[16]Richard M. Bateman and H. H. Remmers, "The Relationship of Pupil Attitudes Toward Social Topics Before and After Studying the Subjects," Further Studies in Attitudes, Vol. XXXI of Studies in Higher Education, ed. by H. H. Remmers (Lafayette, Indiana: The Purdue Research Foundation,1936), pp. 27-42

[17]Patrick William Struve, "The Political Socialization of Adolescents: A Study of Students in a Midwestern High School," (unpublished Ph.D. dissertation, University of Iowa, 1964), pp. 175-77.

did not, however, find the same relationship between political awareness and participation in the social studies program.

Attitudes firmly held have been found most difficult to change. Sherif, Sherif, and Nebergall found that an individual's ego involvement in an attitude was related to his ability to hold that attitude in the face of persuasion to change. They found that ". . . susceptibility to change decreases with increased ego involvement in [one's] own stand."[18]

A similar conclusion was reached by Breer and Locke. While moderate success was attained in several experiments reported by these researchers, they noted that not all attitudes are equally subject to change.[19] In fact, the more firmly rooted an attitude, the more resistance there is to change. They theorized that social customs for societies and behavioral patterns for individuals result from experiences. Therefore, experiences [or tasks] might be used as a method for changing attitudes. In those laboratory experiments in which success was realized, Breer and Locke used positive reinforcement [payment to participants] in a study in which they attempted

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[18]Carolyn Sherif, Muzafer Sherif, and Roger E. Nebergall, Attitude and Attitude Change: The Social Judgement-Involvement Approach (Philadelphia: W. B. Saunders Company, 1965), p. 243.

[19]Paul E. Breer and Edwin A. Locke, Task Experience as a Source of Attitudes (Homewood, Illinois: The Dorsey Press, 1965), pp. 249-275.

to change the attitudes of college students toward the acceptance of cooperative, or group, endeavor as opposed to individual effort.[20] By rewarding the individuals who worked together at assigned tasks more highly than they rewarded those who worked as individuals, the researchers found a measureable change in attitude toward the preference for group work in the former group.

Rather than relying entirely on extrinsic rewards, other authorities feel that it is possible for self-motivation to result in a change of attitude. Hodgkinson, for example pointed out:

> . . . people come to overvalue the things for which they have worked hard. It may be that the expenditure of student effort is one of the best motivational techniques available to the teacher who wants students to develop deep and long-lasting interests in a subject.[21]

Coleman in his study of the society of the adolescent counseled:

> If secondary education is to be successful, it must successfully compete with cars and sports and social activities for the adolescent's attention, in an open market. The adolescent is no longer a child, but will spend his energy in the ways he sees fit. It is up to the adult society to so structure secondary education that it captures this energy.[22]

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[20] Ibid., pp. 88-112.

[21] Harold L. Hodgkinson, Education in Social and Cultural Perspectives (Englewood Cliffs, N. J.: Prentice-Hall Inc., 1962), p. 106.

[22] James S. Coleman, The Adolescent Society (Glencoe, Illinois: The Free Press of Glencoe, 1961), p. 157.

The innovative curriculum reported in this study tended more toward the position of Hodgkinson and Coleman than toward the behaviorally oriented approaches of Sherif and Nebergall or of Breer and Locke. If attitudes changed, the cause might be related to the amount of effort expended by each participant, coupled with the stimulation [or motivation] provided by a program saturated with many trips and outside speakers.

Differences Among Learners

Educational research suggests certain sex, ethnic, and economic differences which have been observed among learners. Hess and Torney[23] found that girls and boys view the process of government differently. Boys tend to look at government as an institution, while girls are concerned with the people doing the governing. This makes for a difference in the political socialization of the sexes.

Langton and Jennings[24] found that Negroes were more affected by course content in civics and government than were Caucasian students. They attributed this difference to the probability that less political socialization takes place in Negro homes, generally, and that the school therefore assumes a larger role. A similar relationship was observed

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[23]Robert D. Hess and Judith V. Torney, The Development of Basic Attitudes, pp. 173-184.

[24]Kenneth P. Langton and M. Kent Jennings, "Political Socialization and the High School Curriculum in the United States" (mimeographed, 1967), p. 42.

between high and low socio-economic groups, with the schools playing a somewhat larger role in the political education of students from disadvantaged backgrounds.

Unobtrusive Measurement

In the measurement of either knowledge or of attitudes the effect of the presence of the observer and/or the instrument used for evaluation may cloud the results obtained. For this reason many researchers suggest the use of unobtrusive measures for the collection of data. Webb, Campbell and Schwartz published a comprehensive treatment of such measures in a volume entitled Unobtrusive Measurement.[25] One portion of this work deals at length with the use of archives as a source of information which is totally unobtrusive--that is, the subjects are unaware of the existence of an investigation.[26]

Schools are meticulous record keepers, and a wide variety of information on each student is to be uncovered through an examination of test records, grades, attendance data, and cumulative records.[27]

It is also possible to obtain data on subjects by using a method called "contrived observation."[28] That is, the observer contrives a situation in which the subjects are led to

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[25]Eugene J. Webb, et. al., Unobtrusive Measurement.

[26]Ibid., p. 87.

[27]Attendance records, school mandated achievement tests, and the records kept by counselors were used for data collection in the study reported in this dissertation.

[28]Ibid., p. 152.

believe that they are involved in some other activity than their own measurement.[29]

Strategies for reducing the reactive effect of measurement have been suggested by Campbell and Stanley.[30] They counsel the building into the regular classroom examinations the measures needed for a study, the introduction of different teaching procedures without announcement or explanation, and the use of the regular staff rather than outsiders for the conducting of experiments. For example, "if the Xs [treatments] are variants on usual classroom events occurring at plausible periods in the curriculum calendar, then one-third of the battle is won when these treatments occur without special announcement. If the Os [measurements] are similarly embedded as regular examinations, the second requirement [avoidance of the reactive effects of testing] can be achieved."[31]

Forgetting Curves

The following review of material on forgetting curves aims at the cognitive measurement of subjects rather than at measurement in the affective domain. This limitation is made because the majority of the research in memory and forgetting has been conducted only in the cognitive domain.

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[29]Donald T. Campbell and Julian C. Stanley, Experimental and Quasi-experimental Designs for Research (Chicago: Rand McNally and Co., 1966), pp. 20-21.

[30]Ibid.

[31]Ibid.

When unobtrusive measurements are made one month or more following the learning of material, the question of forgetting becomes important. How much should a student be expected to retain a month after studying a subject? What is the effect of intervening learning upon a prior memory? Does a measurement taken some time after the learning of material chronicle that which is truly retained? Classical studies of forgetting, as well as more recent research into "interference theory," would seem to lend weight to the technique of measuring for permanence in learning one month or more following the completion of a learning task.

One of the earliest researchers in the area of forgetting curves was Hermann Ebbinghaus, who published his first results in 1885.[32] The Ebbinghaus curve of forgetting resulted from his experiments with the learning of nonsense syllables. Using himself as a subject, Ebbinghaus developed a formula for a logrithmical forgetting curve that tends, even today, to be born out in replications with similar materials.[33] He found that it took about eighty percent as long to relearn material after a period of twenty-four days as it did to learn the original material.

Ebbinghaus' findings were confirmed by Radossawlejwitsch and Mageneff and reported in the United States by Thorndike in

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[32]Hermann Ebbinghaus, Memory A Contribution to Experimental Psychology, trans. by Henry A. Ruger and Clara E. Bussenius (New York: Teachers College, Columbia, 1913), p. 76.

[33]Ibid., p. 77.

his classic work Educational Psychology.[34] These early studies agreed that while memory tapered off rapidly in the period immediately following the original period of learning, it remained relatively constant for a considerable period thereafter. After fifteen days, for example, poetry memorized well enough for two successful repetitions took nearly two-thirds as long to re-learn as did material never studied before.[35] At the end of one month and continuing for several months thereafter, the level of learning [or forgetting] remained about constant.

Research from the time of Thorndike to today has included a running argument concerning the interaction [or interference] of other memory traces with a given learning. Writing in the Encyclopedia of Educational Research, Robert Glaser recently summarized the positions taken in this classic argument as:

> A second issue is the interaction of memory elements or traces. This is the focus of the interference theory of forgetting, which hypothesizes that memory retrieval is a function of the interactions between prior learning and new learning. From this point of view, failure of memory is the result of interference. When new learning interferes with the old, the phenomenon is called retroactive inhibition. When prior learning interferes with the learning of new material, it is called proactive inhibition.[36]

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[34]Edward L. Thorndike, Educational Psychology, Vol. II; The Psychology of Learning (New York: Teachers College, Columbia University, 1926), p. 309.

[35]Ibid., p. 304.

[36]Robert Glaser in Encyclopedia of Educational Research [Fourth Edition], ed. by Robert L. Ebel (Toronto: the MacMillan Company, 1969), p. 721.

While much of the early research on the interference theory of forgetting was focused upon retroactive inhibition, more recent research tends to support the importance of proactive inhibition as a factor in forgetting, stressing the idea that an important factor previously overlooked is prior learning habits. Underwood reviewed this facet of forgetting theory in the Yearbook of the National Society for the Study of Education:

> The reason for the switch [to proactive inhibition] comes not only from laboratory data, which show the heavy influence of proactive inhibition, but also from a consideration of the logic of the situation. . . Assume that a student, ten years of age, learns a given task and the retention of this task is tested one month later. The fact that proactive inhibition is assigned a major role in causing forgetting is based on the assumption that, during the first ten years of the student's life, he will have acquired more habits that will interfere with the task to be recalled than he will acquire during the one-month interval between the learning and the retention test.[37]

Underwood concludes that fears over retroactive inhibition are grossly overdrawn and that one would be able to conduct meaningful measurements following an experiment with no more concern for retroactive inhibition than for the inhibitory habits the subjects brought with them to the treatment sessions.

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[37]Benton J. Underwood, "Laboratory Studies of Verbal Learning," in Theories of Learning and Instruction, Sixty-third Yearbook of the National Society for the Study of Education, Part I (Chicago: The University of Chicago Press, 1964), pp. 146-47.

CHAPTER III

PROCEDURE FOR CONDUCTING STUDY

The Experimental Course

During the summer session, 1969, a special course for twelfth grade students was offered at the C. K. Mc Clatchy Senior High School, Sacramento, California, under the title, "Government in Action: Sociology." Enrollment was open to any student residing in the Sacramento City Unified School District who had completed the equivalent of the eleventh grade. Credit toward graduation (ten semester credits) was given, which was equal to the credit which would have been earned for completing the traditional twelfth grade combination of the two separate courses of government and sociology.

Students enrolled in the class were introduced to the same textual materials as were the students in the traditional courses and were required to take the same tests covering the cognitive learnings in the course which were given to a somewhat larger group of students who elected the traditional combination of government and sociology classes during the same summer period. The primary difference between the special class and the regular group was the commitment to time and travel in excess of that required in the regular courses. The experimental class extended the four-hour day to include afternoon and evening meetings, all-day field trips on regular class

days, and trips on Saturdays.[1]

Four teachers were assigned to the experimental project when pre-enrollment figures disclosed over one hundred and twenty-five students registering. The C. K. Mc Clatchy Senior High School center was chosen as the location for several reasons: (1) this school was accessable via public transportation to the largest majority of the students requesting the course; (2) it offered the daily use of several large facilities---a little theater seating one hundred and fifty people and a large auditorium--as well as a number of classrooms immediately adjacent to these facilities; and (3) the largest single group of students requesting the experimental course resided in the normal attendance area of this school.

The summer school program was scheduled for thirty-eight school days; however, the students in the experimental class made a total of fifty-one separate study trips during this short period of time, sometimes making as many as four trips during one day when local facilities were visited. At school, students listened to outside speakers who brought their ideas to the participants both in large-group lecture sessions and in small-group informal discussions.[2]

Students performed group and individual research

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[1]The regular class day in the summer school program for ten credits was four hours. The subjects in the control group attended school four hours per day.

[2]See Appendix I for a schedule of study trips and guest speakers.

projects and kept journals of their work.[3] Seminar reports were utilized as a vehicle for learning. Courtrooms became classrooms in which judges and courtroom aides lectured, visited with students, and received questions informally. Later, students viewed the same courtrooms in action with trials in progress. California State Highway Division personnel met with students to explain the operation of their department. Following classroom discussions, they took the students on a bus tour to observe the actual field construction of some of the projects they had outlined in class. Similar sessions and tours were held with the representatives of the Federal Bureau of Reclamation.

Experiences were divided between the disciplines of government and sociology, but the two areas were intertwined throughout the course so that the effect was as one whole rather than as two separate courses. Local, state, and federal public agencies, as well as private businesses, provided guest speakers and sponsored guided study trips.

Four school buses were assigned to the project for the entire summer session, together with four drivers available full time. Trips could be easily arranged to any location in Northern California. The class traveled to the Bay Area and to various federal and state installations within a one hundred and fifty mile radius of Sacramento. One trip was scheduled as far South as Fresno, California, to meet with civic

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[3]See Appendix II for samples of student projects and reports.

officials and learn how that city organized and carried out its project for a downtown shopping mall. (A similar project was in the planning stages in Sacramento.) The trip to Fresno is a good example of the type of acceptance given the class by participating agencies. Both city and county officials took time from their busy schedules (see Figure 1) to explain community problems and projects to these high school students.

Through trips to local and to out-of-town agencies and through guest lecturers, films, and special projects, the students in the experimental class were totally saturated in the on-going work of government and society throughout the summer of 1969.

Design of the Research

To evaluate the experimental class Government in Action: Sociology it was decided to use a combination of a number of statistical measures involving comparisons of the results obtained in the special class and those which might be expected in a traditional program offering the separate courses of government and sociology. Because the program was scheduled during a summer session, a comparison group was selected which included only students enrolled during the same calendar period. Both groups, experimental and control, included students enrolled in each of three high schools reported in the study.

FIGURE 1

SCHEDULE OF ACTIVITIES PREPARED BY THE CITY AND COUNTY OF FRESNO, CALIFORNIA, FOR THE CLASS GOVERNMENT IN ACTION: SOCIOLOGY ON AUGUST 6, 1969

10:00 Arrive at Pine Grove, Roeding Park (picnic area)

10:00-10:30 Fresno County officials' presentations (Wes Craven, Chairman, Board of Supervisors--welcome)

Phil Sanchez--County Government
County Administrative Officer

R. E. Bergstrom--Air Pollution
Director of Environmental Services

Reed Clegg--Welfare
Director of Welfare

William C. Daly--Law Enforcement
District Attorney

Gerald Gard--Taxes
County Assessor

10:30-10:55 Questions and Answers

10:55-11:05 Break

11:05-11:35 Fresno City, Redevelopment and Downtown Officials' presentations (Mayor Wills--welcome)

Neil Goedhard--City Government
Chief Administrative Officer

Tom Hoxie--Downtown Business and Rejuvenation
Executive Director, Downtown Association

Alan Kingston--Redevelopment Agency Activities
Executive Director, Redevelopment Agency

Bob Shoettler--Convention Industry
Manager, Convention Center

John Behrens--City Planning
Director, Planning and Inspection

11:35-12:50 Questions and Answers, Lunch

12:50-3:00 Bus tours--Mall, Convention Center, Downtown Area (Departure at 3:00 for Sacramento)

Experimental Group

With the exception of two students [who are not included in this study], all subjects in the experimental class Government in Action: Sociology were drawn from the attendance areas of three of the district's five senior high schools (see Table 1). The experimental group constituted the total population completing the special class.

TABLE 1

ATTENDANCE AREAS FOR SUBJECTS IN EXPERIMENTAL AND CONTROL GROUPS

Group	Mc Clatchy High School		Kennedy High School		Burbank High School		Total
	No.	%	No.	%	No.	%	
Experimental	40	55	16	22	17	23	73
Control	16	15	29	26	64	59	109
Total in Study	56	31	45	25	81	44	182

While the program was opened to all students within the school district, Sacramento patterns of bus transportation made attendance from two schools less convenient than it was at the school housing the program: for this reason, the majority of students in the experimental group were drawn from the attendance of Mc Clatchy High School. Kennedy and Burbank high schools were included in the study because each contributed twenty or more percent of the population of the experimental class.

Initial enrollment for the special class totaled one hundred and forty. Of these, one hundred and nineteen completed the class (see Table 2). The number of subjects who

were included in the final measurement was again reduced because of the nature of the data collection process. Namely, the use of unobtrusive measurement, which relied on existing school records, resulted in incomplete data on certain of the subjects. Only those subjects for whom all measures were available were included in this study. When all measures were completed, the group numbered seventy-three, including thirty boys and forty-three girls, and represented ethnic backgrounds as follows: Black and Mexican-American combined, four; Caucasian, forty-two; and Oriental, twenty-seven (see Figure 2).

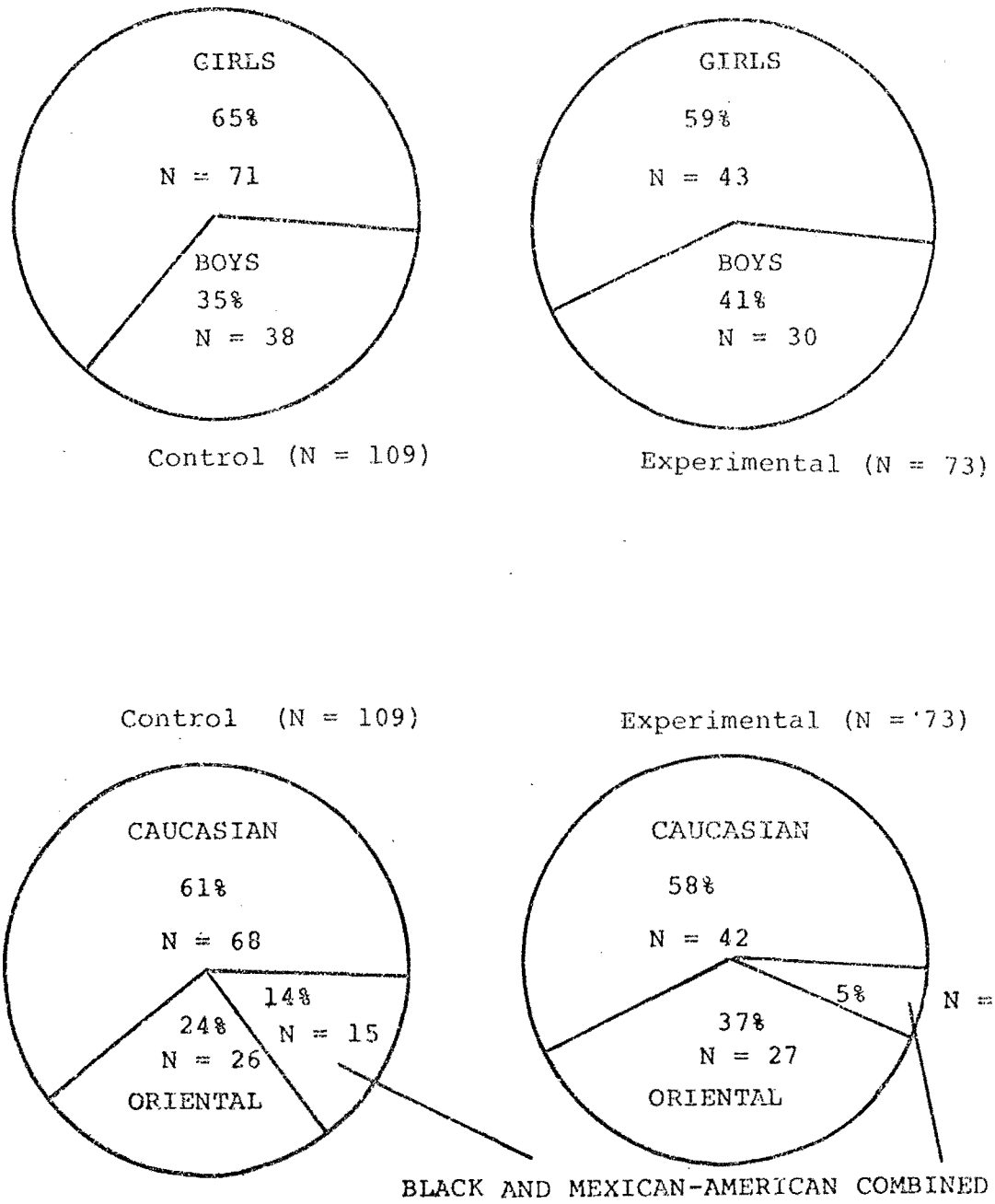
TABLE 2

SUBJECTS IN EXPERIMENTAL AND CONTROL GROUPS AT PRE-ENROLLMENT, AT COMPLETION OF THE SUMMER SESSION, AND AT THE COMPLETION OF EVALUATION

Group	Period Included	Mc Clatchy H. S.	Kennedy H. S.	Burbank H. S.	Total
Experimental	Pre-enrollment	76	42	22	140
	End of Session	69	31	19	119
	Evaluation	40	16	17	73
Control	Pre-enrollment	57	48	117	222
	End of Session	42	39	97	178
	Evaluation	16	29	64	109

FIGURE 2

DISTRIBUTION OF STUDENTS WITHIN CONTROL AND EXPERIMENTAL GROUPS ACCORDING TO SEX AND TO ETHNIC ORIGIN



Comparison Group

The control group included the total population of students enrolling for the two courses government and sociology in the three high schools from whose attendance areas the experimental group was drawn (see Table 1). Initially the control group included two hundred and twenty-two students, one hundred and seventy-eight of whom completed both courses. At the time of measurement the group contained one hundred and nine students including thirty-eight boys and seventy-one girls with an ethnic distribution as follows: Black and Mexican-American combined, fifteen; Caucasian, sixty-eight; and Oriental, twenty-six (see Figure 2).

Problems Encountered in Conducting Study

Because it was not possible to conduct the experimental class under laboratory conditions, two problems were encountered in its evaluation. These were (1) the possible effects of self-selection on the part of the subjects and (2) the difficulty of isolating all of the variables in so complex a program as the experimental course.

Self-Selection

The program was theoretically open to each student residing within the Sacramento City Unified School District. In practice, however, any enrollment procedure short of assigning individual subjects to treatment groups results in a degree of self-selection. The sample used was what Helmstadter calls a sample of convenience. Regarding this,

Helmstadter notes:[4]

> In reality, using a sample of convenience is often the only alternative the researcher has. Under these circumstances the careful worker will describe his sample as precisely as possible with respect to as many relevant characteristics as he can think of so that others who read the report of his study can, perhaps, visualize a population of which this sample might be representative, or at least they can determine whether the group to which they had hoped to generalize the results of the study differs in specific ways from the sample which was used.

Assuming that self-selection was in fact operating in the students' choosing either the experimental or the control groups, what were the characteristics of each?

Schools of Regular Attendance

The greatest proportion of the experimental subjects came from the normal attendance area of Mc Clatchy High School (see Table 1), and constituted fifty-five percent of the total enrollment of that group. Burbank High School supplied more than two-thirds of the subjects in the control group. Taken together, Mc Clatchy and Kennedy High Schools accounted for seventy-seven percent of the experimental group.

Mc Clatchy is the oldest of the three schools and lies in what was, twenty years ago, the most affluent portion of Sacramento's residential area. Kennedy High School, opened

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[4]G. C. Helmstadter, Research Concepts in Human Behavior: Education, Psychology, Sociology (New York: Appleton-Century-Crofts, 1970), p. 327.

in 1967, lies south of the Mc Clatchy High School and is within the area of the most recently constructed group of new homes within the city limits of Sacramento. A new and exclusive subdivision had just recently opened at the time this study was conducted, but only a small portion of the project [within the Kennedy attendance area] was then occupied. The total enrollment at Kennedy High School was about sixty percent of that of either of the other schools in the study. Its student body was created through combining portions of the previous attendance areas of Burbank and Mc Clatchy High Schools. Burbank High School also lies in a newer portion of southern Sacramento and this school was opened in 1962.

Data concerning the economic status of each school's attendance area is contained in a report prepared for the California Division of Highways in 1968.[5] This report, collected to provide information for use in freeway planning, showed the median family income for homes in the Burbank High School area to be $9,456.28. The median family income in the combined student population areas of Mc Clatchy and Kennedy High Schools was $9,383.83, with Mc Clatchy's somewhat lower than Burbank's at $8,036.21 and Kennedy's somewhat higher at $10,851.13.

Access to Experimental Class

Subjects in the Mc Clatchy and Kennedy attendance areas had direct bus connections to Mc Clatchy High School.

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[5] Regional and County Projections, Sacramento Regional Area [Part II] (Palo Alto: Optimum Systems, Inc., 1970), (mimeographed).

There was, at the time the experimental class was offered, no bus service to approximately half of the pupils residing in the attendance area of Burbank High School. [Part of the attendance area for Burbank lies outside of the incorporated city of Sacramento, and the city's bus service is not chartered for operation in county areas.] Those students residing in the portion of the Burbank attendance area which had bus service would have had to catch a bus at 6:40 a.m. each morning in order to reach Mc Clatchy High School in time for the experimental class, which began at 8:00 a.m. Return service in the middle or toward the end of the day was equally cumbersome. This may explain why the majority of students at Burbank who attended summer school chose their own plant, even though many courses were open in other high school in the district. Consequently, two-thirds of the control group were students from Burbank High School, constituting what might be considered a representative sample of that school's summer session population.

Similarly, those students from Mc Clatchy in the experimental class--approximately two-thirds of the pupils in the experimental group--might be considered representative of that student body.

A reverse direction was observed at Kennedy High School with one-third enrolling in the experimental and two-thirds in the control groups. In short, the experimental group consisted in largest part of students from Mc Clatchy High School and the control group contained a majority of

students from the other two schools. Since regular classes in government and sociology were also offered in each of the three schools, it would appear that the majority of pupils in each school found it more convenient to attend the classes nearest to their homes.

Ethnic Make-up of the Population

For the purposes of this study, three ethnic groups were identified as follows:[6] (1) Caucasian pupils; (2) Black and Mexican-American pupils combined; and (3) Oriental pupils (see Table 3). These three sub-groups were differently distributed in the summer school classes than in the general

TABLE 3

ETHNIC MAKE-UP OF SUMMER CLASSES IN GOVERNMENT COMPARED TO ETHNIC DISTRIBUTION IN REGULAR SCHOOL YEAR

	Experimental	Control	Regular Year
Caucasian Pupils	58%	61%	71%
Black and Mexican-American Pupils	5%	15%	17%
Oriental Pupils	37%	24%	12%

population. These data indicate the following shifts from the ethnic distribution found during the regular school year: (1) approximately one-third as many Black and Mexican-American students enrolled in the experimental as might have been expected, but approximately the same percentage of these ethnic

[6]Black and Mexican-American students were grouped together in order to create a managable group for statistical analysis and because of their similar degrees of economic disadvantagement in the community.

sub-groups elected the control class as were observed in the school population during the regular school year; (2) three times as many Orientals as would be expected enrolled in the experimental group and twice as many in the control group; and (3) the total number of Caucasian participants remained predominant in both groups, but represented a drop of about fifteen percent over the regular year's Caucasian enrollment for the aggregate of the three high schools.

The high percentage of Oriental subjects might be explained by the fact that a disproportionate number of their ethnic sub-group normally attend summer school each year. The even higher proportion of Oriental subjects at Mc Clatchy High School is in keeping with the fact that a larger proportion of that school's student body during the normal school year is Oriental than is the case for either of the other two schools.

In both groups, the proportion of Caucasian pupils is still very close to that found at Mc Clatchy during a regular school year. The reason for the drop in the number of Black and Mexican-American subjects in the experimental class from their number observed during a regular school year is not as obvious. These two sub-groups constitute approximately fifteen percent of all students enrolling in summer school. Apparently the type of activity offered in the "saturated environment" did not appeal as directly to these sub-groups as it did to either the Caucasian or the Oriental students who enrolled for government and sociology in the summer session of 1969.

Intelligence and Achievement Data

Pupils from both the experimental and the control groups appeared to be above average in ability. When the Lorge-Thorndike Intelligence Test[7] was administered to all pupils in the school district in grade twelve during the semester following the treatment, the subjects from the control group achieved a mean I.Q. score of 106 and the subjects in the experimental group achieved a mean I.Q. score of 109. The average grade received by the subjects in both the experimental and the control groups in the required eleventh grade course in United States History [taken during the semester preceding the treatment] was the same, B-.

Use of Covariance

To overcome possible effects of self-selection by subjects, covariance was used in analyzing the cognitive measurement to statistically adjust for the lack of random assignment. Helmstadter describes this procedure as:[8]

> When matching is not possible and randomization has not eliminated relevant subject differences, the researcher can employ statistical control. Actually, statistical control does not involve holding variables constant or obtaining equivalent groups, but rather making a statistical adjustment on the final observations to account for any measured lack of initial equivalence . . .

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[7]Irving Lorge and Robert L. Thorndike, The Lorge-Thorndike Intelligence Tests, Level G (Boston: Houghton Mifflin Company, 1957).

[8]G. C. Helmstadter, Research Concepts, p. 115.

> If a measure of past accomplishment is available and it is related to future performance, then, by means of an analysis of covariance, it is possible to determine how many of the differences in the final performance would be expected because of the initial differences in achievement and to make an appropriate adjustment. When interpreting results, only differences larger than those to be expected on the basis of initial differences would be considered.

Grades in U. S. History (an eleventh grade class) were used as a covariant to adjust for initial differences in the analysis of the cognitive measurement.

Accounting for Ethnic Differences

Ethnic differences were considered in two of the measures employed in this study. First, the cognitive analysis was run by total group and again by ethnic sub-groups. Second, the television test of attitudes toward problems in society was structured so as to compare ethnic sub-groups with adult judges as well as ethnic sub-groups within the experimental and control sections.

Multiple Variables in a Saturated Environment

The nature of the special course, which greatly extended study time, utilized team teaching, brought in outside speakers, and took subjects on a wide variety of study trips, made it difficult to ascertain which factor (or factors) could be held accountable for any changes which might occur. Consequently, the program was viewed as one "package" with each piece interlocked with all others within the experimental curriculum. The term saturated environment was coined to

describe this complex arrangement. The concept underlying the new curriculum was that steeping a student in the on-going processes of government and business at the local, county, and state levels might achieve citizenship changes in pupils which traditional classes had not been able to affect.

Cost of the Special Class

The instruction of secondary students during a summer session in California is generally less than the cost of instructing students during a regular school year. If fixed costs for buildings, administration, supplies, and utilities are considered to remain about constant for the year, whether regular session or summer session, then a comparison of the cost of teacher salary per student instructed may provide a rough yardstick for comparing regular session with summer session instructional costs. In Sacramento the average teacher salary behind each secondary student for a ten credit (two Carnegie Unit) course during the regular school year was approximately $80.00 [for the school year 1968-69].[9] The cost per student for teacher salary for the experimental summer program, however, amounted to only $28.43.[10] When the extra costs of this program [transportation was the only cost for the program which was in excess of that for any other summer class] was added to the instructional cost, the total amount spent

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[9]The figure of $80.00 was arrived at by dividing the annual salary of a classroom teacher by the number of students assigned a teacher, then by taking twenty percent of that quotient as the amount chargeable for the summer class.

[10]Total salary paid to teachers divided by number of students enrolled.

per student for salary and transportation was $58.15.[11] The major difference in the cost of instruction (teacher salary) between the regular year and the summer program results from the policy of paying teachers a per-session (or hourly) rate [$7.50 during 1969] for worked performed outside of their regular contract year.

Hypotheses to be Tested

Major Hypotheses

The following major hypotheses were formulated for testing in the experiment:

> A. Students exposed to a saturated environment for the study of government and sociology will respond to an instrument designed for measuring attitudes toward basic problems in society with choices which more closely resemble those made by a panel of responsible adults in the community than will students taking a traditional course in government, even when the instrument is administered as much as one semester following the completion of the treatment.
>
> B. Students exposed to a saturated environment for the study of government and sociology will evidence a significant change in participation in both school and community activities following the treatment while students who take a traditional course in government and sociology will not change significantly. Further, the direction of the change in behavior observed in subjects in the treatment group will be toward increased participation in one or both areas.
>
> C. Students exposed to a saturated environment for the study of government and sociology will be rated by their counselors as having improved in citizenship following the treatment while no such change will be noted by the counselors of students in the control group.

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[11]The amount allotted for transportation divided by the number of students with the sum added to the teacher salary cost per student. (Transportation cost = $29.72 per student.)

D. Students exposed to a saturated environment for the study of government and sociology will exhibit improved citizenship in school following the treatment by maintaining a better attendance record than before the treatment, while no such change will be noted in students within the control group.

E. Students exposed to a saturated environment for the study of government and sociology will have fewer discipline referrals following the treatment than in the period immediately preceding the experiment, while no such change will be observed in students within the control group.

F. Students exposed to a saturated environment for the study of government and sociology will have fewer suspensions from school for any reason following the treatment than in the period preceding the experiment, while no such change will be observed in the control group.

G. Students exposed to a saturated environment, such as that provided in the experiment, will score significantly higher on a nationally standardized cognitive test of social studies concepts than will students who take the more traditional courses when measurement is made ten or more weeks following the end of the treatment period.

Minor Hypotheses

In addition to the above major hypotheses several supplemental hypotheses were formulated in an attempt to ascertain any effects of ethnic groupings within the experimental and the control groups. These hypotheses were:

A.1. Black and Mexican-American students instructed in government and sociology under conditions of a saturated environment will respond to an instrument designed for measuring attitudes toward basic problems in our society with choices which more closely resemble those made by a panel of responsible adult judges of differing ethnic backgrounds and to a panel of responsible adult judges of similar ethnic origin than will a group of Black and Mexican-American students taking a traditional course in government and sociology.

A.2. Caucasian students instructed in government and sociology under conditions of a saturated environment will respond to an instrument designed for measuring attitudes toward basic problems in our society with choices which more closely resemble those made by a panel of responsible adult judges of differing ethnic backgrounds and to a panel composed of responsible adult judges of the same ethnic group than will a group of Caucasian students taking a traditional course in government and sociology.

A.3. Oriental students instructed in government and sociology under conditions of a saturated environment will respond to an instrument designed to measure attitudes toward basic problems in our society with choices which more closely resemble those made by a panel of responsible adult judges from differing ethnic backgrounds than will a group of Oriental students who take a traditional course in government and sociology.

G.1. Girls instructed in government and sociology in either a saturated or a traditional environment will score significantly higher on a nationally standardized cognitive test of social studies concepts than will boys instructed by either method.

G.2. There will be a significant interaction between treatment and sex when government and sociology are taught under conditions of a saturated environment and a traditional environment, with boys achieving at a higher level in a saturated environment and girls at a higher level in a traditional class.

G.3. Black and Mexican-American students instructed in government and sociology under conditions of a saturated environment will score significantly higher on a nationally standardized cognitive test of social studies concepts than will Black and Mexican-American students who take a traditional course in government and sociology.

G.4. Caucasian students instructed in government and sociology under conditions of a saturated environment will score significantly higher on a nationally standardized cognitive test of social studies concepts than will Caucasian students who take a traditional course in government and sociology.

G.5. Oriental students instructed in government and sociology under conditions of a saturated environment will score significantly higher on a nationally standardized cognitive test of social studies concepts than will Oriental students who take a traditional course in government and sociology.

Methods for Evaluating the Experiment

A number of different measures were selected for the evaluation of the effects of the course in government and sociology taught in a saturated environment.

Measurement of Cognitive Gains in Social Studies

Section Five of the Iowa Test of Educational Development, "Reading in the Social Studies,"[12] was selected as an instrument for the measurement of cognitive gains resulting from the treatment. This instrument was administered to all students in the twelfth grade within the Sacramento City Unified School District during the months of November and December, 1969. It qualifies as an unobtrusive measure[13] because no student taking this test had any cause to connect it to an individual class or program. The results of this instrument were obtained through central data processing equipment; no contact was made directly with either the student

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[12] Iowa Tests of Educational Development, pp. 30-39.

[13] The use of the ITED in this manner would be in the realm of what Webb calls "false pretenses" or "contrived observation" (see Supra, p.29). The student is told that he is taking a standardized test for district evaluation; however, the purpose of this test for the researcher in this study is to measure that student's progress only in the area of the experimental treatment, social studies.

or the school. The manual for interpreting the results of Test Number Five of the ITED states:[14]

> This test is concerned with the student's ability to interpret and evaluate representative reading selections taken from social studies textbooks and references, from magazine and newspaper articles on social problems, and from the literature of the social studies in general. The student cannot obtain a high score merely by assimilating the ideas presented in the passages. Rather, he must evidence the ability to "read between the lines," to see the implication of the ideas presented, and to evaluate the author's approach and handling of the topic.

Interpretation and evaluation are cognitive skills higher than knowledge; for this reason the instrument selected is a good one for the evaluation of an innovative program.

Measurement of Affective Gains

For the measurement of attitudinal shifts and similar signs of changes in affective behavior a number of different devices and methods were employed.

Attitudes Toward Issues in Society

To ascertain whether the treatment had produced any lasting changes in behavior, an unique instrument was designed utilizing commercial television programs bearing on societal issues. A segment of video tape was compiled with seven different episodes as follows: (1) a popular comedian's routine

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[14] ITED the Iowa Tests of Educational Development: How to Use the Test Results--a Manual for Teachers and Counselors (Chicago: Science Research Associates, Inc., 1962), p. 20.

concerning air traffic controllers and their important role in aviation and public safety; (2) a brief segment from a year's end television summary of news events with various stated positions of prominent newscasters giving their predictions of important events to occur in the up-coming decade of the seventies; (3) a comedy duo's treatment of the topic of funerals and the high cost of burial; (4) a newscast in which a California legislator advocates a particular action concerning the issue of drug abuse; (5) a short spoof of television commercials done by a well known commedienne; (6) an excerpt from a year's end news discussion program on the subject of air pollution and the chances for its control; and (7) a portion of a nationally known Black comedian's presentation to a somewhat difficult audience in the deep South. To accompany the tape, which was twenty-five minutes in length, a series of statements was prepared on cards concerning each episode. There were nine possible reactions available to each participant, and he was instructed to arrange these into a forced distribution of five categories, creating a type of synthetic curve (see Appendix III). This procedure is similar to an attitude measurement used by Nordstrom, Friedenberg and Gold in their study of ressentiment.[15] While these researchers classified their technique as a Q-sort, the actual procedure is more in the order of a forced-choice questionnaire.

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[15]Carl Nordstrom, Edgar Z. Friedenberg, and Hilary A. Gold, Society's Children: A Study of Ressentiment in the Secondary School (New York: Random House, 1967), pp. 173-98.

So that this instrument might qualify as an unobtrusive measure, a technique was employed to create a sort of smoke screen effect. Students who were shown the tape--all those in both the control and experimental groups in this study--were notified through their school principals that they had been selected at random to participate in a school district study designed to survey the attitudes of graduating seniors toward the new decade of the seventies. They were called in, school by school, in two different testing sessions, each with a liberal mix of control and experimental subjects. There was no indication that any student was aware of the true purpose of the video taped sessions. The segment on tape showing newsmen's predictions of upcoming events of the seventies set the stage for this procedure.

The same video tape was shown to a group of responsible adults who made the same "sorts" of the cards into five categories. The individuals making up the adult jury included the following citizens: a high school social studies department chairman, a teaching Sister in a Catholic elementary school, a radio talk show personality, a retired superintendent of a community college district, a senior high school principal, a protestant clergyman, an elementary school principal, two members of the school district's Intergroup Relations office, and a Black ethnic studies instructor at a local community college. This group of nine adults included representatives from three ethnic groups: two were Black, two were of Mexican-American backgrounds and the others were

Caucasian. The age span of the group was from the early thirties to over retirement age.[16]

Participation in Activities

A short questionnaire was developed to obtain data concerning activities both in and outside of school (see Appendix III). This questionnaire was administered at the same time as the video taped episodes were viewed and was given as a companion instrument to that activity. Consequently, the instrument qualifies as an unobtrusive measure. It was not possible for the subjects to make a connection between this questionnaire and the experimental course under investigation.

Counselor Appraisal of Citizenship

Each subject's counselor was asked to comment concerning that subject's in-school citizenship. Specifically he was asked to determine whether the subject had improved, regressed, or remained the same in his citizenship in the semester following the treatment as compared to his citizenship in the semester preceding enrollment in the class. Each counselor was provided a list of students in alphabetical order (see Appendix III), mixed with both control and experimental subjects, and was instructed not to reveal to any student that he was making an evaluation. The type of study was not identified, nor was there any identification provided on

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[16]Several Orientals were originally scheduled to be judges; however, these individuals did not find it possible to participate when the final project schedule was completed.

which might be experimental and which control subjects.

Evaluation of Attendance Records

The attendance record for each subject was obtained for the year preceding and the year following the treatment. This information was taken from central office records on a data-processed attendance system. A comparison of total days of absence for any reason was recorded for each student on each of the attendance years and positive and negative changes were computed.

Evaluation of Discipline Referrals

Through individual contacts with the vice principals in charge of discipline at each of the schools, information was compiled concerning the number of times students were referred to the school office for disciplinary action in the semester preceding and the semester following the treatment. Referrals for any reason were counted. Again, no student was aware of the compilation of this data.

Evaluation of Suspension Records

A record of any suspension from school for a pupil in the project was obtained through an interview with the school district's hearing officer. This official maintains a file of all suspensions issued within the school district, whatever the reason.

In each of the above cases it was possible to obtain necessary data, either through the use of "archives" or by the use of "contrived observation" without the subjects'

becoming aware that they were being evaluated for the effects of the treatment.[17] Consequently, all the instruments and data collection devices utilized in this study qualify as unobtrusive measures.

Statistical Procedures Used

A number of different statistical procedures were selected for the evaluation of the data in the study. In general, parametric statistics were utilized for the interpretation of cognitive measures and non-paramentric statistics were utilized in the evaluation of data obtained on affective measures. A confidence level of .01 was selected as an indication of significance for parametric tests, with the level of .05 considered an indication of the need for further study. Non-parametric tests were considered significant at the .05 level of confidence and the level of .20 was selected on non-parametric measures as an indication of the need for further study. Kerlinger points out that, "A level of statistical significance is to some extent chosen arbitrarily," and that, "The .05 and .01 levels correspond fairly well to two and three standard deviations from the mean of a normal probability distribution."[18]

The writer's rationale for setting the above levels of significance was the relative power-efficiency of parametric

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[17] See Supra, p. 29.

[18] Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1965), p. 154.

and non-parametric tests. Siegal rates the Sign Test, one of the non parametric measures used in this study, as between sixty-three and ninety-five percent as powerful as a parametric test.[19] Sample size is the determining factor. The Spearman rank correlation technique, another of the non-parametric measures used in this study, is considered to be approximately ninety-one percent as powerful as is the parametric Pearson r.[20]

Statistical Procedures for Cognitive Measure

A parametric test of covariance was selected to compare the results obtained through Sub-test Five of the ITED[21] [Reading in the Social Studies]. Covariance is recommended by Kerlinger for use in an educational experiment where selection constitutes a problem and where random assignment of individuals is not feasible. Kerlinger writes:[22]

> This type of experiment has certain decided advantages. One is that measures of intelligence and achievement usually exist before the experiment starts. Thus they can be used without the sensitization dangers of

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[19] Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, 1956), p. 75.

[20] Ibid., p. 213.

[21] See Merle W. Tate, Statistics in Education (New York: The McMillan Company, 1955), pp. 515-522, for a discussion of covariance.

[22] Fred N. Kerlinger, Foundations of Behavioral Research, p. 350.

> pretests; an experiment can also be run without the students' knowing that they are being tested. Closely allied to this is the advantage of experiments done in natural settings . . . still another advantage is the precision of the analysis and the information it can yield.

The score obtained from the social studies test was covaried with a weighted combination of subject matter grades received by students in the eleventh grade required course in United States History. The rationale for using grades in history as a covariant was that the grade in history constituted the most recent appraisal of students' performance in the social studies area. Another reason for this choice was that many of the topics in a government class are really extensions of topics covered in the history course. The covariance formula was applied to the following groups for conducting the cognitive comparisons: (1) total comparison of members of control versus experimental groups; (2) comparison of control and experimental subjects who came from a Black or a Mexican-American ethnic background; (3) comparison of experimental and control subjects who came from an Oriental ethnic background; and (4) comparison of experimental and control subjects who came from a Caucasian background. [Figure 3 shows a paradigm of the design used in running the analyses.]

The factor of intelligence was controlled by excluding from the study all subjects who scored above or below two standard deviations from the mean of an intelligence test which was administered to the subjects in the fall

FIGURE 3

PARADIGM OF THE COVARIANT DESIGN USED IN THE STATISTICAL TREATMENT OF THE SCORES OF TEST FIVE OF THE ITED

	Experimental Group		Control Group	
	ITED SCORE	GRADE IN U.S. HISTORY	ITED SCORE	GRADE IN U.S. HISTORY
Male	Standard Scores	Weighted Scores	Standard Scores	Weighted Scores
Female	Standard Scores	Weighted Scores	Standard Scores	Weighted Scores

Note: This statistical procedure was run once for the group as a whole. Additional analyses were also run with three ethnic sub-groups as follows: (1) Black and Mexican-American; (2) Oriental; and (3) Caucasian.

semester following the treatment.[23]

Because of the larger proportion of girls within each group in the study (see Figure 2), sex was treated as an independent variable in each of the covariant analyses run.

Statistical Procedures for Affective Measures

Procedures utilized in the various affective measurements for statistical analysis varied according to the amount of data available.

Attitudes Toward Issues in Society

Following the technique reported by Nordstrom[24] in the study of ressentiment, the forced choices on responses to the video taped episodes on societal issues were weighted and an order arrived at for each response in each episode. Next, the results obtained were subjected to a correlative comparison among the three groups--experimental subjects, control subjects, and adult judges. The Spearman Rank Correlation[25] was selected for analysis of the significance of the degree of correlation between experimental and control subjects, experimental subjects and adult judges, and control subjects and adult judges.

Measures of Direction of Movement

The appraisal of student behavior in the areas of participation in activities, attendance, discipline referrals,

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[23]Standard scores on the Lorge Thorndike Intelligence Test, Form G, were available through the central office.

[24]Nordstrom, Society's Children, pp. 174-76.

[25]See Siegel, Nonparametric Statistics, pp. 202-213.

counselor appraisals, and suspensions from school were treated as two-category items. The direction of movement--improved or regressed as the case might be--was subjected to a Sign Test to measure the significance of the changes. Concerning this procedure Siegel states:[26]

> The Sign Test gets its name from the fact that it uses plus and minus signs rather than quantative measures as its data. It is particularly useful for research in which quantitative measurement is impossible or infeasible, but in which it is possible to rank with respect to each other the two members of each pair.

In the case of this study, the pair of members subjected to the sign test consists of two measurements taken on each subject--one before and the other after the treatment. The test is then applied to each group separately to determine if a noted change of direction is statistically significant or whether chance alone might account for any observed differences.

Summary

Using unobtrusive measurement, the subjects in the experimental class in government were compared with a similar group of students taking a traditional government class. One cognitive measurement of social studies achievement and several affective measurements of citizenship behavior were made on each group. These measurements were subjected to statistical analysis with the cognitive measure evaluated through parametric and the affective measures through non-parametric statistics.

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[26] Ibid., p. 68.

CHAPTER IV

REPORT OF DATA COLLECTED

Results of Measuring Instruments

The data described in Chapter III were collected during the school year 1969-70. The following is a report of these data and the various statistical procedures employed for their interpretation.

Measures of Direction of Movement

Counselor Appraisals of Citizenship

In the opinion of the counselors, twelve students in the experimental group (N = 73) changed in a positive direction in citizenship in the semester following the treatment. No negative changes were noted (see Table 4). The Sign Test[1] reveals the probability of twelve out of twelve changes being positive in a two-category item as p = .00075.

TABLE 4

COUNSELOR APPRAISALS OF CHANGES IN THE BEHAVIOR OF SUBJECTS FOLLOWING INSTRUCTION AS COMPARED TO SUBJECTS' BEHAVIOR BEFORE INSTRUCTION

Experimental Group (N = 73)			Control Group (N = 109)		
Improved	No Change	Regressed	Improved	No Change	Regressed
12	61	0	21	73	15
p = .00075 (Sign Test)			p = .2033 (Sign Test)		

[1]Siegel, Nonparametric Statistics, p. 68.

In the opinion of the counselors, thirty-six of the students in the control group (N = 109) evidenced a change in citizenship. Twenty-one of the changes were positive and fifteen were negative (see Table 4). The Sign Test lists the probability of a split of twenty-one to fifteen in a group of thirty-six on a two category item as p = .2033.

Evaluation of Discipline Referrals

According to the records maintained by the vice principals in the three high schools in the study, ten students in the experimental group (N = 73) compiled a record of discipline referrals in the semester following the treatment which was different from that of the preceding semester. Of those changing, eight received fewer referrals to the administrative offices for discipline and two received more (see Table 5). The Sign Test lists the probability of eight of ten in a two-category item as p = .055.

TABLE 5

CHANGES IN RECORD OF DISCIPLINE REFERRALS TO ADMINISTRATIVE OFFICES FOR ANY REASON BETWEEN THE YEAR FOLLOWING INSTRUCTION IN UNITED STATES GOVERNMENT AND SOCIOLOGY

Experimental Group (N = 73)			Control Group (N = 109)		
Fewer	No Change	More	Fewer	No Change	More
8	63	2	12	88	9
p = .055 (Sign Test)			p = .332 (Sign Test)		

Administrative records for the control group showed a total of twenty-one (N = 109) compiling a record of discipline referrals which was different in the semester

following than in the semester preceding the treatment. Twelve of the changes were positive and nine were negative. The Sign Test lists the probability of twelve of twenty-one in a two-category item as p = .332.

Evaluation of Suspension Records

Data maintained in the central school district office did not list any of the subjects in either the experimental or the control group as having been suspended from school for any reason either before or after the treatment.

Evaluation of Attendance Records

Changes in attendance between the school year preceding and following the treatment are shown in Table 6. Students in the experimental group changed in attendance from an average of 8.11 days per year missed in the period preceding the treatment to an average of 7.38 days missed during the year following the treatment. Sixty-five of these students (N = 73) evidenced a change in attendance with twenty-four regressing and forty-one improving. The Sign Test lists the probability of a split of twenty-four to forty-one in a group of sixty-five as p = .0239.

Students in the control group changed in attendance from an average of 6.18 days missed during the school year preceding the treatment to an average of 8.06 days missed in the year following the treatment (see Table 6). Ninety-two of these students (N = 109) evidenced a change in attendance, with sixty-two regressing toward more absence and thirty improving. The Sign Test lists the probability of a

TABLE 6

COMPARISON OF ATTENDANCE RECORDS IN CONTROL AND EXPERIMENTAL GROUPS FOR THE SCHOOL YEARS PRECEDING AND FOLLOWING THE TREATMENT SHOWING DIRECTION OF CHANGE, IF ANY AND NUMBER OF DAYS CHANGE, IF ANY

Experimental Group (N = 73)					Control Group (N = 109)									
	Total Days of Absence				Total Days of Absence					Total Days of Absence				
Subject	1968-	1969-	Change	Sign	Subject	1968-	1969-	Change	Sign	Subject	1968-	1969-	Change	Sign
A-38	22	17	5	-	B-12	5	6	1	+	B-146	7	9	2	+
A-9	4	7	3	+	B-25	5	3	2	-	B-147	1	3	2	+
A-3	13	11	2	-	B-13	0	0	0	0	B-90	3	1	2	-
A-10	5	3	2	-	B-15	1	13	12	+	B-91	7	15	8	+
A-40	1	1	0	0	B-16	0	5	5	+	B-92	0	1	1	+
A-22	11	10	1	-	B-4	9	9	0	0	B-137	39	14	25	-
A-41	0	6	6	+	B-17	5	8	3	+	B-138	33	23	10	-
A-24	11	7	4	-	B-5	1	2	1	+	B-93	6	7	1	+
A-25	0	3	3	+	B-19	0	1	1	+	B-94	0	1	1	+
A-43	7	4	3	-	B-62	10	12	2	+	B-148	1	1	0	0
A-44	7	7	0	0	B-20	3	2	1	-	B-149	14	15	1	+
A-46	0	0	0	0	B-7	0	0	0	0	B-96	4	8	4	+
A-79	3	2	1	-	B-8	13	11	2	-	B-97	2	5	3	+
A-26	0	5	5	+	B-23	16	3	13	-	B-84	0	1	1	+
A-14	5	25	20	+	B-9	0	0	0	0	B-151	1	3	2	+
A-47	18	10	8	-	B-24	0	0	0	0	B-99	6	14	8	+
A-15	3	13	10	+	B-46	4	0	4	-	B-152	20	22	2	+
A-48	16	15	1	-	B-163	21	2	19	-	B-101	20	22	2	+
A-28	8	14	6	+	B-32	5	24	19	+	B-102	1	1	0	0
A-59	21	16	5	-	B-34	9	3	6	-	B-154	1	4	3	+
A-29	3	1	2	-	B-57	7	6	1	-	B-85	4	5	1	+
A-16	0	0	0	0	B-47	14	15	1	+	B-104	5	6	1	+
A-1	6	5	1	-	B-37	20	20	0	0	B-155	8	10	2	+
A-50	1	0	1	-	B-48	0	0	0	0	B-158	5	16	11	+
A-61	4	2	2	-	B-38	17	13	4	-	B-160	1	17	16	+
A-17	8	7	1	-	B-161	1	1	0	0	B-105	12	13	1	+
A-18	7	11	4	+	B-39	20	9	11	-	B-106	4	6	2	+
A-31	5	10	5	+	B-50	6	2	4	-	B-108	6	14	8	+
A-62	3	12	9	+	B-52	3	20	17	+	B-86	4	1	3	-
A-63	15	8	7	-	B-165	4	5	1	+	B-141	11	10	1	-
A-51	0	3	3	+	B-53	0	1	1	+	B-109	0	0	0	0
A-64	20	1	19	-	B-54	6	6	0	0	B-110	3	2	1	-
A-65	4	13	9	+	B-41	6	9	3	+	B-111	2	2	0	0
A-66	5	4	1	-	B-55	4	5	1	+	B-112	1	4	3	+
A-6	4	3	1	-	B-164	0	23	23	+	B-113	5	7	2	+
A-67	3	2	1	-	B-58	5	19	14	+	B-114	5	0	5	-
A-36	0	0	0	0	B-42	11	35	24	+					
A-53	0	2	2	+	B-162	0	2	2	+					
A-54	7	12	5	+	B-43	3	24	21	+					
A-20	19	10	9	-	B-166	6	9	3	+					
A-85	6	5	1	-	B-60	7	14	7	+					
A-75	2	2	0	0	B-27	4	14	10	+					
A-92	4	2	2	-	B-45	11	25	14	+					
A-76	3	8	5	+	B-61	2	1	1	-					
A-93	2	1	1	-	B-35	0	22	22	+					
A-78	10	14	4	+	B-87	7	6	1	-					
A-69	2	2	0	0	B-129	4	14	10	+					
A-87	4	2	2	-	B-115	7	2	5	-					
A-80	8	6	2	-	B-66	2	2	0	0					
A-77	2	5	3	+	B-67	1	2	1	+					
A-95	11	13	2	+	B-68	3	7	4	+					
A-82	16	9	7	-	B-69	11	21	10	+					
A-88	14	18	4	+	B-70	1	4	3	+					
A-83	4	2	2	-	B-130	4	1	3	-					
A-74	4	3	1	-	B-117	11	16	5	+					
A-97	4	4	0	0	B-118	32	21	11	-					
A-114	1	0	1	-	B-71	1	1	0	0					
A-105	22	20	2	-	B-119	15	11	4	-					
A-115	2	1	1	-	B-75	5	1	4	-					
A-111	1	0	1	-	B-76	7	3	4	-					
A-116	20	13	7	-	B-77	2	2	0	0					
A-117	9	4	5	-	B-122	2	2	0	0					
A-108	5	3	2	-	B-123	0	6	6	+					
A-120	26	19	7	-	B-143	14	3	11	-					
A-109	7	15	8	+	B-124	1	3	2	+					
A-118	6	8	2	+	B-89	0	1	1	+					
A-102	1	6	5	+	B-125	5	6	1	+					
A-121	20	24	4	+	B-30	4	7	3	+					
A-103	0	13	13	+	B-82	5	6	1	+					
A-122	16	13	3	-	B-135	3	6	3	+					
A-127	30	10	20	-	B-127	19	9	10	-					
A-124	27	2	25	-	B-136	13	3	10	-					
A-125	31	7	24	-	B-145	9	10	1	+					
Average days absent	8.11	7.36			Average Days Absent						6.18	8.06		
Number of students changing = 65					Number of students changing = 92									
Change toward more absences = 24					Change toward more absences = 63									
Change toward fewer absences= 41					Change toward fewer absences= 29									
Probability of this change occurring by chance =.0239 (Sign Test)					Probability of this change occurring by chance = <.0003 (Sign Test)									

split of sixty-two to thirty in a group of ninety-two cases as p = .0003. This probability obtains for a change in an undesirable direction (i.e., poorer attendance). Additionally, district records maintained over a ten year period indicated that a general worsening of attendance might be expected in the current year among high school students (see APPENDIX IV).

Separate tabulations made for ethnic sub-groups--Black and Mexican-American, Caucasian, and Oriental-- indicated that Caucasian students were largely responsible for the changes in attendance (see Figure 4), although Black and Mexican-American students in the control group compiled an attendance record in the year following the treatment which was significantly worse than their record in the year preceding the treatment (p = .029, Sign Test).

Participation in Activities

Fifty subjects in the experimental group (N = 73) reported differences in the number of activities in which they participated in the year preceding and the year following the treatment (see Table 7). Those reporting a change toward greater participation numbered thirty one while nineteen reported fewer activities. The Sign Test lists the probability of a split of thirty-one to nineteen in a group of fifty as p = .0594.

Seventy subjects in the control group (N = 109) also reported differences in the number of activities in which

FIGURE 4

COMPARISON OF AVERAGE DAYS OF ABSENCE IN THE YEAR PRECEDING AND THE YEAR FOLLOWING THE TREATMENT SHOWING DIFFERENCES BETWEEN TOTAL GROUPS AND ETHNIC SUB-GROUPS

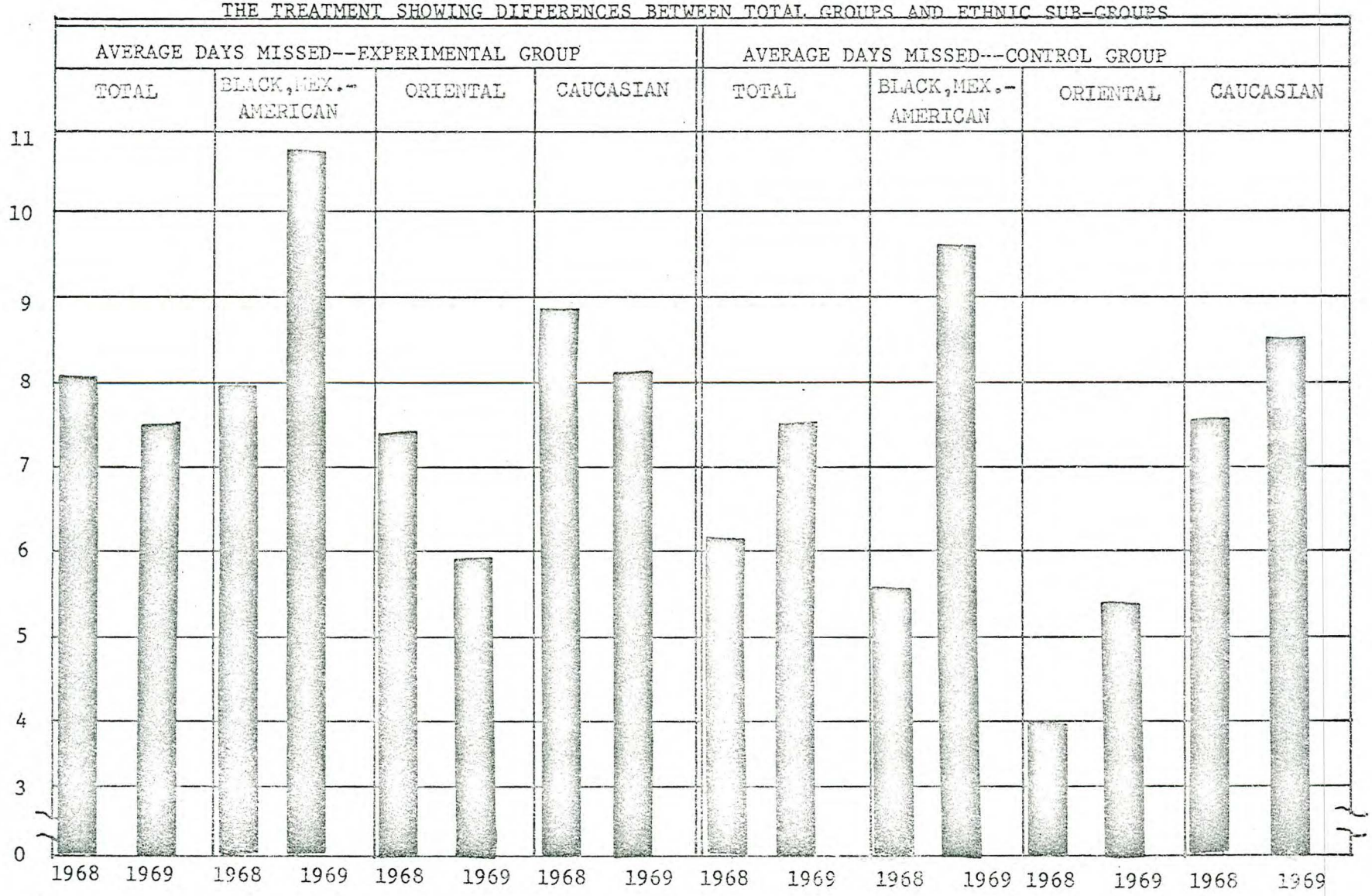

TABLE 7

COMPARISON OF ACTIVITIES OF SUBJECTS IN EXPERIMENTAL AND CONTROL GROUPS IN THE YEAR PRECEDING AND THE YEAR FOLLOWING THE TREATMENT SHOWING NUMBERS OF SUBJECTS IN EACH GROUP BY CHANGE IN NUMBER OF ACTIVITIES FOR IN-SCHOOL, COMMUNITY, AND TOTAL ACTIVITIES REPORTED

Experimental Group (N = 73)				Control Group (N = 109)			
Type of Activity	Increase	No Change	Decrease	Type of Activity	Increase	No Change	Decrease
School-related Activities (Number of Subjects)	26	27	20	School-related Activities (Number of Subjects	28	57	24
Community-related Activities (Number of Subjects)	22	36	15	Community-related Activities (Number of Subjects	19	66	24
Total Activities (Number of Subjects)	31	23	19	Total Activities (Number of Subjects	32	39	38
Probability of Change Occurring by Chance Alone (Sign Test) School-related Activities: P = .2296 Community-related: P = .1611 Total Activities: P = .0594				Probability of Change Occuring by Chance Alone (Sign Test) School-related Activities: P = .3372 Community-related: P = .2743 Total Activities: P = .2743			

they participated in the year preceding and the year following the treatment (see Table 7). Those reporting changes listed thirty-two changes toward increased participation in activities and thirty-eight toward less participation. None of these changes reported by the control group reached the probability level of .20 which was set in this study as an indication of the need for further investigation.

Measures of Correlation

Responses to the video-taped questionnaire on attitudes toward problems facing society were tabulated and weighted, using the same scale as that developed by Nordstrom.[2] Items picked as "best" by subjects[3] were given an arbitrary weighting of +4; items chosen as "good" received +2.5; items picked as "poor" were assigned a score of -2.5; and items rated "worst" were assigned a score of -4. This weighting is based upon a nine-point scale using zero as one of the values.[4] By averaging the weighted responses,

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[2]Nordstrom, Friedenberger and Gold, Society's Children, p. 176.

[3]The wording of all items from which subjects might choose is included in APPENDIX IV.

[4]A nine-point scale is arrived at by assigning the following values to the continuum of responses: +4,+3,+1, 0,-1,-2,-3, and -4. When nine responses are forced into five categories, the scale converts to the five values of +4, +2.5 (the average of the responses of +3 and +2), 0 (the average of the three responses of +1,0, and -1),-2.5(the average of the two responses of -2 and -3) and -4. Using this converted scale, the "best" response receives +4, the two "good" responses receive +2.5 each, the middle three responses are ignored, the two "poor" responses are assigned -2.5 each, and the "worst" response receives -4.

an order of preference for the items was computed for each group on each taped segment. Table 8 shows the weighted responses to Item A of the questionnaire by experimental group, control group, judges, etc.[5] A comparison of the rankings given Item A [rankings are also shown on Table 8] shows considerable agreement in the ranking order for responses achieved by all groups.

Correlations obtained from the Spearman Rank Correlation method[6] for all items on the video taped instrument are shown in Figure 5. Correlations for the three principal groups--experimental, control, and adult judges--show the following relationships: experimental group with judges,.930; control group with judges, .963; experimental with control group, .867. The critical ratio for significance at the .01 level on this test is .783. Consequently, all of the above correlations are significant at the .01 level.

The three groups were compared in the same manner, item by item, and additional comparisons were made with ethnic[7] sub-groups (see Figure 5). Only on Item F (total groups and total judges), which dealt with air pollution and its control,

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[5]Similar tabulations for Items B, C, D, E, F, and G appear in APPENDIX IV.

[6]Siegel, Non Parametric Statistics, pp. 213 and 284.

[7]Black and Mexican-American subjects were grouped together on the cognitive measure to provide a sufficient number of subjects for each cell in the analysis of covariance. The same grouping was used with the non-parametric tests for comparability.

TABLE 8

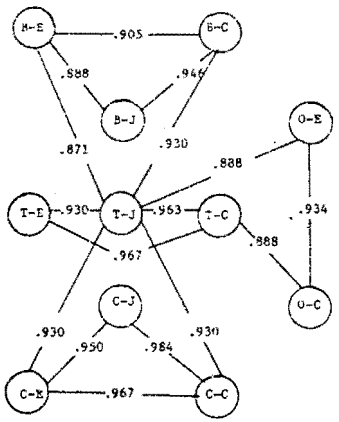
WEIGHTED SCORES AND RANKINGS FOR EACH QUESTION ON ITEM A OF VIDEO TAPED QUESTIONNAIRE BY TOTAL GROUPS AND BY ETHNIC SUB-GROUPS

POSSIBLE RESPONSE TO ITEM OF VIDEO-TAPED QUESTIONNAIRE	TOTAL GROUPS			CAUCASIAN ONLY			BLACK AND MEXICAN-AMERICAN ONLY			ORIENTAL ONLY	
	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.
A-1. We need higher pay for air traffic controllers.	-1.14	-0.12	-0.17	-1.13	+0.09	-0.67	-1.63	0.00	+0.83	-1.08	-0.63
	7th	6th	5th	7th	6th	6th	7th	5th	4th	6th	6th
A-2. Airports are over-crowded and more should be built.	+0.69	+0.89	+0.56	+0.83	+1.04	+1.25	+0.63	-0.20	-0.83	+0.58	+1.12
	4th	3rd	3.5	4th	3rd	3rd	4.5	6th	6.5	5th	3rd
A-3. Air traffic controllers are often as inept as the one depicted in this sketch.	-2.05	-2.03	-3.33	-2.55	-2.37	-3.25	-2.87	-1.20	-3.50	-1.19	-1.63
	8th	8th	9th	8th	8th	9th	8th	8th	9th	7th	7th
A-4. Sketches like this one undermine the confidence of the public in commercial aviation. They should not be allowed on public television.	-3.34	-2.61	-2.44	-3.55	-2.94	-2.17	-3.25	-2.50	-3.00	-2.87	-1.83
	9th	9th	8th	9th	9th	8th	9th	9th	8th	9th	9th
A-5. Airplanes are still not as safe as the airlines would try to make us believe they are.	-0.67	-1.36	-1.11	-0.31	-1.45	-1.25	-0.25	-0.43	-0.83	-1.42	-1.67
	6th	7th	7th	6th	7th	7th	6th	7th	6.5	8th	8th
A-6. This sketch is a good example of the use of humor to call public attention to a serious problem.	+3.07	+2.56	+3.67	+3.37	+2.65	+3.75	+2.88	+2.23	+3.50	+2.60	+2.50
	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st	1st
A-7. The government should subsidize the education of more air traffic controllers.	+0.25	+0.28	-0.28	+0.13	+0.28	-0.42	+0.63	+0.17	).00	+0.63	+0.35
	5th	5th	6th	5th	5th	5th	4.5	4th	5th	4th	4th
A-8. Upon viewing this sketch, the responsible citizen will attempt to "read up" on the subject to determine if a problem really exists.	+1.03	+0.64	+0.56	+1.19	+0.83	0.00	+1.25	+1.40	+1.67	+0.65	-0.31
	3rd	4th	3.5	3rd	4th	4th	3rd	2nd	3rd	3rd	5th
A-9. Congestion at airports is but another example of the need for better national planning in this country.	+1.92	+1.76	+2.56	+2.15	+1.86	+2.75	+2.63	+0.70	+2.17	+2.10	+2.21
	2nd	2nd	2nd	2nd	2nd	2nd	2nd	3rd	2nd	2nd	2nd

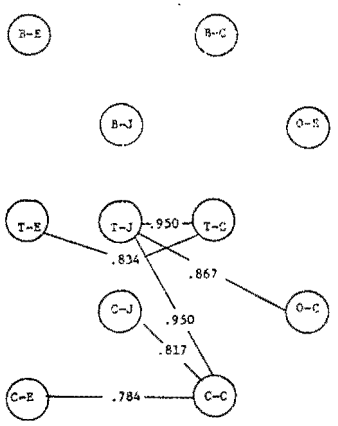
Note: This tape showed a "stand-up" comedian doing his routine on the "Air Traffic Controller."

SIGNIFICANT CORRELATIONS AT THE .01 LEVEL (SPEARMAN) FOR ALL ITEMS OF VIDEO-TAPED QUESTIONNAIRE SHOWING TOTAL GROUPS AND ETHNIC SUB-GROUPS

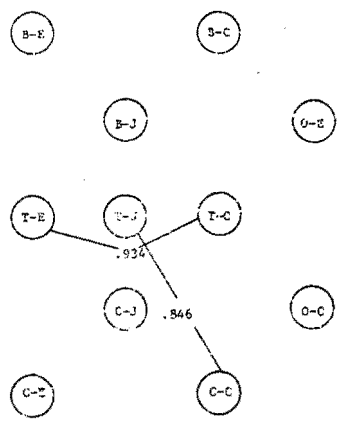
A. AIR TRAFFIC CONTROLLER SKETCH



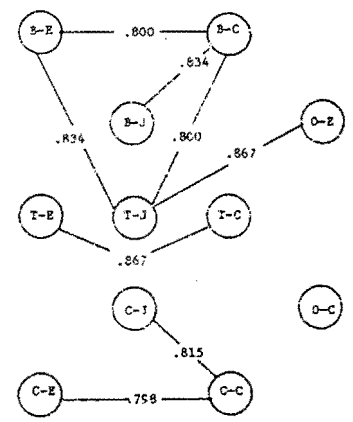
B. NEWS EVENT OF 1969



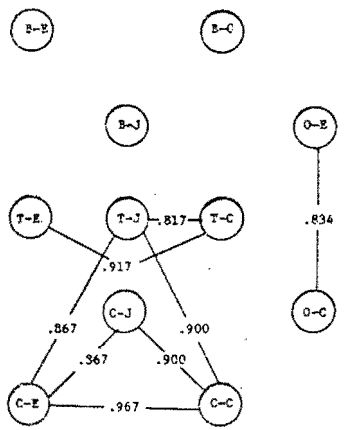
C. THE $64.00 FUNERAL



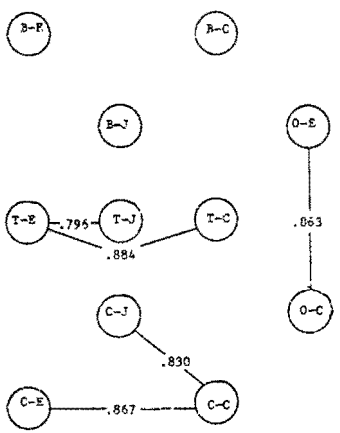
D. DRUG MANUFACTURER'S RESPONSIBILITY



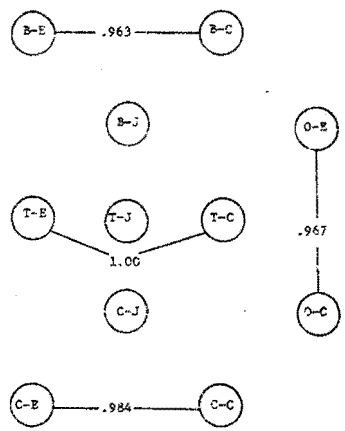
E. SPOOF OF TELEVISION COMMERCIALS



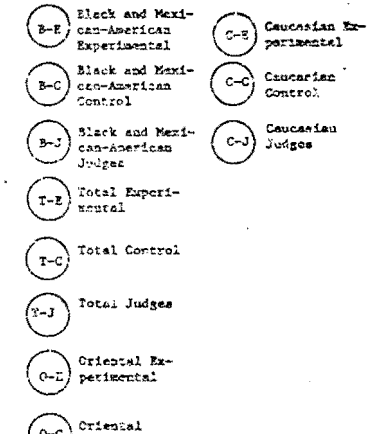
F. AIR POLLUTION AND ITS CONTROL



G. DICK GREGORY AT THE UNIVERSITY OF ALABAMA



KEY TO SYMBOLS



was the researcher's prediction of the degree and direction of correlation upheld (see Chapter III, p. 51). In this case there was a significant correlation between the choices of the experimental group and the responses of the adult judges while there was no statistically significant correlation between the choices of the control group and the judges.

In all items there tended to be a closer correlation between the rankings made by the experimental and control subjects than was observed between the rankings made by either of these groups and the adult judges. In three cases--Items C (comedy sketch on the high cost of funerals), D (newscast on legislation concerning the manufacturer's responsibility in drug education), and G (Dick Gregory at the U. of Alabama)--there was a considerable difference between the judgements made by high school students and those made by the adult judges. In each of these cases the total experimental and total control groups correlated with each other but not with the judges in their ranking of responses. It was also observed that ethnic sub-groups tended to respond divergently from each other. This was best illustrated in Item G (Dick Gregory) where the only correlations observed are within ethnic sub-groupings.

Measures of Cognitive Gains

An Analysis of covariance[8] run on a Burroughs 5500 computer at the University of California at Davis, using the

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[8]M. W. Tate, Statistics in Education, pp. 515-22.

BIOMED program BMD05V[9] compared the standard scores of the experimental and control groups obtained on Sub-test Five of the ITED.[10] Weighted scores representing the subjects' grades in the required eleventh grade course United States History were used as the covariant control.[11]

The research design was a "posttest-only, control group" format[12] utilizing covariance to control for the factor of selection (intact groupings used) and partitioned into levels (sex) to control for possible differences in male and female subjects[13] (see Figure 3, p. 63, for a paradigm of the design). The factor of intelligence was controlled as a variable by excluding all subjects who scored outside two standard deviations above or below the mean of the Lorge-Thorndike Intelligence Test, Form 1, Level G, administered

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[9] See APPENDIX IV for a description of this program.

[10] ITED, Form X-4, pp. 30-39.

[11] The weighting procedure was as follows: (1) each letter grade was assigned a numerical value on a five point scale [A=5,B=4,C=3,D=2,F=1]; (2) each subject matter grade [students received two grades--one for subject and one for citizenship each semester of the two semester course] was given a double weighting--that is, its numerical value was multiplied by two; (3) the numerical equivalents of each of the four grades [two per semester] were summed to arrive at a weighted score representing the most recent measurement of each student's performance in the social studies area.

[12] Campbell and Stanley, Experimental and Quasi-experimental Designs for Research, p. 25.

[13] Hess and Torney, The Development of Basic Attitudes Toward Government, pp. 173-184.

to the subjects in the semester preceding the treatment.

The computer program was run four times with the data arranged as follows:

1. Total experimental versus total control groups.

2. Black and Mexican-American experimental subjects versus Black and Mexican-American control subjects.

3. Caucasian experimental subjects versus Caucasian control subjects.

4. Oriental experimental subjects versus Oriental control subjects.

The results of these analyses are reported in Table 9. For the total group of subjects, the null hypotheses that no significant difference existed between the scores achieved by the experimental and the control subjects on the ITED sub-test in social studies was rejected at the .01 level of significance. The null hypothesis that there was no significant difference between the scores achieved by males and the scores achieved by females on the same test was sustained. The null hypothesis that there was no significant interaction between levels and treatments was also sustained. There was, however, interaction observed at the .05 level of significance between treatment and sex for Caucasian subjects only.

When sub-groups were subjected to the covariant analysis procedure, the only group retaining a statistically significant gain was the Caucasian experimental subjects. Black and Mexican-American in experimental and control groups did not score at a statistically significant level on the test.

TABLE 9

ANOV TABLES FOR COGNITIVE MEASURE OF GAINS IN SOCIAL STUDIES USING ANALYSIS OF COVARIANCE

A. Total Groups

Source	df	SS	MS	F	Sig.
Treatment	1	191.03840	191.03840	8.04326	.01
Levels	1	59.66462	59.66462	2.51205	NS
Tr. X Lev.	1	21.97666	21.97666	0.92528	NS
Error	177	4203.99401			

B. Black and Mexican-American Subjects

Source	df	SS	MS	F	Sig.
Treatment	1	24.71147	24.71147	1.15013	NS
Levels	1	28.80890	28.80890	1.34083	NS
Tr. X Lev.	1	50.28563	50.28563	2.34044	NS
Error	14	300.8010			

C. Caucasian Subjects

Source	df	SS	MS	F	Sig.
Treatment	1	179.05002	179.05002	7.51412	.01
Levels	1	74.43304	74.43304	3.12370	NS
Tr. X Lev.	1	106.76105	106.76105	4.48040	.05
Error	105	2501.99068			

D. Oriental Subjects

Source	df	SS	MS	F	Sig.
Treatment	1	36.35112	36.35112	1.73881	NS
Levels	1	11.13811	11.13811	0.53278	NS
Tr. X Lev.	1	7.48261	7.48261	0.35702	NS
Error	48	1003.47309			

Neither did Oriental experimental subjects score significantly different from Oriental control subjects.

Relationship of Measurement to Hypotheses

Major Hypotheses

The results of the statistical procedures employed in this study to the stated hypotheses are as follows:

Hypothesis A

> Students exposed to a saturated environment for the study of government and sociology will respond to an instrument designed for measuring attitudes toward basic problems in society with choices which more closely resemble those made by a panel of responsible adults in the community than will students taking a traditional course in government, even when the instrument is administered as much as one semester following the completion of the treatment.

Of the seven items on the instrument used for measuring this hypothesis (see Figure 5), only the sixth item (Item F) was supported by the data. The control group more closely resembled the adult judges in two items (Items C and D) than did the experimental group; and all three groups--experimental, control, and judges--made very similar responses to Item A. Throughout the video-taped questionnaire the students, experimental and control, correlated more closely with each other than did either with the adult judges. The data did not support the hypothesis stated.

Hypothesis B

> Students exposed to a saturated environment for the study of government and sociology will evidence a significant change in participation in both school and community activities following the treatment while students who take a traditional course in government and sociology will

> not change significantly. Further, the direction of the change in behavior observed in subjects in the treatment group will be toward increased participation in one or both areas.

A rejection level for the null hypothesis was set in the study at .05 for non-parametric tests. The data indicated a probability level of p = .0594 (Sign Test) for the above hypothesis (see Table 7). The data did not confirm Hypothesis B as significant; however a probability level beyond p = .20 on a non-parametric test falls into the category set for "recommendations for further study."

The data further indicated that the control group did not change significantly in either community or in school activities, but that the experimental group leaned more toward a change in the number of out-of-school activities than toward activities within the school framework.

Hypothesis C

> Students exposed to a saturated environment for the study of government and sociology will be rated by their counselors as having improved in citizenship following the treatment while no such change will be noted by the counselors of students in the control group.

Subjects in the experimental group improved in citizenship, according to their counselors, while those in the control group did not (see Table 4). The confidence level for this finding (Sign Test) was p = .00075. Therefore, Hypothesis C was supported by the data.

Hypothesis D

> Students exposed to a saturated environment for the study of government and sociology will exhibit improved citizenship in school following

> the treatment by maintaining a better attendance record than before the treatment, while no such change will be noted in students within the control group.

Attendance records for the periods before and after the treatment (see Table 6) showed that the experimental group did maintain a better attendance record in the year following the treatment with a confidence level (Sign Test) of p = .0239. On the other hand, the control group exhibited significantly poorer attendance following the treatment period by moving in a negative direction. The confidence level set for significance (.05) was exceeded by the control group, but in a negative direction. The probability that this negative change for the control group was p = .0003. During the same period, attendance in the Sacramento City Unified School District for high school students deteriorated further from the level of the preceding year.[14] [A downward trend generally in senior high school attendance had been noted in the ten year period from 1960 to 1970.] Hypothesis D was supported by the data.

Hypothesis E

> Students exposed to a saturated environment for the study of government and sociology will have fewer discipline referrals following the treatment than in the period immediately preceding the experiment, while no such changes will be observed within the control group.

While the numbers of students in both groups referred

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[14] A summary of this ten-year period's high school attendance is included in APPENDIX IV.

for disciplinary action were small, ten in the experimental and twenty-one in the control groups (see Table 5), the Sign Test indicates a significance at the level of p = .055 in favor of the experimental group. The data indicated the the need for further investigation concerning Hypothesis E.

Hypothesis F

> Students exposed to a saturated environment for the study of government and sociology will have fewer suspensions from school for any reason following the treatment than in the period preceding the experiment, while no such change will be observed in the control group.

No students in either group were suspended from school either before or after the treatment period. Therefore, Hypothesis F was not supported by the data.

Hypothesis G

> Students exposed to a saturated environment, such as that provided in the experiment, will score significantly higher on a nationally standardized cognitive test of social studies concepts than will students who take the more traditional courses when measurement is made ten or more weeks following the end of the treatment period.

The data indicated that male students in the experimental group achieved a mean score on the ITED (Sub-Test Five) of 22.10 and female experimental students achieved a mean score of 20.21. Students in the control group scored means of 19.16 and 18.23 respectively [All the preceding are standard scores supplied by the test maker].[15] These differences are significant for the experimental group at the .01

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[15]Mean scores for total and sub groups are in APPENDIX IV.

level, according to the analysis of covariance performed on the data (see Table 9). Therefore, Hypothesis G was supported by the data.

Supplemental Hypotheses

Hypotheses A and G were amplified by a series of supplemental hypotheses aimed at the investigation of possible ethnic and sex differences among the subjects in the experiment. Following is a summary of the results of these supplemental hypotheses:

Hypothesis A-1

> Black and Mexican-American students instructed in government and sociology under conditions of a saturated environment will respond to an instrument designed for measuring attitudes toward basic problems in our society with choices which more closely resemble those made by a panel of responsible adult judges of differeng ethnic backgrounds and to a panel of responsible adult judges of similar ethnic origin than will a group of Black and Mexican American students taking a traditional course in government and sociology.

With the exception of Items A and D (see Figure 5), Black and Mexican American students did not agree with the judges. In both instances where they did agree with the rankings made by either group of judges, both groups--experimental and control--ranked responses in a manner which correlated significantly with the judges. Hypothesis A-1 was not supported by the data.

Hypothesis A-2

> Caucasian students instructed in government and sociology under conditions of a saturated environment will respond to an instrument designed for measuring attitudes toward basic

> problems in our society with choices which more closely resemble those made by a panel of responsible adult judges of differing ethnic backgrounds and to a panel of responsible adult judges of the same ethnic group than will a group of Caucasian students taking a traditional course in government and sociology.

In no case did the Caucasian students in the experimental group agree with the judges when the Caucasian students in the control group did not (see Figure 5). In four cases the reverse was true; that is, students in the control group agreed with the adult judges, either Caucasian, total, or both, while the experimental students did not. These cases are Items B, C, D, and F. Hypothesis A-2 was not supported.

Hypothesis A-3

> Oriental students instructed in government and sociology under conditions of a saturated environment will respond to an instrument designed to measure attitudes toward basic problems in our society with choices which more closely resemble those made by a panel of responsible adult judges from differing ethnic backgrounds than will a group of Oriental students who take a traditional course in government and sociology.

In only one of the seven items of the video taped questionnaire--Item D--did the researcher's prediction hold true. In this case the Oriental students in the experimental group agreed with the total judges while the control group's Oriental members did not. Hypothesis A-3 was not generally supported by the data.

Hypothesis G-1

> Girls instructed in government and sociology under conditions either of a saturated or a traditional environment will score significantly

> higher on a nationally standardized cognitive test of social studies concepts than will boys instructed by either method.

The results of the analysis of covariance performed on the data (see Table 9) indicate that girls did not score significantly differently than did boys on the test. Hypothesis G-1 was not supported by the data.

Hypothesis G-2

> There will be a significant interaction between treatment and sex when government and sociology are taught under conditions of a saturated environment and a traditional environment, with boys achieving at a higher level in a saturated environment and girls at a higher level in a traditional class.

The results of the covariant analysis performed on data(see Table 9) indicated that there was not a significant interaction at the .01 level set for this experiment. There was, however, one case of interaction at the .05 level in which Caucasian girls achieved at a higher level in social studies in the traditional class and boys at a higher level in a saturated environment as predicted. The data indicated the need for further investigation in the case of interaction between instruction and sex, so far as Caucasian subjects are concerned.

Hypothesis G-3

> Black and Mexican-American students instructed in government and sociology under conditions of a saturated environment will score significantly higher on a nationally standardized test of cognitive learnings in social studies than will Black and Mexican-American students who take a traditional course in government and sociology.

The data indicated no differences for Black and Mexican-American students instructed in a saturated environment as compared to a traditional environment. Hypothesis G-3 was not supported by the data.

Hypothesis G-4

> Caucasian students instructed in government and sociology under conditions of a saturated environment will score significantly higher on a nationally standardized cognitive test of social studies concepts than will Caucasian students who take a traditional course in government and sociology.

According to the covariant analysis performed on th data (see Table 9), Caucasian students instructed in the experimental class achieved a mean score which was significantly different at the .01 level from that achieved by Caucasian students instructed in a traditional course. Hypothesis G-4 was supported by the data.

Hypothesis G-5

> Oriental students instructed in government and sociology under conditions of a saturated environment will score significantly higher on a nationally standardized cognitive test of social studies concepts than will Oriental students who take a traditional course in government and sociology.

The covariant analysis performed on the test scores (see Table 9) does not show a significant gain as predicted for Oriental students. Hypothesis G-5 was not supported by the data.

Summary

Of the seven major research hypotheses formulated for this study, three were supported, two were rejected, and two

indicated the need for further research. Those supported were Hypothesis C, a predicted improvement in citizenship for experimental subjects as measured by counselors; Hypothesis D, a predicted improvement in attendance for the experimental subjects; and Hypothesis G, a predicted significant gain in cognitive learnings for students in the experimental class. Those rejected were Hypothesis A, a predicted similarity in the responses of experimental subjects and adult judges on responses to problems facing society and Hypothesis F, a predicted reduction in the number of suspensions from school for the experimental group. Hypotheses which indicated a need for further study were Hypothesis B, a predicted increase in community and school activities for the experimental group, and Hypothesis E, a predicted reduction in the number of referrals for disciplinary reasons for the experimental group.

The several supplemental hypotheses tended to point to differences in the responses of ethnic sub-groups to a major hypothesis [which was rejected], Hypothesis A, and to a reverse trend for a hypothesis which was otherwise supported by the data, Hypothesis G. In both of these cases Black and Mexican-American [taken together] and Oriental sub-groups differ sharply from their Caucasian classmates.

CHAPTER V

ANALYSIS OF FINDINGS

The purpose of this study was to ascertain whether or not the medium of a saturated environment for teaching government and sociology to high school seniors would prove superior to a traditional instructional method in these subjects. [The term saturated environment refers to a concentrated summer school program in which classes were transported to government and business agencies to observe government and sociology in action.] The study set out to measure gains, both cognitive and affective, through the use of unobtrusive measures made three to six months following the treatment period. Seventy-three students within the experimental class (those who survived all of the unobtrusive measures) were compared with one hundred and nine students taking a traditional course in government and sociology during the same summer session in the same attendance areas as those from which the experimental group was drawn.

Non-Parametric Measures of Affective Behavior

Following the counsel of Webb, Campbell, and Schwartz,[1] the investigator utilized the archives approach in the collection of data for a series of simple non-parametric tests

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[1] Webb, Campbell, and Schwartz, Unobtrusive Measures, p. 87.

to measure changes in affective behavior in an area which is loosely called "citizenship." Counselors and administrators were utilized to examine the records of subjects and to judge whether or not they felt these records contained evidence of changes in behavior for the subjects in the experiment. District attendance data were analyzed to add information concerning attendance habits and to measure possible changes in attendance habits.

Of the five measures designed to shed light on the citizenship behavior of the subjects, two supported the predictions of significant gains for the experimental group, two indicated a tendency toward improvement worthy of further investigation, and one failed to provide any usable data (see Table 10). Taken overall, the non-parametric measures used in this study tend to lend support to the findings of the parametric measure employed: namely that instruction in government and sociology under conditions of a saturated environment does produce measurable gains in certain areas of citizenship behavior.

Webb, Campbell and Schwartz note that, "If no single measurement is perfect, neither is any scientifically useless."[2] Further, they suggest:

> ". . . the most fertile search for validity comes from a combined series of different measures, each with its own idosyncratic weaknesses, each pointed to a single hypothesis."

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[2] Ibid., p. 174

TABLE 10

SUMMARY OF MAJOR HYPOTHESES IN THE STUDY INDICATING RESULTS OF THE STATISTICAL TESTS APPLIED TO EACH

Hypothesis	Result	Lev. of Sig.	Test Used
A. Experimental group will more closely resemble adults than will control group on their responses to an instrument on attitudes toward problems facing society.	Not Supported	NS	Sign
B. Experimental group will change toward more participation in school and community activities while control group will not.	Needs Further Study	.20	Sign
C. Counselors will rate experimental group as better citizens following treatment but will find no such change in behavior of control group.	Supported	.05	Sign
D. Experimental group will improve in attendance following the treatment but the control group will not.	Supported	.05	Sign
E. Experimental group will have fewer discipline referrals following treatment than before but no such change will be observed in control group.	Needs Further Study	.20	Sign
F. Experimental group will have fewer suspensions from school following treatment than before but no such change will be observed in control group.	Not Supported	NS	Sign
G. Experimental group will score significantly higher than will control group following treatment on a cognitive test of social studies concepts.	Supported	.01	Covariance

Campbell and Fiske suggest that the use of a series of measures tends to throw greater light on the truth, or falsity of a hypothesis and that a hypothesis which survives a series of measures is in fact stronger than one to which only one measure was applied.[3]

Measures Supporting Predicted Changes

Counselor Appraisals of Citizenship

When counselors of the subjects were asked to evaluate citizenship, they were instructed to include such factors as good attendance, a healthy attitude toward school, a good attitude toward teachers, participation in activities, and effective study habits (see In School Attitude Survey form in APPENDIX III). Counselors were not informed what the subject of the investigation was in order to avoid possible bias toward an experimental group.

All reported some difficulty in judging changes because the subjects, both experimental and control, constituted, in their opinion, the "better" students in the school population. In the case of the experimental group of seventy-three subjects, the counselors could determine changes in only twelve. All of the observed changes were positive. The one-hundred percent change in a positive direction [for those changing] is statistically significant. On the other hand, of the one hundred and nine subjects in the control group,

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[3]Donald T. Campbell and Donald W. Fiske, "Convergent and Discriminant Validation by the Multitrait-multimethod Matrix," Psychological Bulletin LVI (1959), 81-105.

twenty-one who were observed changing improved and fifteen regressed. This is a split which might have occurred by chance alone and has no statistical significance. While this measure is not of itself conclusive [in view of the relatively small number who changed], it may indicate that something happened to the experimental group which did not occur in the control group. Consequently, the result of the counselors' appraisals of changes in citizenship becomes one of several "hints" of change which may be meaningful when combined with the results of other measures.

Attendance Records

Attendance data revealed the most pronounced differences between the two groups. While the experimental group changed significantly in a positive direction, as predicted, the control group moved in a negative direction toward poorer attendance habits. If attendance can be considered a sign of good citizenship, or even of heightened interest in school, then the behavior of the students in the special class was indeed changed. The students became better citizens than they were before they took the class. Further, members of the control group exhibited poorer attendance in the year following the treatment as did the average of all students in the high schools (see APPENDIX IV).

Measures not Supporting Predicted Changes

Discipline Referrals

Discipline referrals [being sent to the vice principal

for disciplinary action] are signs of negative behavior. Only a minority of students in any school group would be expected to fall into this category. Consequently, the number within each group in this study would be expected to be small. Such indeed was the case, with ten members of the experimental and twenty-one members of the control group compiling records of discipline referrals. This number included referrals made either before or after the treatment period, and a change toward fewer referrals would be considered a sign of improved citizenship.

Eight of the ten reported cases in the experimental group were in a positive direction--that is, toward fewer discipline referrals. The Sign Test sets the probability of this occurring at $p = .055$. Twelve of the twenty-one changes reported in the control group were positive, resulting in a split of twelve to nine [twelve fewer and nine more referrals]. This split, according to the Sign Test might be expected by chance alone. The remaining subjects in both groups had no discipline referrals; consequently, the test deals exclusively with those who were involved in discipline problems. Even though the numbers are small, the area deserves further study. If any program can result in a reduction, however small, in disciplinary problems, then that program deserves careful scrutiny.

Activity Records

The subjects reported on their own activities. These reports were collected at the same time as the video taped

instrument was administered and were presented behind a type of smoke screen. The subjects were told that the school district was making a survey of the attitudes of graduating seniors to ascertain their attitudes toward the upcoming decade of the seventies. The activity questionnaire would be used to "standardize the results" of the questionnaire. This, of course, was deliberately misleading so as to conceal the real investigation which was underway and to protect the integrity of the unobtrusive approach to data collection.

One peculiarity which might be noted in the data presented in Table 10 was the apparent increase in probability for total activities over that listed for the sub-categories of activities. Respectively the probabilities are in-school activities, $p = .2296$; community activities, $p = .1611$; and total activities, $p = .0594$. This seeming inconsistency results from the fact that not all subjects changing, changed in both areas. There were cases in which an individual subject reported a change in only one of the two categories. The term "total" may be misleading in that it implies an additive process. The intent here was to tabulate the total number of subjects changing direction, whether that change was in one or both areas.

Of the two areas of activities reported by the subjects, the one which results in a probability beyond the .20 level set in this study for further investigation is community activities. The probability, .1611, obtains only for the experimental subjects. This hint of a difference might bear further

checking. Perhaps school work which takes students out into the community leads toward increased participation in the affairs of that community.

Suspensions from School

Suspensions from school number far fewer than do referrals for disciplinary reasons within the school. It is not unusual then to find a group of one hundred and eighty-two high school seniors (the sum of the experimental and the control groups), none of whom have ever been suspended from school. The choice of this measure was an unfortunate one, because no light was shed on the subject under investigation except, perhaps, that the type of students who take government and sociology in a summer session are less likely to be prone to disciplinary infractions which lead to suspensions.

Measures of Correlation

Responses to the video taped instrument (see Figure 5) indicated a greater degree of correlation between the subjects in the control and the subjects in the experimental groups than between either group of students and the adult judges. There were three exceptions to this trend, however. These were Items B (News Events of 1969), E (Television Commercials), and F (Air Pollution and Its Control).[4] The following observations might be made concerning these items:

Item B. There is a high correlation (.950) in the selection of responses between both the total control group

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[4]A complete tabulation of Item A appears on p. 75; tabulations of Items B through G are in APPENDIX IV

and the judges and between the Caucasian component of the control group and the judges. There is also a significant correlation between the responses of the Oriental students in the control group and the judges (.867). No such correlation exists for the experimental group; and the members of the Black and Mexican-American sub-groups, both experimental and control, evidence no measurable correlation in responses with any other group.

A tentative conclusion which might be drawn here is that the majority of students (except for Black and Mexican-American students) who were taught government in a traditional class tended to agree with the aggregate judgement of adults concerning the events of the day. The lack of correlation between members of the experimental group and the adults hints at the development of divergent views on current events. The researcher hesitates, however, to place total reliance in this evidence because the instrument was untried and must be accepted at face value only.

Item E. While a significant correlation is observed between the control subjects and the judges (.817), the correlation between the responses selected by the experimental and those selected by the control group to this item concerning television commercials is even higher (.917). In Item E, as in Item B Black and Mexican-American subjects do not select responses which correlate with any other group. The same is true in this case of the Oriental sub-group.

Item F. Only in Item F, which deals with the threat of air pollution, do the subjects in the experimental group show a correlation with the adult judges (.796) as predicted. However, the experimental group and the control group evidence an even higher level of correlation (.884). Again the Black and Mexican-American subjects, as well as the Oriental subjects, hold divergent views.

Conclusions Concerning Television Questionnaire. The pattern which emerges from the video taped instrument appears to indicate three general tendencies. First, Caucasian members of the control group agree more consistently with the adult judges (especially the Caucasian members of the adult panel) than does any other group. This can be observed in Items A,B,C,D,E, and F. Second, the ethnic minority groups--Black and Mexican-American and Oriental--are generally divergent in their views both with the judges and with their Caucasian agemates. Third, in the one item which discusses campus unrest (Dick Gregory at the University of Alabama), experimental and control groups, both as a whole and as subgroups, tend to correlate at a higher level with each other; none agree with the adult panel.[5]

One additional observation should be made at this point. In the schools, the experimenter worked alone with groups of up to one hundred students at a time while administering the video taped questionnaire. The instrument, in

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[5]No correlations were run between sub-groups of students because the research hypotheses aimed at sub-groups versus judges.

its television format, proved highly stimulating to all of the subjects, both adult and student. At the schools there was complete attention throughout the sessions. Even though each session took approximately one hour to complete there was no sign of restlessness nor of any discipline problem.

Finally, the lack of agreement between students and the adult panel may result from the fact that all of the members of that panel had accumulated between ten and forty-five additional years of experience with problems facing society. Apparently the instrument was not sensitive enough to detect degrees of maturity in these high school students. A more sophisticated instrument might shed brighter light in this area.

Parametric Measure of Cognitive Gains

The sub-test on reading in the social studies from the Iowa Test of Educational Development was selected for this study for two reasons. First, it made possible the use of an unobtrusive measurment of cognitive gains because this test was required of all twelfth grade students along with a general battery of tests to be given district-wide during the semester following the treatment. Second, this instrument was designed to measure cognition at a higher level than "knowledge," requiring interpretation and evaluation of materials.[6]

The most surprising, and probably the most important

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[6] See Supra, p.55.

finding discovered through the use of this test seems to be the difference in social studies learning found in the experimental group but only in the Caucasian subjects within that group. The covariant analysis indicated that a statistically significant gain was achieved at the .01 level by subjects instructed in an environment saturated with study trips and resource speakers (see Table 9). However, when the subjects were regrouped by ethnic background into three sub-categories and the same analysis run, the results showed only the Caucasian subjects maintaining a statistically significant gain. No such gains were isolated for Black and Mexican-American subjects [grouped together] nor for Oriental subjects.

The choice of sex as an independent variable in the analysis proved of mixed value. No significant differences in gains were found according to sex and no interaction between sex and treatment occurred in the total groups. Again the Caucasian group indicates a difference, this time at the .05 level of significance, with an interaction between sex and treatment. Male Caucasian subjects tended to achieve at a higher level when government and sociology were presented within a saturated environment while female subjects tended to achieve at a higher level when government and sociology were provided in a traditional program. This tentative finding indicates the need for further investigation. Perhaps Caucasian males more readily identify with business and community leaders when extensive field trips are used than do

Caucasian females. The majority of adults in the government and in business institutions visited by the class were male.

A similar conclusion might be drawn concerning the results of the analysis when run by ethnic groups. Nearly all of the community and business leaders encountered during the field trips and most of the resource speakers who came to the classroom were white. It does not seem too surprising that minority students would find little with which to identify in the business community and in government when most of the models presented to them are Caucasian. This may explain why the course appeared to be effective for Caucasian students but not for members of ethnic minority groups.

Summary of Findings

This study of the effects of instruction in twelfth grade social studies within a saturated environment resulted in the following findings:

1. Instruction in government and sociology during a summer session program taught in an environment saturated with field trips and resource speakers resulted in greater cognitive gains for twelfth grade students than did instruction in a traditional class in the same subjects during the same summer session, but this difference obtained only in Caucasian students so instructed.

2. Instruction in government and sociology for twelfth grade students during a summer session program in an environment saturated with field trips and resource speakers resulted in improved attendance and improved behavior in school.

3. Although the evidence is inconclusive, students instructed in government and sociology during a summer session program saturated

with field trips and resource speakers appear to have become more involved in activities, particularly activities in the community outside of school, and have tended to become less involved in school disciplinary problems.

4. Attitudes of twelfth grade students concerning problems facing society tend to correlate more highly among students instructed either under a saturated environment or a traditional class than do the attitudes of adults toward such problems correlate with students taught under either method.

Recommendations

As a result of the data collected and analyzed in this study, several recommendations are made:

1. While the writer does not intend to generalize the findings of a summer session program into the regular school year, programs such as the experimental class reported in this study utilizing a saturated environment should be tried and evaluated in different settings. This could be accomplished in many ways. Two are suggested here. First, two subjects such as sociology and government might be scheduled back-to-back in a double block during the regular school year in order to allow as much time as possible for trips and speakers, Second, the traditional school schedule might be arranged so that subjects are offered as entire blocks for shorter periods of calendar time. A student might take only one or two subjects at a time, thus making it possible for extended extra-class experiences. Further experimentation may reveal several workable adaptations of the program reported in this study.

2. The use of unobtrusive measurment offers a way to study either existing or new programs with data often already available in school district files without contaminating results with the reactive effects of experimental arrangements and testing. While one measurement may be far from adequate in providing conclusive information on an experiment, the combination of many different unobtrusive measures already available in

most schools may together point to conclusions worth implementing.

3. Further investigation into the differential effects of programs on separate ethnic groups is recommended in the hope that approaches will be developed which will hold more relevance for ethnic sub-groups than current programs which appear to work only for their Caucasian neighbors. Such research should be aimed in two directions: (a) the cognitive effects on various ethnic groups of instructional programs in the social studies should be pursued to determine under what conditions each group learns most effectively; and (b) the effects on various ethnic groups of social studies programs aimed at producing affective changes in high school students needs further evaluation.

4. The interaction of sex and treatment indicated in the covariant analysis in this study at the .05 level of significance for Caucasian students bears further investigation. Perhaps special programs for high school students should attempt to provide male and female adult models in more equal proportions.

5. The medium of video tape as a questionnaire tool merits further exploration. The built-in motivation which accompanies this medium may insure for the researcher a more whole-hearted participation by subjects and, therefore, a more accurate measurement, expecially in the area of attitudes.

6. A more definitive attitude instrument should be developed, field tested, and applied to innovative social studies programs to determine if citizenship can truly be taught through this discipline, either in a summer program or in a regular school year setting.

Conclusion

This study, conducted in its entirety with unobtrusive measurements made after the treatment, sought to compare

the effects of instruction in government in two types of high school classes--the traditional government and sociology class and an experimental program saturated with extra time, extra resources, and numerous field trips. In the event the external validity of the findings was affected by the element of self-selection on the part of subjects who elected either the experimental or the control groups, as well as by the complexity of the variables within the saturated approach, the writer has endeavored to describe the sample population in terms concrete enough for the reader to make his own interpolations.

That a difference should emerge in the light of the tremendous amount of time and effort expended is not of itself surprising. However, the apparent inability of the special program to produce measurable differences in the cognitive behavior of ethnic minority students is difficult to explain. It is hoped that the recommendation of this study calling for additional research to help predict the differential effects of proposed instructional programs on minority students will be implemented. Such research would prove of great help to educators who are daily faced with the problem of providing each student the type of instruction best fitted for his individual needs.

APPENDIX I

DAILY CALENDAR FOR GOVERNMENT IN ACTION: SOCIOLOGY

APPENDIX I

DAILY CALENDAR FOR GOVERNMENT IN ACTION: SOCIOLOGY

Date	Agency	Speaker	Subject	Location
July 1	John Bronson Company	D. S. Hirschfelt	Local Government	School
	Folsom School District	Mary Adamaitis	First Aid	School
	Sacramento City Unified School District	Elmer Robertson	Bus Safety	School
July 2	State Legislature	Senator Albert S. Rodda	State Government	Agency
		Assemblyman Edwin Z'berg	State Government	Agency
July 3	Congregation B'Nai Israel	Rabbi	Judaism	Agency
	California State Library	Allan Ottley	Function of State Library	Agency
July 7	Alcohol Center, Sacramento	Lenoa Kent	Alcoholism	School
July 8	De Witt State Hospital	Dr. John Freeman	Mental Health	Agency
	Animal Control Center	County Poundmaster	Animal Control	Agency

Date	Agency	Speaker	Subject	Location
July 8 (Cont.)	Sacramento Rendering Works	W. A. Koewler	Community Health	Agency
	Sacramento County Office	D. W. Mc Kenzie	Highway and Bridge Maintenance	Agency
July 9	Sacramento City Unified School District	Superintendent Paul Salmon	Our Schools	Agency
	Chamber of Commerce	Les Sanders	Dedication of Elkhorn Bridge	Site of Dedication
July 11	Bureau of Indian Affairs	Victor Courtwright	Indian Affairs	School
	State Advisory Commission, Indian Affairs	Wayne Red-Horse	Indian Affairs	School
	(self employed)	Marie Potts	Indian History in California	School
	State Advisory Commission, Indian Affairs	Bernice Pate	Indian Affairs	Agency
July 14	State Archives	Dr. Wm. N. Davis	Archives	Agency
	St. John's Lutheran Church	Dr. Robert Romeis	The Core City Church	Agency
	Sacramento Blood Bank	Mrs. Edward Babcock	Human Aid	Agency

Date	Agency	Speaker	Subject	Location
July 15	Buddhist Church, Sacramento	Rev. Yukawa Kosho	Buddhism	Agency
	Muslin Mosque, Sacramento	Pastor	Muslim Faith	Agency
	Confucius Church, Sacramento	Pastor	Confucianism	Agency
July 16	Sacramento State College	Aubrey Neasham	Old Sacramento	Agency
	Sacramento City College	A. Felthaus	Old Sacramento	Agency
	Cathedral of the Blessed Sacrament	Pastor	Catholicism	Agency
	Sacramento Bee	Frank C. Mc Peak	Role of the Press in the Community	Agency
July 17	State Highway Department	Arthur Elliott	Sacramento Freeways	School
July 18	Sacramento Boys' Ranch	Superintendent	Rehabilitation of Delinquents	Agency
	Preston School of Industry	Eugene Jones	Rehabilitation of Delinquents	Agency
	Kennedy Mine	Sybil Arata	Gold Recovery Processes	Agency
	California Department of Beaches and Parks	O. B. Tallant	Indians of California	Indian Grinding Rock

Date	Agency	Speaker	Subject	Location
July 21	C. & K. Sausage Co.	John Clauss	Meat Processing	Agency
July 22	U.S. Army	Representative	History and Current Activities of Army	School
	U.S. Marine Corps	Representative	History and Current Activities of Marine Corps	School
	U.S. Air Force	Representative	History and Current Activities of Air Force	School
	U.S. Coast Guard	Representative	History and Current Activities of Coast Guard	School
	U. S. Navy	Representative	History and Current Activities of Navy	School
	Selective Service Agency	Representative	History and Current Activities of Selective Service Agency	School
July 23	U.S. Department of Agriculture	Representative	Meat Inspection	School
	State of California	Representative	Meat Inspection	School
	U.S. Department of Agriculture	Representative	Poultry Inspection	School
	U.S. Department of Agriculture	Representative	Grading of Meat	School
	Department of Health	Representative	Role of Food in Health	School

Date	Agency	Speaker	Subject	Location
July 23 (Cont.)	County of Sacramento	Representative	Weights and Measures in Commerce	School
	City of Sacramento	Chief of Police Joseph E. Rooney	Police Sensitivity	School
July 24	California Department of Beaches and Parks	Ranger on Duty	California's Early Government	Benicia Capitol Site
	U.S. Army	Representative	Function of an Arsenal	Benicia Arsenal
July 25	University of California at Davis	Students	Asian Americans	School
	Local Law Office of Speaker	Henry Taketa	World War II Relocation of Japanese Americans	School
	AME Church (Black)	Rev. Cyrus Keller	Equal Opportunity	School
	----------	Dr. O. J. Thomas	Civil Rights	School
July 26	California Historical Society	Rod Rulofson	Spanish Land Grants	Vaca Pena
	American Red Cross	Representative	Role of the Red Cross	Vacaville
July 29	California Highway Patrol	Representative	Inspection Stations	Highway Patrol Academy
July 30	California Department of Public Health	Representative	Vector Control	School

Date	Agency	Speaker	Subject	Location
July 30 (Cont.)	Sacramento Medical Society	Stuart Steinberg	Drugs and Health	School
July 31	Sacramento Tuberculosis Association	Representative	Smoking and Health	School
	Sacramento County	Representative	Local Government and Courts	Agency
August 1	Elk Grove School District	Representative	Rural Schools	Agency
	Elk Grove Justice Court	Representative	Local Government and Courts	Agency
	State of California	Representative	Fish Propagation	State Fish Hatchery
August 4	City of Sacramento	Representatives	City Government	Agencies
August 6	City of Fresno	Representatives	Redevelopment and City Planning	Agencies
August 8	Federal Government	James Park	Rehabilitation of Criminals	San Quentin Prison
	U. S. Army Engineers	Lt.Col. John Kern	Bay Model	San Francisco
August 11	Sacramento Concilio	Representatives	Chicano Problems	Agency
August 12	City of Sacramento	John Bronson	City Government	School

Date	Agency	Speaker	Subject	Location
August 12 (cont.)	Alhambra Theater	R. O. Mear	Recreation in Sacramento	Agency
	Private Mortuary	N. G. Culjis	Treatment of Death in America	Agency
August 13	Elk Grove Meat Co.	Representative	Free Enterprise	Agency
	California Highway Patrol	Representative	Social Control	Agency
August 14	Sacramento Medical Center	Dr. Gordon Cumming	Hospitals and Community Health	Agency
August 15	San Francisco Stock Exchange	Representatives	Stock Market Activities	Agency
	Chinese Historical Society (San Francisco)	Representatives	Ethnic Relations	Agency
	San Francisco Police Department	Julius Hiatt	Crowd Control	Agency
August 19	Great Western Broadcasting Co. (Channel 10, Sacramento)	Representatives	Communications Media	Agency
	University of California at Davis	Representatives	Campus Life	Agency
August 20	City of Sacramento	Representatives	City Government and Parks and Recreation	Agency

Date	Agency	Speaker	Subject	Location
August 20 (Cont.)	City of Sacramento	Representative	City Maintenance	Agency
	City of Sacramento	Representative	Agriculture	City Hall
August 21	(Individuals)	Local Citizens of Advanced Age	Problems of Aging	School
	Sacramento Union	N. Nichols	The Press and Government	School

APPENDIX II

SAMPLES OF STUDENT REPORTS AND PROJECTS DONE DURING THE SUMMER SESSION OF 1969 IN THE EXPERIMENTAL CLASS IN GOVERNMENT

EXAMPLE OF STUDENT WORK IN RESPONSE TO A PROJECT ON CITY PLANNING

LATROBE

CITY

of the

FUTURE

July 29, 1969

Note: Each student in the special class was asked to plan his ideal city. A plot of rural land was selected and the students physically visited the site. This project was assigned following class study trips to the City of Sacramento offices and sessions with resource speakers who discussed city planning with the students.

L A T R O B E

Latrobe is a Federal District of the United States. It is an experimental city of the future. The city was founded on Jan. 1, 2000 a little over thirty-seven years ago.

Latrobe has no city government but does have a commision set up by Congress and an appointed Mayor, appointed by the President of the United States and approved by Congress. The Commision and the Mayor's office are located in the Federal Buildings that are located between "H" and "J" streets and between 8th and 10th streets, downtown.

The citizens of Latrobe vote on the decisions of the Commision since they didn't choose their representitives but they were appointed. Still, after the citizens have voted Congress then makes the final decision. The only other regular election they may vote on is the Presidental Election every four years.

Latrobe, being a Federal District does have it's advantages such as no State or City taxes. It must be remembered that Latrobe is a Federal District because it is an experimental city of the future.

Latrobe has thirteen schools to accommodate the youth of the city. The population of Latrobe is 68,730. There are five churches and six fire stations although they are seldom called on any major fires since every home is required by law to have a fire detection and sprinkler systems. There are two major shopping centers in the city located at opposite ends of the city. There are two medical centers which include all doctor and dentist facilities. There is one hospital large enough to accommodate

850 patients. The Latrobe Animal Shelter is also the pound. The Pest Control sprays homes and bug ridden areas at a minimal charge. The Power Station is located at one edge of the city and recieves it's power from a muscular source located in the Nevada Desert. The Department of Water and Power distributes the water and power to it's customers. All sewage in the city is sent through pipes to the sewage plant where it is compressed into one ton blocks, perfumed, and trucked to the ocean where ships take it out and dump it overboard. The blocks are about 30'x30'x30' and weigh one ton. Pacific Picturephone Company was formerly known as the Pacific Telephone Company. The Latrobe Transit Authority is an underground electric subway. It is computerized which schedules all stops according to the positions of the other trains. After reaching one end of the line the train merely switches directions and returns on the same course. Since their are only two trains used at any one time their is no possibility of two trains colliding except at the main station and the computor there controls that possibility to make sure it doesn't happen. The trains are capable of reaching speeds of up to 120 m.p.h. but the maximum speed that is ever reached in the system is 80 m.p.h. The speed is also controlled by computor. Latrobe has one radio station and receives all Television broadcasts from neighboring areas. There are two private country clubs in the city and two public parks. The Fair Grounds is used every year for the annual county fair as well as other funcions.

The Latrobe Cemetery isn't very large since Latrobe is a fairly new city. The Mortuary is combined with the Cemetary. The Railroad station is located on Latrobe Road west of town. The City-County Library is located downtown and has over 35,000 volumes. There is the main Post Office located in the Federal Buildings and two branches located in the North and West part of town.

The main street is 7th Street which runs from the South Area, underneath South Park Lake and into town. "I" Street runs from the Mayor's Mansion in the exclusive North Area into town right up to the Federal Buildings. In case of emergencies the Mayor can trip a switch in his electric limosine that will make all the signals on "I" Street turn Green and will also sound a warning at each intersection that the Mayor's car is approaching in the sound of a long wailing sound. After reaching the Federal Garage he trips the switch back to off and the signals continue operating on a regular basis. This system is hardly used however.

The West Area is the most densely populated while the North Area is the most sparsely.

Most all cars in the city are electric except for a few old relics that can hardly operate and couldn't if they wanted to because there are no longer any gas stations. The electric car is a lot quieter than the old gasoline operated automobiles.

There is a Municipal Airport located about one mile down Jackson Highway, (that will soon be made into a freeway). The legislation for this move was introduced quite a few years ago but wasn't passed on the argument that it would be to noisy. With the coming of more and more electric cars the bill was passed.

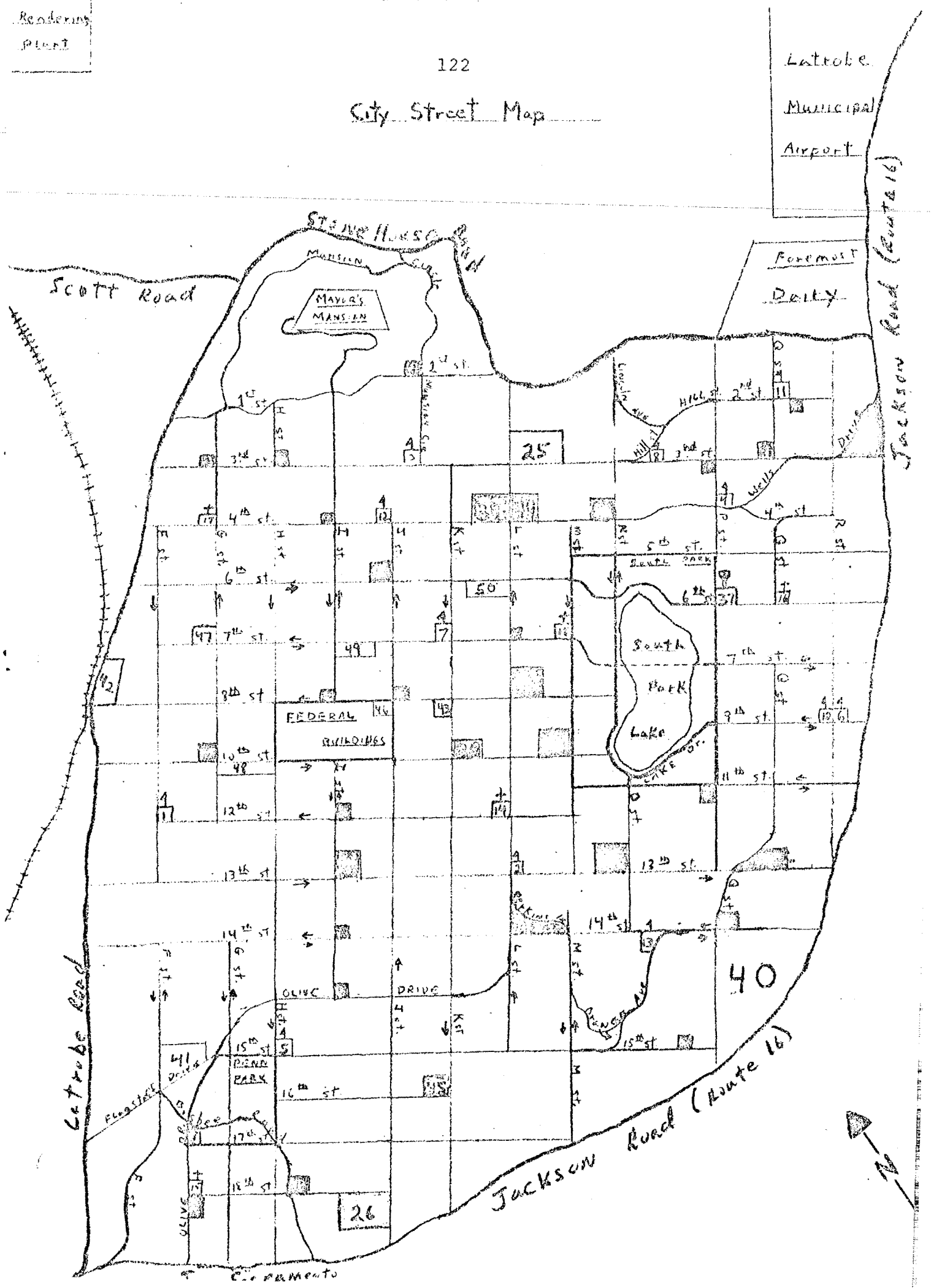
There is a Foremost Dairy located just south of the airport. Most of the milk of the city is processed by this dairy. The Rendering Plant is located north of the city about one mile. The Mayor sometimes complains of the odor but it is felt that it is very unlikely that the odors would travel that far. There have been great changes in the rendering plants nowadays with most of the smelly work done underground. This is another reason for doubting the Mayor's long nose.

Latrobe has a small spur line with the railroad which will be removed within a few years. The line will be replaced by a high speed monorail to Sacramento. The monorail will be capable of reaching speeds of 150 m.p.h. and by it you will be able to travel the 39 miles in about 15 minutes. From Sacramento you can then catch a train to just about anywhere.

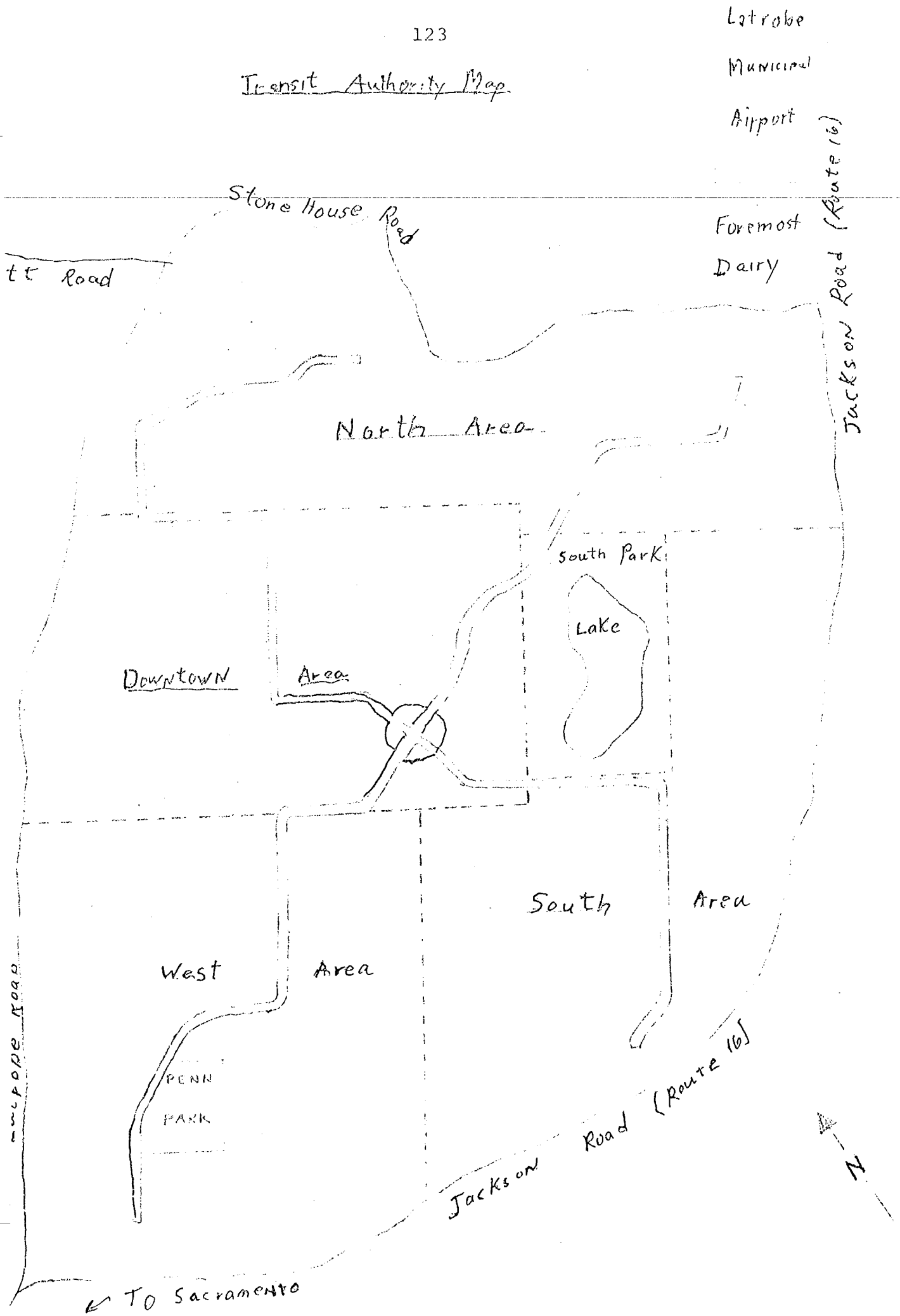
It is no doubt that Latrobe is an interesting city and I hope it will be a guide to follow in the building of the cities of the future.

NO.	DESCRIPTION	LOCATION	CODE
1.	Century Elementary School	12th and F St.	Flag
2.	Armington " "	13th and L St.	"
3.	North Park " "	3rd and Mansion Cir.	"
4.	Cal Vista " "	4th and P St.	"
5.	Washington " "	15th and H St.	"
6.	South Park " "	9th and R St.	"
7.	Larson " "	7th and K St.	"
8.	California " "	3rd and Hill St.	"
9.	Olive Jr. High "	17th and Olive Drive	"
10.	Jackson " "	9th and R St.	"
11.	Lincoln " "	2nd and Q St.	"
12.	Latrobe Sr. High "	4th and J St.	"
13.	Orange " "	14th and Orange Ave.	"
14.	St. Anne's Church (Catholic)	12th and L St.	Cross
15.	St. Paul's Methodist Church	18th and Olive Drive	"
16.	Temple B'NAI Israel (Jewish)	6th and Q St.	"
17.	St. George's Episcopal Church	4th and G St.	"
18.	First Baptist Church of Latrobe	7th and M St.	"
19.	Latrobe Fire Station #1	8th and J St.	Red
20.	" " " #2	14th and I St.	"
21.	" " " #3	3rd and Q St.	"
22.	" " " #4	14th and Q St.	"
23.	" " " #5	3rd and E St.	"
24.	" " " #6	18th and Bisbee Rd.	"
25.	North Side Shopping Center	3rd and L St.	Lt. Blue
26.	West Side Shopping Center	18th and J St.	"
27.	West Side Medical Center	13th and I St.	Orange
28.	North Side Medical Center	4th and N St.	"
29.	Latrobe Community Hospital	8th and L St.	"
30.	Latrobe Animal Shelter	13th and Q St.	Purple
31.	Latrobe Pest Control	10th and G St.	"
32.	Latrobe Electrical Power Station	3rd and Wells Drive	"
33.	Latrobe Water and Power	10th and M St.	"
34.	Latrobe Sewage Disposal Plant	13th and O St	"
35.	Pacific Picturephone Company	6th and J St.	"
36.	Latrobe Transit Authority Station	10th and K St.	Black
37.	Latrobe Radio Station	6th and P St.	Ant.
38.	South Side Country Club	14th and L St.	Brown
39.	North Side Country Club	4th and L St.	"
40.	Latrobe Fair Grounds	14th and Q St.	Yellow
41.	Latrobe Mortuary and Cemetery	F St. and Flagstaff Drive	
42.	Latrobe Railroad Station	8th and Latrobe Road	
43.	Latrobe City-County Library	8th and K St.	
44.	United States Post Office (North)	4th and L St.	Dk. Blue
45.	" " " " (West)	16th and K St.	"
46.	Latrobe Police Station	8th and J St.	
47.	Latrobe Daily News	7th and G St.	
48.	Public Parking Lot	10th and H St.	Dk. Green
49.	" " "	7th and I St.	"
50.	" " "	6th and L St.	"

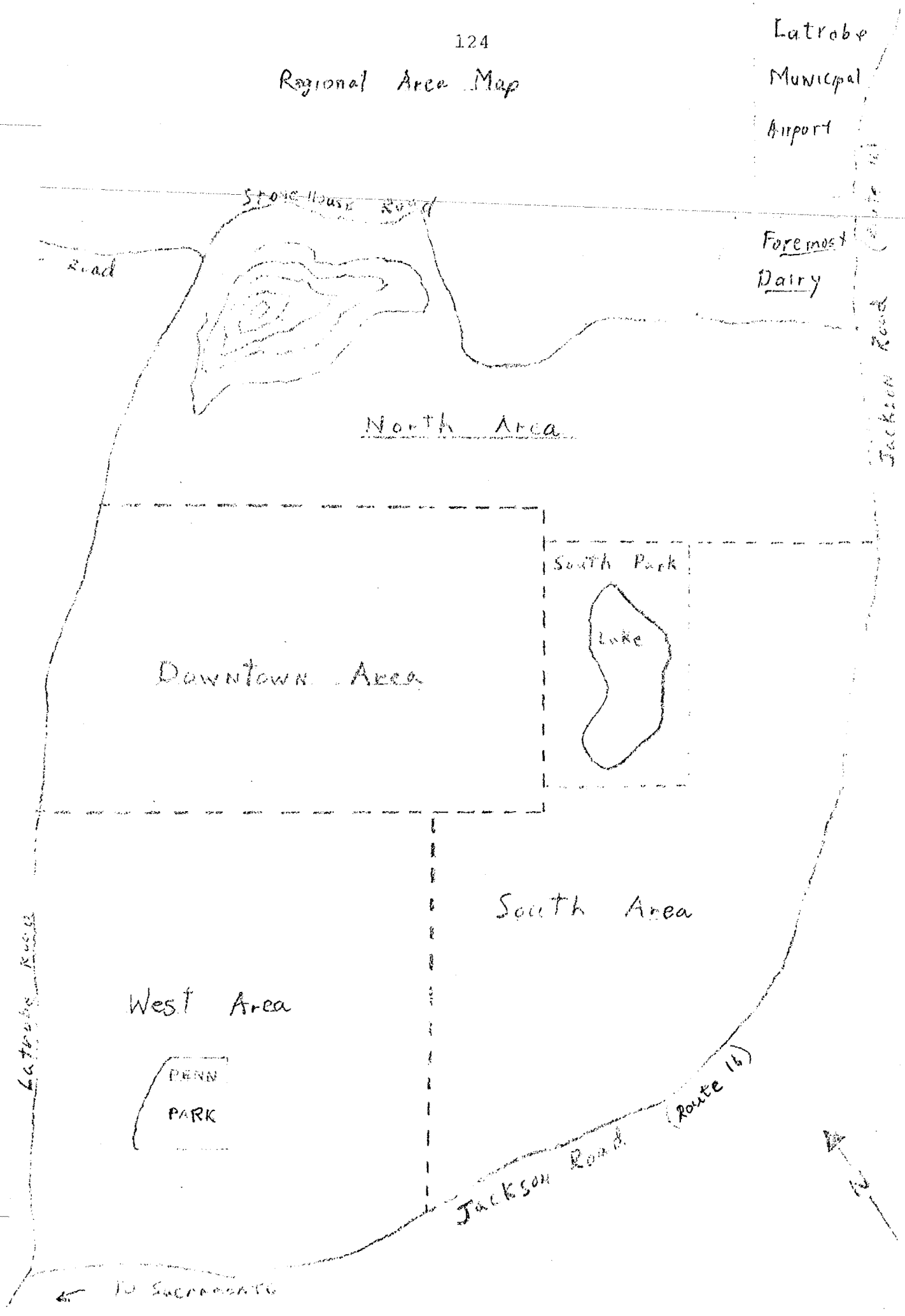
City Street Map



Transit Authority Map



Regional Area Map



EXAMPLE OF STUDENT REPORT ON RESOURCE SPEAKER AT SCHOOL

DATE: July 25, 1969
PLACE:School Auditorium

The next speaker was Reverend Cyrus Keller. He is the pastor of the Downtown African Methodist Episcopal Church.

He told us that in 1787 the church was organized as a protest of negros [sic] in Philadelphia. There were three negroes protesting. Richard Allen started the church when he bought his freedom from his master for $2000. Their main beliefs are that the negor [sic] must help himself, and must not depend on the white man.

He said that many of their beliefs are just like the Catholics or Christians.

I can't say too much because he didn't get to talk for a very long time but he seemed to be a nice man, he wasn't prejudiced against the white man. He seemed to care about everybode [sic] in the audience.

EXAMPLE OF A STUDENT REPORT ON A STUDY TRIP

STATE OF CALIFORNIA ARCHIVES BUILDING July 14, 1969

When we entered the State Archives building we signed in. Mr. Davis, the Chief of the State Archives guided us through the building. Archives means two things, the basic records which are kept permentally [sic] and the building in which the records are kept. In Washington, D. C. there is a National Archives where records of the national government are kept. The State Archives only keeps what involves the state government. Only the most important records come to the State Archives. The standards are agency programs, historical and rights of the people. Documents of the times are kept so people in the future may see what life was like in the past.

The archives has been a division of the Secretary of State since 1849. California was admitted to the Union in 1850, so the Archives was run befor [sic] California was a state. It was started in San Jose, our first state capital.

At the Archives we saw many important documents and records. Some of the only records which survived the San Francisco eqrthquake are at the Archives. The most important records are the case records of the Supreme Court. There is also a large number of military records and first driver licenses. There is also a vault which is kept at a certain humity [sic] so the papers won't brittle. There is a fire

alarm, buglar warning [sic] and a smoke alarm. The original State Constitution in Spanish and English is kept there. There are also the Census and maps of the valley, drawn by those who wanted land.

We then left the vault and went to the repair shop. Old records are laminated to preserve them. The steps are

1. gather information for missing parts
2. deacidfication [sic]
3. repair work
4. lamination
5. laminating machine
6. heat and pressure
7. cut and bind

The State Archives Building is a valuable palace [sic] to have. One may learn about the past and use the valuable information to make a better future. It would also be a great place to go and find information for a report. I did not know there was such a place as the Archives Building. I think it will help me in the future for information, because important government documents are kept there. I feel if more people knew about the archives they could bet better facilities and maybe put som displays out for the people.

APPENDIX III

SAMPLES OF THE INSTRUMENTS USED IN THE COLLECTION OF DATA

SOPHOMORE YEAR	JUNIOR YEAR	SENIOR YEAR

INSTRUCTIONS: Please indicate in the boxes above the letters of the activities listed below in which you have participated during your senior high school years. You may use the same letter in two or more of the boxes, as applicable.

School Activities

A. Officer, school club

B. Chairman, school club committee

C. Member, school club committee

D. Officer, class government

E. Member, class committee

F. Chairman, class committee

G. Officer, student body

H. Chairman, student body committee.

I. Member, student body committee

J. Captain, school athletic team

K. Member, school athletic team

L. Cheer leader or assistant

M. Participant, music group

N. _____*

O. _____*

Community Activities

P. Officer, social club

Q. Chairman, social club

R. Member, social club committee

S. Officer, church group

T. Chairman, church group committee

U. Member, church group committee

V. Worker, charitable agency

W. Volunteer, community help project (tutoring, etc.)

X Volunteer, political campaign

Y. _____*

Z. _____*

*If none of the above choices apply, fill in blanks as necessary and insert the letter of each blank used in the boxes above.

Note: the above instrument was administered with the videotaped test to all subjects in the study.

IN SCHOOL ATTITUDE SURVEY

School of Education

University of the Pacific

To: _____ School: _____
(Name of Counselor)

The students whose names appear on the attached sheets are involved in a doctoral study being conducted through the University of the Pacific, Stockton, California, using unobtrusive measurement. None of the students is aware that he is being evaluated; consequently none should be apprised of the circulation of this instrument.

Please make a judgement concerning the citizenship of each student and circle either S (same), I (improved), or R (regressed) concerning his citizenship during the Fall Semester, 1969, as compared to his citizenship behavior during the preceding school year. Include in your judgement such factors as good attendance, healthy attitude toward school and toward teachers, participation in school activities, and effective study habits.

Thank you for your cooperation in this study.

Edward B. Morrison
Staff Training Office
Sacramento City Unified
School District

In-school Attitude Survey University of the Pacific

TAG	NAME OF STUDENT	I	S	R
2200	XXXXXXXX,XXXXXXXX			
2200	XXXXXXXXXX, XXXX			
2200	XXXXXX, XXXXXXXX			
2290	XXXX, XXXXXXXX			
2290	XXXX, XXXXX			
2290	XXXXX, XXXXX			
2290	XXXXX, XXXXX			
2290	XXX, XXXXXXX			
2290	XXXXXXX, XXX			
2295	XXXX, XXXXX			

Meaning of Symbols: I = Improved in Citizenship

S = Same (no change) in Citizenship

R = Regressed in Citizenship

All comparisons are to be made between the Fall Semester, 1969, and the preceding school year.

VIDEO TAPED QUESTIONNAIRE
ON ATTITUDES TOWARD
PROBLEMS FACING SOCIETY

Note: These instructions are to be read orally to subjects prior to the playing of the first taped segment

Instructions to Participants:

You are about to see seven short television programs which have been recorded on video tape. After each program, you will be given a set of nine (9) cards, each of which contains a statement related to the program just viewed. Please arrange these cards as follows:

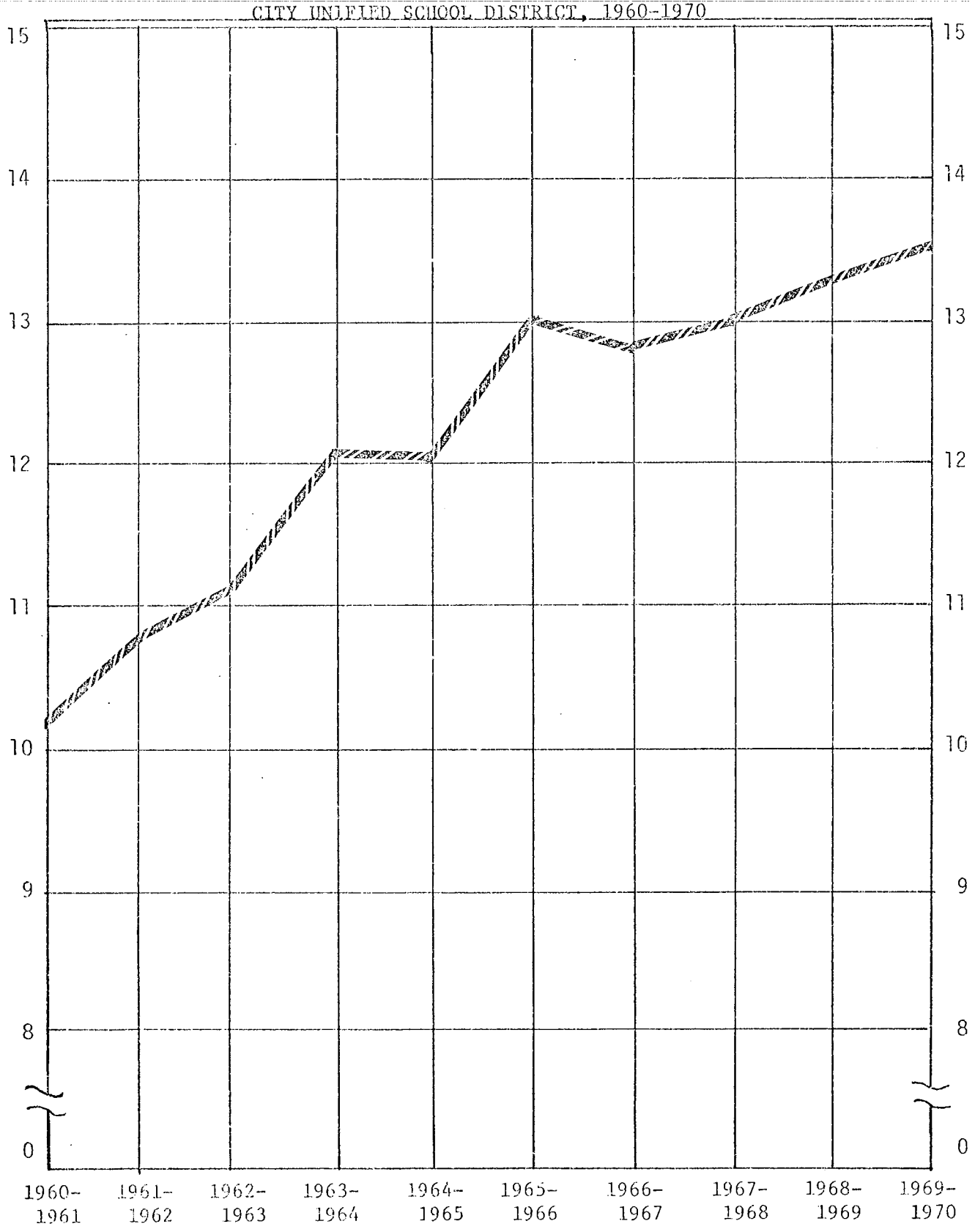
1. Read each card carefully.
2. Sort the responses into three piles--the three responses you consider to be the most reasonable (based upon your own knowledge and experience), the three responses you consider to be the least reasonable, and the remaining group of three cards.
3. Take the pile of "reasonable" responses you have selected and take out the one response you think is the best of the three.
4. Go the the pile of "least reasonable responses" you have selected and take out the one response you feel is worst of all.
5. Rearrange all nine cards in the following order (face-up):
   a. The "best"response on top.
   b. The remaining "reasonable" responses next(order of these two is not important).
   c. The three responses you did not consider either "reasonable" or "least reasonable."(again order of these three is unimportant).
   d. The two "least reasonable" responses left after you removed the "worst response."(order of these two cards is not important)
   e. The"worst" response on the bottom of the stack.
6. Place the rubber band provided around the stack of cards you have rearranged and put the whole group into the clasp envelope given you.

We will repeat this procedure for each television program with a different set of cards. If you do not understand any individual printed response, or if you have any questions at any time, raise your hand and I will help you. We will not begin the next segment of video tape each time until everyone has had time to organize the cards for the previous tape and put them in the envelope.

APPENDIX IV

DISTRICT ATTENDANCE TRENDS, COMPUTER PROGRAM USED IN COVARIANT ANALYSES, AND ADDITIONAL DATA FROM PARAMETRIC AND NON-PARAMETRIC MEASURES USED IN STUDY

AVERAGE NUMBER OF DAYS MISSED PER SCHOOL YEAR BY SENIOR HIGH SCHOOL STUDENTS FOR ANY REASON IN THE SACRAMENTO CITY UNIFIED SCHOOL DISTRICT, 1960-1970



WEIGHTED SCORES AND RANKINGS FOR EACH QUESTION ON ITEM B OF VIDEO TAPED QUESTIONNAIRE BY TOTAL GROUPS AND BY ETHNIC SUB-GROUPS

POSSIBLE RESPONSE TO ITEM OF VIDEO-TAPED QUESTIONNAIRE	TOTAL GROUPS			CAUCASIAN ONLY			BLACK AND MEXICAN-AMERICAN ONLY			ORIENTAL ONLY	
	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.
B-1. The introduction of the Nixon Doctrine--Frank Reynolds.	-0.18	-0.33	-1.17	+0.08	-0.25	-1.33	-1.25	+0.33	-0.83	-0.35	-0.10
	4th	5th	6th	3rd	5th	7th	6.5	3.5	6th	5th	5th
B-2. The beginning of the U. S. troop withdrawals from Viet Nam--John Scali.	+2.31	+2.02	+1.27	+2.17	+1.98	-0.83	+2.88	+2.47	+2.17	+2.44	+1.98
	2nd	2nd	3rd	2nd	2nd	5th	1.5	2nd	2nd	2nd	2nd
B-3. The isolation of the gene which controls heredity--Edward P. Morgan.	-1.17	-0.31	+0.28	-0.98	+0.02	0.00	-1.25	-1.70	-0.33	-0.40	-0.37
	7th	4th	4th	8th	4th	3rd	6.5	8th	3rd	7th	6th
B-4. The emergence of the Palestinian Nationalist movement in the Middle East--Barrie Dunsmore.	-1.18	-1.03	-1.39	-0.94	-1.19	-1.25	-2.00	-1.67	-1.67	-1.56	-0.54
	8th	7th	7th	7th	7th	6th	8th	7th	8.5	8th	7th
B-5. Problems of pollution, hunger, and disease on earth--Jules Bergman.	+3.38	+3.17	+3.39	+3.41	+3.19	+3.33	+2.00	+3.33	+3.50	+3.54	+3.04
	1st	1st	1st	1st	1st	1st	3rd	1st	1st	1st	1st
B-6. Nixon's successful campaign to get people to back his Viet Nam policy--Tom Jarriel.	-0.55	-1.22	-1.72	-0.80	-1.32	-2.33	+0.63	-1.20	-0.50	-0.33	-1.10
	5th	8th	9th	6th	8th	9th	4th	6th	5th	4th	8th
B-7. The lessening of chances for negotiation of the Arab-Israeli war--Russell Jones.	-0.61	-0.49	-0.44	-0.65	-0.71	-0.17	-2.88	-0.60	-1.67	-0.38	+0.15
	6th	6th	5th	5th	6th	4th	9th	5th	8.5	6th	3rd
B-8. The United States' discovery that it is really "alone" in Viet Nam--Ted Koppel.	+0.31	+0.37	+1.56	+0.05	+0.54	+2.33	+2.88	+0.33	0.00	+0.35	-0.06
	3rd	3rd	2nd	4th	3rd	2nd	1.5	3.5	4th	3rd	4th
B-9. Ted Kennedy's accident and its political implications--Bill Lawrence.	-2.29	-2.38	-1.61	-2.45	-2.30	-1.75	-1.00	-1.80	-1.33	-2.38	-2.90
	9th	9th	8th	9th	9th	8th	5th	9th	7th	9th	9th

Note: This tape contained a year's-end newscast with each reporter stating his prediction for the upcoming decade.

WEIGHTED SCORES AND RANKINGS FOR EACH QUESTION ON ITEM C OF VIDEO TAPED QUESTIONNAIRE BY TOTAL GROUPS AND BY ETHNIC SUB-GROUPS

POSSIBLE RESPONSE TO ITEM OF VIDEO-TAPED QUESTIONNAIRE	TOTAL GROUPS			CAUCASIAN ONLY			BLACK AND MEXICAN-AMERICAN ONLY			ORIENTAL ONLY	
	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.
C-1. People shouldn't make fun of death.	-1.03	-0.72	-1.72	-1.56	-0.91	-1.50	+1.00	-1.69	-2.17	-0.56	-0.52
	7th	6th	8.5	8th	7th	9th	2nd	9th	7.5	6th	6th
C-2. This sketch is a good example of satire which is effective in correcting flaws in our society.	+1.58	+1.46	+3.06	+1.88	+1.57	+3.25	+0.38	+1.67	+2.67	+1.27	+1.33
	1st	2nd	1st	1st	2nd	1st	3rd	1st	1st	2nd	2nd
C-3. The funeral business should be regulated by the government at the state or national level.	+0.19	-0.71	+1.11	+0.24	-0.93	+0.42	-1.25	+0.06	+2.50	+0.48	-0.56
	4th	5th	3rd	4th	8th	3rd	9th	4th	2nd	4th	7th
C-4. Funeral directors often take advantage of the grief of relatives to make a profit for themselves.	+0.85	+1.06	-0.28	+0.79	+1.23	-1.08	-0.63	+0.83	+1.33	+1.29	+0.77
	3rd	3rd	5th	3rd	3rd	7.5	7th	3rd	4th	1st	3rd
C-5. This is just another example of our sick society.	-1.34	-0.87	-1.72	-1.57	-0.84	-1.08	+0.25	-0.70	-3.00	-1.00	-1.06
	9th	8th	8.5	9th	6th	7.5	4th	7th	9th	7th	8th
C-6. When contracting for a funeral, the person should take along someone not emotionally involved to help make the proper arrangements.	+1.53	+1.83	+1.39	+1.74	+2.18	+1.25	+1.25	+1.03	+1.67	+1.23	+1.36
	2nd	1st	2nd	2nd	1st	2nd	1st	2nd	3rd	3rd	1st
C-7. Only a complete idiot would be taken in by the type of funeral company depicted in this sketch.	-0.59	-0.85	-0.83	-0.23	-0.81	-0.42	0.00	-0.67	-1.67	-1.42	-1.08
	6th	7th	6th	6th	5th	5th	5.5	6th	6th	8th	9th
C-8. We need an educational program in this country to help prepare people to handle funeral arrangements.	-1.18	-1.19	0.00	-1.07	-1.43	-0.42	-1.00	-1.30	+0.83	-1.48	-0.50
	8th	9th	4th	7th	9th	5th	8th	8th	5th	9th	5th
C-9. If the individual depicted in this sketch had made arrangements in advance, he wouldn't have been taken in by this unscrupulous company.	-0.03	-0.04	-1.00	-0.16	-0.07	-0.42	0.00	-0.43	-2.17	+0.19	+0.25
	5th	4th	7th	5th	4th	5th	5.5	5th	7.5	5th	4th

Note: This tape contained a comedy duo's routine which used as its subject matter the high cost of funerals.

WEIGHTED SCORES AND RANKINGS FOR EACH QUESTION OF ITEM D OF VIDEO TAPED QUESTIONNAIRE BY TOTAL GROUPS AND BY ETHNIC SUB-GROUPS

POSSIBLE RESPONSE TO ITEM OF VIDEO-TAPED QUESTIONNAIRE	TOTAL GROUPS			CAUCASIAN ONLY			BLACK AND MEXICAN-AMERICAN ONLY			ORIENTAL ONLY	
	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.
D-1. It is only fair that the manufacturer of a potentially harmful product should pay the cost of educating the public concerning its safe use.	+1.92 2nd	+1.30 3rd	+2.72 2nd	+2.30 2nd	+1.29 3rd	+3.00 1st	+0.25 3rd	+1.93 3rd	+2.17 3rd	+1.56 3rd	+0.94 4th
D-2. Free enterprise is the basis of our political system, and this type of control would be an unfair restriction on the freedom of action of a manufacturer.	-1.67 9th	-1.51 9th	-1.56 7th	-1.79 9th	-1.43 8.5	-1.92 7th	0.00 5th	-1.57 9th	-0.83 5.5	-1.63 8th	-1.70 9th
D-3. The use of drugs is up to the individual and the manufacturer should not be made responsible for the foolish actions of an individual citizen.	-1.46 8th	-1.10 6th	-1.00 6th	-1.85 9th	-0.96 6th	-0.42 5th	-0.25 7th	-1.03 7th	-2.17 7.5	-1.10 5th	-1.48 8th
D-4. Responsible citizens should follow the example of the American Cancer Society and its anti-smoking campaign and produce similar television commercials warning of the dangers of drug abuse.	+1.62 3rd	+1.52 2nd	+1.11 4th	+1.58 3rd	+1.44 2nd	+1.25 4th	+2.25 1st	+2.07 2nd	+0.83 4th	+1.60 2nd	+1.40 3rd
D-5. Most people are unaffected by television advertising of drug products.	-1.36 6th	-0.98 5th	-2.72 9th	-1.26 6th	-0.95 5th	-2.58 8th	-2.25 9th	-1.33 8th	-3.00 9th	-1.56 9th	-0.85 5th
D-6. Education on drugs should come from the parents, not the drug companies.	-1.42 7th	-1.17 7th	-0.83 5th	-1.51 7th	-1.29 7th	-0.83 6th	0.00 5th	-0.50 4th	-0.83 5.5	-1.50 7th	-1.23 7th
D-7. Potentially dangerous medications should be sold on a prescription basis only.	+2.68 1st	+2.33 1st	+3.06 1st	+2.80 1st	+2.38 1st	+2.83 2nd	+2.00 2nd	+2.13 1st	+3.50 1st	+2.79 1st	+2.04 1st
D-8. The public schools should take on the responsibility for educating the public about drug use.	+0.94 4th	+0.91 4th	+1.39 3rd	+0.95 4th	+0.96 4th	+1.50 3rd	0.00 5th	-0.53 5th	+2.50 2nd	+1.21 4th	+1.62 2nd
D-9. The problem of drug abuse is greatly over-emphasized in the United States by the news media.	-1.25 5th	-1.30 8th	-2.61 8th	-1.17 5th	-1.43 8.5	-2.83 9th	-2.00 8th	-1.00 6th	-2.17 7.5	-1.27 6th	-1.04 6th

Note: This tape contained a portion of a local television newscast in which a state legislator proposed drug-control legislation

WEIGHTED SCORES AND RANKINGS FOR EACH QUESTION ON ITEM E OF VIDEO TAPED QUESTIONNAIRE BY TOTAL GROUPS AND BY ETHNIC SUB-GROUPS

POSSIBLE RESPONSE TO ITEM OF VIDEO-TAPED QUESTIONNAIRE	TOTAL GROUPS			CAUCASIAN ONLY			BLACK AND MEXICAN-AMERICAN ONLY			ORIENTAL ONLY	
	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.
E-1. It is easy to see that television commercials are written for the "twelve-year-old" mind.	-0.34	+0.07	+0.72	-0.14	-0.02	+1.08	+0.38	+0.47	0.00	-0.63	-0.10
	7th	5th	4th	6th	5th	3rd	3.5	4th	5.5	7th	6th
E-2. The average American is unaffected by television advertising.	-2.25	-1.84	-3.83	-2.28	-1.95	-3.75	-1.63	-2.20	-4.00	-2.21	-1.56
	9th	9th	9th	9th	8th	9th	9th	9th	9th	9th	9th
E-3. Television commercials are often dishonest.	+0.36	+0.50	+1.17	+0.58	+0.64	+0.67	-0.38	+0.40	+2.16	0.00	+0.19
	4th	4th	3rd	4th	4th	4th	7th	5th	1st	6th	4th
E-4. Television advertising should be viewed with a sense of humor	+1.14	+1.39	+0.28	+0.85	+0.85	0.00	+1.63	+1.47	+0.83	+0.63	+1.88
	2nd	1st	5th	3rd	3rd	5th	1st	2nd	3.5	3rd	1st
E-5. Carol Burnett is biting the hand that feeds her when she makes light of television advertising.	-1.56	-1.78	-2.11	-1.94	-1.96	-1.92	0.00	-1.47	-2.50	-1.08	-1.48
	8th	8th	8th	8th	9th	8th	6th	8th	8th	8th	8th
E-6. Americans are led by television commercials to buy products they don't need.	+1.93	+1.07	+2.17	+1.88	+1.00	+1.50	+0.25	+1.63	+3.00	+2.12	+0.92
	1st	2nd	2nd	1st	1st	2nd	5th	1st	2nd	1st	2nd
E-7. The average American is dissatisfied with television advertisers.	-0.25	+0.02	-0.28	-0.58	-0.49	-0.42	+0.63	-0.83	0.00	+0.15	-0.73
	6th	6th	6th	7th	7th	7th	2nd	7th	5.5	4th	7th
E-8. The content of television advertising lends itself to satirization.	+1.02	+0.70	+2.28	+1.19	+0.86	+3.00	+0.38	-0.17	+0.83	+0.94	+0.75
	3rd	3rd	1st	2nd	2nd	1st	3.5	6th	3.5	2nd	3rd
E-9. There are many clever advertisements on television.	-0.11	-0.12	-0.39	-0.12	-0.32	-0.17	-1.25	+0.70	-0.83	+0.08	-0.08
	5th	7th	7th	5th	6th	6th	8th	3rd	7th	5th	5th

Note: This tape contained a comedy routine which "spoofed" television advertising.

WEIGHTED SCORES AND RANKINGS FOR EACH QUESTION ON ITEM F OF VIDEO TAPED QUESTIONNAIRE BY TOTAL GROUPS AND BY ETHNIC SUB-GROUPS

POSSIBLE RESPONSE TO ITEM OF VIDEO-TAPED QUESTIONNAIRE	TOTAL GROUPS			CAUCASIAN ONLY			BLACK AND MEXICAN-AMERICAN ONLY			ORIENTAL ONLY	
	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.
F-1. Most people in the United States aren't taking the threat of air pollution seriously enough.	+1.57 1st	+1.53 1st	+1.00 3rd	+1.65 1st	+1.58 1st	-0.25 5th	+1.63 1st	+0.97 2nd	+3.50 1st	+1.42 1st	+1.27 1st
F-2. Scientists, not politicians should be allowed to determine our policy concerning air pollution.	+1.44 2nd	+1.11 2nd	+0.56 4.5	+1.58 2nd	+1.23 2nd	+0.83 3.5	+0.38 3rd	+1.73 1st	0.00 5.5	+1.37 2nd	+0.44 5th
F-3. The automobile industry should pay a large part of the cost for purifying the atmosphere because they produce the vehicle largely responsible for its pollution.	-0.42 7th	-0.69 7th	-0.11 6th	-0.58 6th	-0.88 8th	-0.42 6th	-0.63 7th	-0.17 5.5	+0.50 4th	+0.04 6th	-0.52 7th
F-4. Scientists have been predicting the end of mankind for over a century.	-2.07 9th	-1.64 9th	-2.11 9th	-2.33 9th	-1.85 9th	-3.50 9th	-1.25 9th	-0.63 8th	-2.67 9th	-1.87 9th	-1.65 8th
F-5. A massive educational program must be immediately launched so that the public will be aware of the problem of air pollution.	+0.35 4th	+0.51 4th	+1.52 2nd	+0.48 4th	+0.58 3rd	+1.50 2nd	0.00 4.5	-).60 7th	+1.67 2nd	+0.29 4th	+0.98 2.5
F-6. It would be better to lose the Viet Nam War than to lose the battle over air pollution.	+0.05 5th	-0.74 8th	+0.56 4.5	+0.43 5th	-0.65 6th	+0.83 3.5	-0.38 6th	-2.27 9th	0.00 5.5	-0.40 7th	-0.10 6th
F-7. Air pollution is a world-wide problem and should be handled by the United Nations Organization.	-0.41 6th	-0.21 5th	-1.56 8th	-0.65 7th	-0.74 7th	-1.25 7.5	0.00 4.5	+0.80 3rd	-2.17 8th	+0.26 5th	+0.58 4th
F-8. If people stopped buying automobiles, the industry would be forced to build a vehicle with a different power source than the internal combustion engine.	-1.31 8th	-0.67 6th	-1.39 7th	-1.36 8th	-0.40 5th	-1.25 7.5	+1.25 2nd	+0.33 4th	-1.67 7th	-1.79 8th	-1.98 9th
F-9. Adequate funds must be immediately voted for an all-out attack on air pollution, even if this means raising taxes for everyone in the country.	+0.80 3rd	+0.80 3rd	+2.61 1st	+0.78 3rd	+0.94 4th	+3.50 1st	-1.00 8th	-0.17 5.5	+0.83 3rd	+1.12 3rd	+0.98 2.5

Note: This tape contained a segment in which newsmen discussed the chances for man's controlling air pollution in the next decade.

WEIGHTED SCORES AND RANKINGS FOR EACH QUESTION ON ITEM G OF VIDEO TAPED QUESTIONNAIRE BY TOTAL GROUPS AND BY ETHNIC SUB-GROUPS

POSSIBLE RESPONSE TO ITEM OF VIDEO-TAPED QUESTIONNAIRE	TOTAL GROUPS			CAUCASIAN ONLY			BLACK AND MEXICAN-AMERICAN ONLY			ORIENTAL ONLY	
	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.	Judges	Exp.	Contr.
G-1. While the speaker does not actually tell students to revolt, he appears to condone revolution. For this reason he should not be allowed to talk on college campuses.	-2.56 9th	-2.40 9th	-2.44 9th	-1.57 9th	-2.42 9th	-2.17 8th	-3.63 9th	-2.53 9th	-3.00 8.5	-2.83 9th	-2.29 9th
G-2. Gregory may have a valid point to make; however, after hearing him speak, one should also hear other points of view.	+1.48 3rd	+1.77 3rd	+1.11 4th	+1.77 2nd	+1.76 3rd	+1.25 2nd	+0.63 4th	+1.03 4th	+0.83 4th	+1.23 3rd	+2.19 2nd
G-3. Our constitution guarantees the right of free speech, and students should be exposed to all shades of opinion.	+3.05 1st	+2.63 1st	+2.72 1st	+3.08 1st	+3.04 1st	+2.58 1st	+2.88 2nd	+2.97 1st	+3.00 2nd	+2.94 1st	+2.33 1st
G-4. This type of humor tends to widen the generation gap between students and their parents.	-1.46 8th	-1.66 8th	-1.17 6th	-1.50 8th	-1.68 8th	-0.67 6th	-1.25 7th	-1.57 8th	-2.17 7th	-1.53 7th	-1.62 8th
G-5. This short excerpt from a larger speech does not give enough infromation so that the viewer can evaluate Gregory's remarks in context.	-0.99 6th	-0.80 6th	+1.28 3rd	-0.80 6th	-0.74 6th	+1.08 3.5	-2.25 8th	-1.43 7th	+1.67 3rd	-1.02 6th	-0.60 6th
G-6. Anyone could tell by observing the reaction of the students in the audience that they agreed with Gregory.	-0.06 4th	+0.11 4th	-2.00 8th	0.00 4th	0.00 4th	-2.58 9th	+1.25 3rd	-1.10 3rd	-0.83 6th	-0.02 5th	-0.15 5th
G-7. The viewer might well look up the Declaration of Independence to determine whether or not Gregory is quoting it correctly.	-1.19 7th	-1.18 7th	+0.44 5th	-0.94 7th	-1.44 7th	+0.67 5th	-0.63 5.5	-0.10 5th	0.00 5th	-1.69 8th	-1.12 7th
G-8. Continual press coverage of such things as riots tends to encourage unrest in America.	-0.25 5th	-0.48 5th	-1.83 7th	-0.66 5th	-0.60 5th	+1.25 7th	-0.63 5.5	-1.10 6th	-3.00 8.5	+0.35 4th	+0.10 4th
G-9. Talks by individuals like Dick Gregory are helping to build better understanding between black and white communities.	+1.75 2nd	+1.78 2nd	+1.89 2nd	+1.24 3rd	+2.08 2nd	+1.08 3.5	+3.63 1st	+1.47 2nd	+3.50 1st	+2.56 2nd	+1.15 3rd

Note: This tape was of Dick Gregory talking at the University of Alabama to students. His message: "Read the Declaration of Independence and see what they're rioting and looting about."

BMD05V
GENERAL LINEAR HYPOTHESIS

1. GENERAL DESCRIPTION

a. This program performs the calculations required for a general linear hypothesis model. The independent variables are of two general types:

(1) Variables used to specify the analysis-of-variance classifications.

(2) Variables used as covariates.

By use of these variables, the program can be used for balanced or unbalanced analysis-of-variance or covariance designs and missing-value problems.

b. The output of this program includes:

(1) Means and standard deviations of the dependent variable and means of the covariates.
(2) Sums of squares explained by hypotheses.
(3) Estimates of regression coefficients.
(4) Residual sums of squares.
(5) F-tests and degrees of freedom.
(6) Accuracy of coefficients.

c. Limitations per problem:

(1) p, number of variables used to specify analysis-of-variance design $(1 \leq p \leq 60)$
(2) q, number of covariates $(1 \leq p+q \leq 60)$
(3) d, number of sets of Design Cards $(1 \leq d \leq 999)$
(4) R_i, number of replicates for the i^{th} set of Design Cards $(1 \leq R_i \leq 99)$
(5) H, number of Hypothesis Cards $(1 \leq H \leq 57)$
(6) m, number of Transgeneration Cards $(0 \leq m \leq 60)$
(7) k, number of Variable Format Cards $(1 \leq k \leq 5)$

d. Estimation of running time and output pages per problem:

Number of seconds = $5 + [3d(p+q)(1+H)/100]$ (for IBM 7094)
Number of pages = 10

STANDARD SCORES ON SUB-TEST FIVE OF THE IOWA TEST OF EDUCATIONAL DEVELOPMENT AND WEIGHTED GRADE EQUIVALENTS IN UNITED STATES HISTORY FOR BLACK AND MEXICAN-AMERICAN STUDENTS IN THE EXPERIMENTAL AND CONTROL GROUPS

	EXPERIMENTAL GROUP				CONTROL GROUP			
	ITED	WT.GR.	ITED	WT. GR.	ITED	WT. GR.	ITED	WT. GR.
MALE					22	30		
	10	9			23	18		
	22	30			27	22		
					21	14		
FEMALE					17	15	8	26
					19	23	13	222
	14	20			25	24	20	19
	20	19			12	28		
					17	28		
					14	21		
					17	16		
					17	28		
	N = 4				N = 15			

STANDARD SCORES ON SUB-TEST FIVE OF THE IOWA TEST OF EDUCATIONAL DEVELOPMENT AND WEIGHTED GRADE EQUIVALENTS IN UNITED STATES HISTORY FOR CAUCASIAN STUDENTS IN THE EXPERIMENTAL AND CONTROL GROUPS

	EXPERIMENTAL GROUP				CONTROL GROUP			
	ITED	WT.GR.	ITED	WT.GR.	ITED.	WT.GR.	ITED	WT. GR.
MALE	18	18			8	21	17	30
	22	23			28	30		
	28	17			27	24		
	27	22			15	28		
	26	16			12	11		
	30	29			20	21		
	13	23			18	25		
	24	23			20	30		
	18	18			22	22		
	24	27			19	21		
	24	26			15	20		
	24	17			20	25		
	26	26			10	18		
					15	20		
					8	9		
					25	18		
					16	13		
FEMALE	29	30	17	25	19	23	30	30
	13	20	27	18	15	14	19	28
	12	28	24	26	28	20	19	22
	18	15			12	19	24	26
	24	24			10	20	38	30
	15	24			12	25	29	30
	11	22			18	22	14	17
	24	30			9	22	16	20
	19	22			15	20	16	21
	19	30			11	17	6	16
	24	24			21	23	15	18
	21	24			24	21	17	21
	19	19			26	23	13	19
	24	20			23	24	16	17
	24	28			26	26	7	21
	25	30			20	26	22	26
	26	28			15	28	16	23
	26	30			17	21	15	19
	14	16			26	26	15	19
	29	30			19	20	12	16
	13	21			25	18	10	22
	17	20			27	28	17	23
	21	22			15	17	16	22
	19	30			26	30	24	25
	20	30			23	24	17	22

N = 42 N = 68

STANDARD SCORES ON SUB-TEST FIVE OF THE IOWA TEST OF EDUCATIONAL DEVELOPMENT AND WEIGHTED GRADE EQUIVALENTS IN UNITED STATES HISTORY FOR ORIENTAL STUDENTS IN THE EXPERIMENTAL AND CONTROL GROUPS

	EXPERIMENTAL GROUP				CONTROL GROUP			
	ITED	WT. GR.	ITED	WT. GR.	ITED	WT. GR.	ITED	WT. GR.
MALE	23	30	26	20	8	18	26	26
	22	23	23	28	10	23	26	30
	18	17	19	22	16	29	17	23
	30	26	24	26	16	25	26	28
	22	28	27	21	27	27	18	23
	17	28	20	28	22	26	13	21
	18	23			25	30	29	30
	18	30			24	30	17	26
FEMALE	15	22	18	22	11	11		
	22	22	23	25	16	30		
	26	18			11	14		
	25	26			28	20		
	23	25			20	22		
	19	20			26	30		
	19	24			20	24		
	19	26			28	30		
	18	24			18	19		
	25	26			22	28		
	17	11						
	N = 27				N = 26			

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