



A comparison between two methods of teaching social studies at the college level
by Melvin William Roe

A thesis submitted in partial fulfillment of the requirements for the degree of DOCTOR OF
EDUCATION

Montana State University

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Abstract:

The central problem of this study is to determine if there is any significant difference between students taught by the face-to-face instructional method and those taught by an individual instructional program with reference to their achieving selected objectives applicable to a course of study dealing with ethnic minority groups, and if there is a difference in the achievement of these students which can be related to personality variables of the students with reference to scores derived from the Achievement Scale of the Edwards Personal Preference Schedule and the Rokeach Dogmatism Scale.

Seventy-two students enrolled in an Ethnic Studies course at Eastern Montana College in the Fall of 1974 were randomly divided into two groups with one being subjected to the traditional method and the other the experimental method. Students in both groups were evaluated by means of a series of tests in which the items were classified according to each of the three objective domains (cognitive, affective, and psychomotor) as well as scores obtained by students in each of these areas. All scores were recorded as absolute numbers and the total of all scores was used in calculating group means for purposes of testing null hypotheses. The experimental design consisted of a 2x2x2 matrix on which was performed an analysis of variance testing the significance of differences of two independent variables (the control and experimental method), the significant difference between the two sets of moderator variables (the Edwards Personal Preference Schedule and the Rokeach Dogmatism Scale), and to test the significance of difference of various interactions. These procedures were done for all dependent variables (achievement of cognitive, affective, and psychomotor objectives, and total scores of all three) meaning that four AOV studies were completed.

The subsequent statistical analysis indicates that a "no difference" hypothesis for the two methods can be rejected at .01 confidence level with the students in the experimental group scoring considerably higher than students in the control group. In addition, a "no difference" hypothesis for the interaction between methods and achievement levels derived from the Edwards Personal Preference Schedule can be rejected at .05 confidence level with students characterized as "low achievers" in the experimental group scoring considerably higher than all other students in either group. No evidence was found to substantiate a rejection of a "no difference" hypothesis relative to scores derived from the Rokeach Dogmatism Scale.

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SOCIAL STUDIES AT THE COLLEGE LEVEL

by

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A thesis submitted in partial fulfillment
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Thanks are due, lastly, to my colleagues at Eastern Montana College for encouraging me to pursue my interests in the topic of this thesis and for contributing to a climate conducive to scholarship. Then too, there was the environment provided by my loving wife who furnished the proper perspective.

TABLE OF CONTENTS

Chapter	Page
I. PROLEGOMENON	1
Statement of the Problem	2
Need of the Study	3
General Questions to be Answered.	5
General Procedures	7
Limitations of the Study	11
Definitions of Terms	14
Summary	16
II. REVIEW OF RELATED RESEARCH.	20
The Face-to-Face Instructional Method.	28
The Individual Instructional Method	37
The Moderator Variables	43
Summary	46
III. DESIGN OF THE STUDY.	50
Statement of the Hypotheses	51
The Experimental Treatments	55
Population Description	64
Collecting, Organizing, and Analysis of Data.	64
IV. SUMMARIZATION OF THE DATA.	67
Scores of the Independent Variables	67
Scores of the Moderator Variables	68
Scores of the Dependent Variables	70
Analysis of Variance for D_1	70
Analysis of Variance for D_2	76
Analysis of Variance for D_3	82
Analysis of Variance for D_t	87

	Page
The t-Test for Standard Deviations	93
Summary	94
V. RATIOCINATION	96
Statement of the Hypotheses	96
General Questions Answered	99
Analysis and Interpretation	106
Conclusions and Recommendations	108
Appendix	114
Bibliography	122

LIST OF TABLES

	Page
Table 1	Table of D_1 Scores 72
Table 2	Table of Effects for D_1 75
Table 3	Table of D_2 Scores 77
Table 4	Table of Effects for D_2 80
Table 5	Table of D_3 Scores 83
Table 6	Table of Effects for D_3 86
Table 7	Table of D_t Scores 88
Table 8	Table of Effects for D_t 91

LIST OF FIGURES

	Page
Figure 1 Histogram for Data of Table 1, Control Group D ₁ Frequencies	73
Figure 2 Histogram for Data of Table 1, Experimental Group D ₁ Frequencies	74
Figure 3 Histogram for Data of Table 3, Control Group D ₂ Frequencies	78
Figure 4 Histogram for Data of Table 3, Experimental Group D ₂ Frequencies	79
Figure 5 Comparison of Mean Scores for D ₂ Methods/ Achievement Effects	81
Figure 6 Histogram for Data of Table 5, Control Group D ₃ Frequencies	84
Figure 7 Histogram for Data of Table 5, Experimental Group D ₃ Frequencies	85
Figure 8 Histogram for Data of Table 7, Control Group D _t Frequencies	89
Figure 9 Histogram for Data of Table 7, Experimental Group D _t Frequencies	90
Figure 10 Comparison of Mean Scores for D _t Methods/ Achievement Effects	92

ABSTRACT

The central problem of this study is to determine if there is any significant difference between students taught by the face-to-face instructional method and those taught by an individual instructional program with reference to their achieving selected objectives applicable to a course of study dealing with ethnic minority groups, and if there is a difference in the achievement of these students which can be related to personality variables of the students with reference to scores derived from the Achievement Scale of the Edwards Personal Preference Schedule and the Rokeach Dogmatism Scale.

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The subsequent statistical analysis indicates that a "no difference" hypothesis for the two methods can be rejected at .01 confidence level with the students in the experimental group scoring considerably higher than students in the control group. In addition, a "no difference" hypothesis for the interaction between methods and achievement levels derived from the Edwards Personal Preference Schedule can be rejected at .05 confidence level with students characterized as "low achievers" in the experimental group scoring considerably higher than all other students in either group. No evidence was found to substantiate a rejection of a "no difference" hypothesis relative to scores derived from the Rokeach Dogmatism Scale.

CHAPTER I

PROLEGOMENON

It is almost certain that any systematic search in scholarly works on teaching and learning in higher education will lead the reader to a number of aphorisms relative to one method of instruction being preferred over others. And while these no doubt will vary from one discipline to another as well as to the temperament of the professor and/or writer, there is usually the supporting belief or belief-system that alleges superiority for the preferred method in question. In fact, it may be a Sisyphean task for any researcher who enters into this arena of strong affect and little concern in an endeavor to assess the relative utility of various college teaching methods. It is no surprise then that such inquiry has received remarkably little attention from experimentalists. For even in the academic community, where men's work is supposedly based upon a rigorous testing of accepted ideas, there is a tendency to think it somewhat indecent to apply the same standards of inquiry to their own teaching practices. J. P. Powell has observed that "few university teachers are even aware that many of their instructional problems have already been investigated experimentally, and only a tiny minority take the trouble to acquaint themselves with the results."¹

Any belief-system, however hallowed, regarding effective teaching

methods, be it the time-honored traditional face-to-face instruction or the latter-day innovative individual instructional program, stands in need of empirical support, with the ultimate criteria for effectiveness being not only measured with reference to the accumulation of knowledge and the development of desirable attitudes, but with regard to student's individual personality differences. The purpose of this study is to compare two such methods of teaching a social studies course at the college level. This present chapter will enable the reader to identify the central problem under consideration, discern the need for the study, adjudge questions to be answered, appraise the research procedures, perceive recognizable limitations, and recognize relevant terminology.

STATEMENT OF THE PROBLEM

The central problem of this study is to determine if there is any significant difference between students taught by the face-to-face instructional method and those taught by an individual instructional program with reference to their achieving selected objectives applicable to a course of study dealing with ethnic minority groups, and if there is a difference in the achievement of these students which can be related to personality variables of the students with reference to scores derived from the Achievement Scale of the Edwards

Personal Preference Schedule and the Rokeach Dogmatism Scale.

NEED OF THE STUDY

In 1968, two researchers at the Center for the Advanced Study of Educational Administration at the University of Oregon published a monograph, The Teaching-Learning Paradox, in which, after examining some "forty years of research" on the various methods of college teaching, they concluded "we are able to state decisively that no particular method of college instruction is measurably to be preferred over another, when evaluated by student examination performances."² Think what this means to all those teachers in the world who recite from yellowed notes and never consider any other technique. Think what this means to the professor who neglects his teaching for research. Think what this means to the administrator who is concerned with the cost-benefit analysis of college work. To some it means a clear conscience at last. But to others, the "no difference" conclusion provides a launching pad for new directions in research on college teaching methods as well as to make clear the grounds for educational policy decisions regarding college teaching methods.

The authors said that the facts "demonstrate clearly and unequivocally that there is no difference."³ Thus, forty years of research have

apparently proved that subject-matter content can be taught by any teaching technique. If this is true then the choice of a goal for an educational system becomes critical. If the content is the goal, then how you teach does not matter. But to many, the primary goal of higher education is to develop the student's motivation and ability to continue to learn throughout his life. Few of us are satisfied with achievement of knowledge if the student is unable to use it in solving problems where the knowledge is relevant, or if the student fails to relate the knowledge to relevant attitudes. The current generation of students is wise enough to recognize the sham of a content goal and some have revolted in the face of it. Many students are asking for a meaningful education which will prepare them to make a contribution to the solution of the relevant problems of our society. If the goal of our educational system is to prepare them for this role, then how you teach does make a difference.

Many competent educators hold that educational goals beyond content require carefully considered teaching techniques. Of course this is not obvious to all educators and as dedicated men attempt to find answers to complex problems, they need not be surprised by the presence of sniping critics. In 1903, comparable critics described the 400 years of research in flying, from Leonardo da Vinci's first attempts in 1500, to the failure of the day. It was clearly time for new direction in research; man would never fly. Education is at a

similar turning point. The Wright brothers of the educational world have flown new systems all over the country. The recognition of the potential of these programs will no doubt accelerate future innovations. In the not too distant future, we can expect to find educational systems equivalent to the modern jet, while others dream of walking on the moon.

The individual instructional technique is one of these relatively new programs being introduced into contemporary education. The purpose of this study is to comparatively evaluate this teaching method with the more traditional face-to-face instructional method in order to ascertain if there is a difference relative to the most fundamental objectives of social studies education--the higher level cognitive and affective goals.

GENERAL QUESTIONS TO BE ANSWERED

This study attempts to answer the question whether there is any significant difference between students taught by the face-to-face instructional method and those taught by an individual instructional program with reference to their achieving selected objectives applicable to a course of study dealing with ethnic minority groups, and if there is a difference in the achievement of the students which can be related to personality variables of the students with reference to scores derived from the Achievement Scale of the Edwards

Personal Preference Schedule and the Rokeach Dogmatism Scale.

Through the use of a specially designed interdisciplinary, multi-ethnic course which was offered to a group of students (the control group) by the face-to-face instructional method and a group of students (the experimental group) by an individual instructional program, this research seeks answers to the following questions:

- 1- How do students in the experimental group compare with students in a control group with reference to fulfilling the traditional objectives normally associated with the cognitive domain, i. e., facts, concepts, generalizations, theories, and laws?
- 2- How do students in the experimental group compare with students in a control group with reference to fulfilling the traditional objectives normally associated with the affective domain, i. e., attitudes and values?
- 3- How do students in the experimental group compare with students in a control group with reference to fulfilling the traditional objectives normally associated with the psychomotor domain, i. e., skills of inquiry, communication, resource use, and group interaction?
- 4- How do students in the experimental group compare with students in a control group with reference to fulfilling the traditional objectives of the social studies? Since the ultimate criterion on the social studies is the character of the changes brought about in the behavior of the students, the learner then becomes the focal point for evaluation. In assessing what these students are learning, all of the objectives claimed for the social studies must be taken into account: cognitive, affective, and psychomotor.

- 5- How do students who exhibit a high dogmatic score on the Rokeach Dogmatism Scale compare with students who exhibit a low dogmatic score on the Rokeach Dogmatism Scale with reference to the two instructional treatments?
- 6- How do students who exhibit a high level of achievement on the Edwards Personal Preference Schedule compare with students who exhibit a low level of achievement on the Edwards Personal Preference Schedule with reference to the two instructional treatments?
- 7- How do students who exhibit a high dogmatic score on the Rokeach Dogmatism Scale and a high level of achievement on the Edwards Personal Preference Schedule compare with students who exhibit a low dogmatic score on the Rokeach Dogmatism Scale and a high level of achievement on the Edwards Personal Preference Schedule with reference to the two instructional treatments?
- 8- How do students who exhibit a high dogmatic score on the Rokeach Dogmatism Scale and a low level of achievement on the Edwards Personal Preference Schedule compare with students who exhibit a low dogmatic score on the Rokeach Dogmatism Scale and a low level of achievement on the Edwards Personal Preference Schedule with reference to the two instructional treatments?

GENERAL PROCEDURES

An interdisciplinary course in ethnic studies was offered as part of the social science curriculum at Eastern Montana College during the fall quarter, 1974. The course was offered for all students without prerequisites or restrictions relative to classification or class size. At the first meeting (September 26, 1974), all students were administered both the Achievement

Scale of the Edwards Personal Preference Schedule and the Rokeach Dogmatism Scale. These tests were administered and graded by the Counseling Center of Eastern Montana College. At this time the students were divided into two groups equal in size by a randomization method with one group assigned as the control group (those who were taught by a face-to-face instructional method) and the other group constituting the experimental group (those who were taught by an individual instructional program).

Beginning with the second week, the control group was scheduled to meet twice each week in two-hour sessions until the close of the quarter, December 10, 1974 (a total of 40 hours of classroom instruction). The students assigned to the experimental group were provided with the individualized instructional program consisting of forty cassette programs, five slide programs, and programmed workbooks. These students had free access to the Resource Center of the Language Department or the Learning Center of the Audio Visual Center for listening to tapes and/or viewing slides, or they could check these items out of the library for use at their pleasure.

The course of study for both groups was identical with each group presented with identical goals, subjected to identical lectures, provided with identical resource materials and evaluated with identical tests. The difference between the two groups was not in course content but in method of instruction.

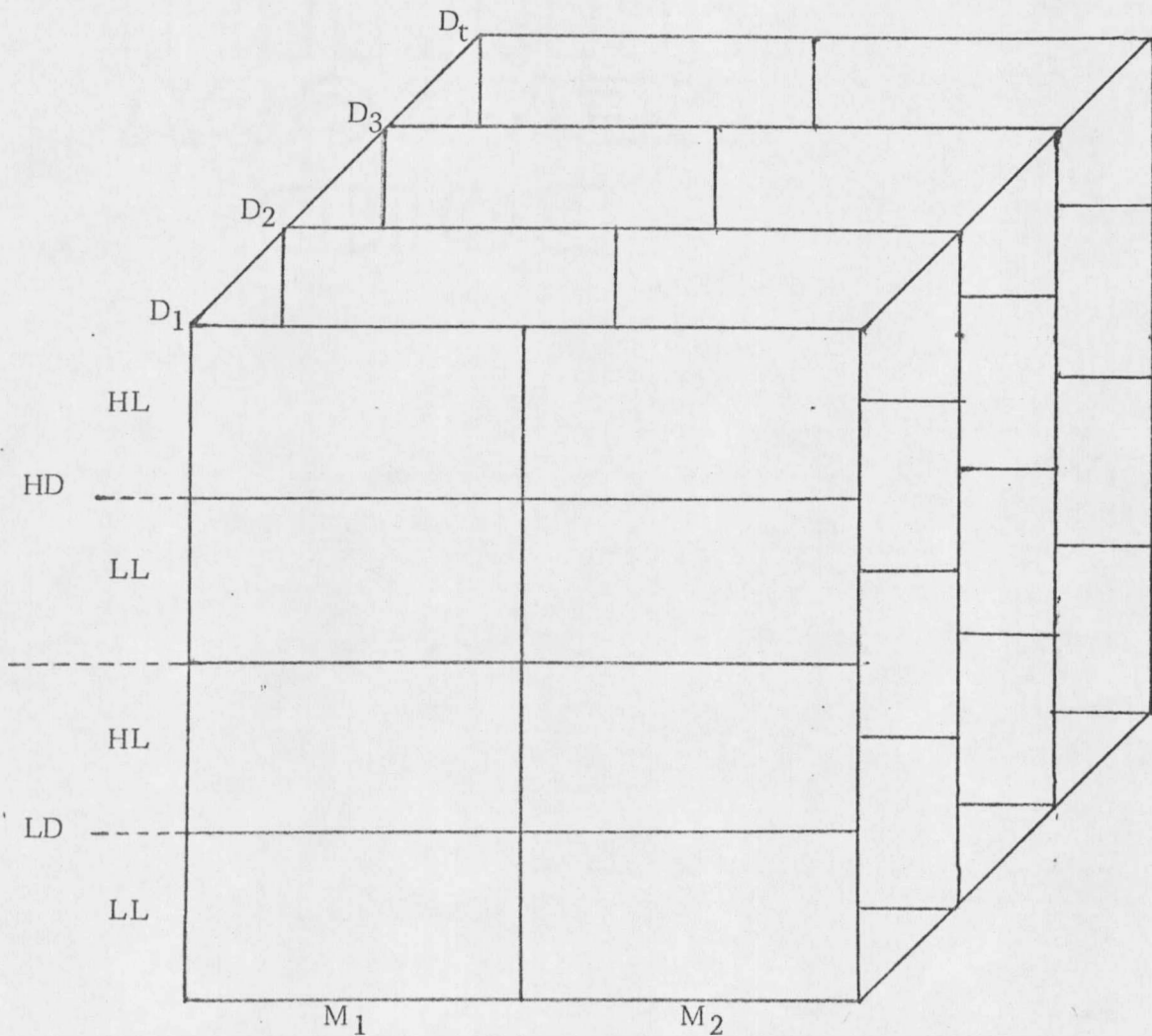
Whereas the control group had lectures presented in a traditional face-to-face method, the experimental group had access to the same lectures via audio-tape. Furthermore, whereas the control group had ample opportunity for unstructured discussion in each class session, the experimental group was subjected to a structured program provided in the workbooks.

Students in both groups were evaluated by means of five proctored essay tests and five proctored objective tests. All essay tests were graded by averaging independent ratings submitted by a panel of raters consisting of five secondary education majors recruited from an advanced class in evaluating social science objectives. All scores were recorded as absolute numbers and the total of all scores were used in calculating group means for purposes of testing null hypotheses. For the purpose of additional study, test items were classified by this researcher according to each of the three objective domains (cognitive, affective, and psychomotor) as well as scores obtained by students in each of these areas.

The experimental design consisted of a 2x2x2 matrix on which was performed an analysis of variance (AOV) testing the significance of difference of two independent variables (the control and experimental method), the significant difference between the two sets of moderator variables (the Edwards Personal Preference Schedule and the Rokeach Dogmatism Scale), and the

significance of difference of various interactions. These procedures were done for all dependent variables (achievement of cognitive, affective, and psychomotor objectives, and total of scores of all three) meaning that four AOV studies were completed.

Data was cast into a table as follows:



In the experimental design illustrated above,

D_1 equals achievement of cognitive objectives

D_2 equals achievement of affective objectives

D_3 equals achievement of psychomotor objectives

D_t equals D_1 plus D_2 plus D_3

M_1 equals face-to-face method of instruction

M_2 equals individual instructional program

HD equals high dogmatic score on the Rokeach Dogmatism Scale

LD equals low dogmatic score on the Rokeach Dogmatism Scale

HL equals high level of achievement on the Edwards Personal Preference Schedule

LL equals low level of achievement on the Edwards Personal Preference Schedule

LIMITATIONS OF THE STUDY

The instructor assigned to the control group--those taught by the face-to-face instructional method--was the same person responsible for the development and implementation of the individual instructional program. Ideally, if one wished to adhere to investigative techniques as suggested by the five famous Mill's Canons, or rules of experimental research, he would withdraw to the atmosphere of the laboratory.⁴ Or, with reference to a comparative study as

is set forth in this thesis, many different instructors would have been engaged to teach the control method and many different instructors the experimental. But with the severe limitation of time and resources, this was not possible. Nor was it possible to employ even one additional person to teach one method while the researcher was engaged with the other. Thus, it is assumed that this researcher, by virtue of his training and years of experience, is a competent educator and that he is sufficiently knowledgeable about both the subject matter and various teaching techniques involved to carry this investigation to its fullest extent. It is further assumed that, by virtue of his personal and professional integrity, this researcher was able to adequately teach students in both the control and experimental groups without biases toward either.

While student achievement of some objectives can be measured by means of objective examinations, there are many which can only be measured by means of subjective--essay type examinations. Realizing the controversy surrounding the subject of essay grading, a number of steps were taken to mitigate the subjectivity and reduce the biases in evaluating answers to each essay examination. These are simply attempts to break up the process of evaluation into a series of more specific, fractionated judgments made upon a common base and applied to an anonymous product. Some of these steps were as follows: (1) to decide in advance what factors were to be measured and if

more than one distinct quality was to be appraised, separate evaluations would be made for each; (2) to prepare a model answer in advance showing what points should be covered and how many credits were to be allowed for each; (3) to grade the papers anonymously--that is with no understanding about who wrote the answer; and (4) to gain greater reliability by averaging independent ratings submitted by a panel of competent raters.⁵

The students participating in this research project represented a sample of the population which elect to take a general education social studies course as part of their college curriculum. Thus it must be understood that the subjects of this investigation were limited to those who opted to enroll in the course in question as it was offered in the college class schedule. Once this class materialized, students were assigned to either the control or experimental group by a randomization method.

While there are a number of acceptable instruments for measuring certain personality variables, this researcher has found by empirical evidence that the Achievement Scale of the Edwards Personal Preference Schedule and the Rokeach Dogmatism Scale are more suitable for this present investigation.⁶ Need for achievement as a personality attribute is considered a relatively independent normal personality variable which relates to the manifestation of an individual to do his best, to be successful, to accomplish tasks requiring

an effort, to be recognized as an authority, to accomplish something of great significance, to do difficult jobs well, and to be able to do things better than others. Such a level of achievement can be measured using the Achievement Scale of the Edwards Personal Preference Schedule. There are three types of acceptances and rejections which are ordinarily regarded as more or less distinct: the acceptance and rejection of ideas, of people, and of authority. The first is classified as a cognitive phenomenon, the second involves the phenomenon of prejudice or intolerance, and the third, authoritarianism. Is it not possible, however, that the way we accept or reject ideas, people, and authority all go together? Perhaps they are but different facets of the same thing, related to each other in a one-to-one fashion within the belief system. The degree of acceptance or rejection can be measured using the Rokeach Dogmatism Scale.

DEFINITION OF TERMS

Although most of the terms will be defined within the body of this paper, the following terms are defined here for special emphasis:

"Significant difference"--In order to prevent the rejection of a true null hypothesis by committing a Type I (or alpha) error, it was determined to let alpha equal .05. This means that if a difference as large or larger than the

one obtained could occur by chance as often as 5 times out of 100, the null hypothesis (no significant difference between the means) could be rejected.⁷

The .05 significance level has been selected for two reasons: .05 represents a fair balance between the probability of committing an alpha and beta error, and the greatest amount of comparable research (discussed in Chapter II) has been based on an .05 significance level.

"Face-to-face instruction"--Face-to-face methods of teaching such as the lecture, group discussion, and the tutorial are explicit examples of teaching technologies based on traditional assumptions concerning the teaching-learning linkage. The instructor is not only assumed to be a sufficient condition but also a necessary condition for learning, and outputs from the teaching-learning situation are assumed to be a function of differential teaching inputs.⁸

"Individual instructional program"--Ideally, individualized instruction means an arrangement that makes it possible at all times for each student to be engaged in learning those things that are most appropriate for himself as an individual. It is based on the assumption that all students have the same capabilities; while they may not have the same capacities, they all possess the ability to learn. Thus, the very heart of the program is student participation in the learning process.⁹

"Ethnic minority groups"--The focal point of an ethnic minority course

might be characterized as follows: those who are subordinate segments of our complex society; those having special physical or cultural traits which are seen as undesirable by the dominant segments of the society; those having a group self-awareness brought about by the special traits they share and the special disabilities these traits cause them; those whose membership in the group is transmitted by a rule of descent; and those who, whether by choice or by necessity, tend to practice endogamy.¹⁰

"Objectives"--There are at least three classifications of objectives for social studies instruction. They are: (1) those associated with the cognitive domain (facts, concepts, generalizations, theories, and laws); (2) those associated with the affective domain (attitudes and values); and (3) those associated with the psychomotor domain (skills of inquiry, communication, resource use, and group interaction).¹¹

SUMMARY

An educator who undertakes to deal with social studies education, or any phase of this discipline in our schools, is faced with an unwieldy set of challenges arising from the newness, imprecision, and complexity of the curriculum field. It is no small task to resolve the dilemmas caused by conflicts in a person's ideologies and the persistent shifts in curriculum emphases.

Yet anyone who is anxious to make a difference in the lives of those for whom he is responsible, must be engaged in a constant search for alternatives to the traditional ideas and practices.

While there are some who look at the current status of social studies pessimistically, there are developments in progress that promise a brighter future for the field. The great challenge then is for the continual evaluation of the content and consequences of social studies materials. An even greater challenge, however, is for the continual evaluation of the method whereby this material is transmitted to an eager student community. As the shape of the social studies curriculum undergoes transformation, the opportunities for studying innovation and instructional patterns should not go unheeded. It is hoped that the alternatives presented in this study will expedite our entry into what might be a most exciting era of teaching social studies.

FOOTNOTES

1. J. P. Powell, "Experimentation and Teaching in Higher Education," Educational Research, 6. (1964), 179.
2. Robert Dubin and Thomas C. Taveggia, The Teaching-Learning Paradox (Eugene, Oregon: University of Oregon Press, 1968), 10.
3. Ibid., 35.
4. The four major principles or methods of procedure (to which a fifth may be added by combining the first two) as identified by Mill are the method of agreement, the method of concomitant variations, the method of difference, and the method of residues. John Stuart Mill, A System of Logic (New York: Harper and Brothers, Inc., 1873), Book III, Chapter 8.
5. Robert L. Thorndike and Elizabeth Hagen, "Advantages and Disadvantages of Essay Tests," Measurement and Evaluation in Psychology and Education (New York: John Wiley and Sons, Inc., 1961), 43-56.
6. A. L. Edwards, Edwards Personal Preference Schedule (New York: Psychological Corporation, 1957) and Milton Rokeach, The Open and Closed Mind (New York: Basic Books, Inc., 1960, 71-100. There are 1080 references to research utilizing the Edwards Schedule in Oscar K. Buros, ed., Seventh Mental Measurements Yearbook, Vol. I (Highland Park, N. J.: The Gryphon Press, 1972), 140-148. The Rokeach Dogmatic Scale is based on the personality scales widely known as the California F Scale and the California Ethnocentrism Scale, which along with evidence for their validity, appeared in T. W. Adorno, et. al., The Authoritarian Personality (New York: Harpers, 1950). The Rokeach Scale has been tested extensively at Michigan State University, Purdue University, and Ohio State University (see pp. 71-97 in Rokeach).
7. Sometimes the alpha error is replaced by an acceptable level of probability (called a confidence level) and is usually set at 95% (the so-called .05 level) meaning that there is a 95% chance that the sample is distributed in the same way as the population. See Bruce W. Tuckman, Conducting Educational Research (New York: Harcourt Brace Jovanovich, Inc., 1972), 205.

