STRANGES, Jr., Joseph Francis, 1923-
A COMPARATIVE STUDY OF THE OPEN AND THE CLOSED-MINDED STUDENTS' PREFERENCES FOR LECTURE OR DISCUSSION METHODS.

The Ohio State University, Ph.D., 1970
Education, theory and practice

University Microfilms, A XEROX Company, Ann Arbor, Michigan
A COMPARATIVE STUDY OF THE OPEN AND THE CLOSED-MINDED STUDENTS' PREFERENCES FOR LECTURE OR DISCUSSION METHODS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy in the Graduate School of The Ohio State University

By

Joseph Francis Stranges, Jr., B.S., M.A.

The Ohio State University
1970

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ACKNOWLEDGMENTS

The completion of this study would not have been possible without the support of numerous people. This writer acknowledges the following:

Dr. Robert E. Jewett, my major adviser, who, during my entire graduate program, has given direction, encouragement, and foresight.

Mr. John Mase, teacher at Brookhaven High School, Columbus, Ohio, for his participation as the master teacher in this study and also his students who were involved.

Mr. Clayton Ferrell, Administrative Office, Columbus Public Schools; Mr. Edwin Tilton, Principal, Mr. Noel Curran, Instructional Coordinator, Mr. Terry Black, Mr. Arthur Darnbrough, and Mr. Robert Richards, teachers, and the students at North High School for their splendid cooperation.

Mr. Rodney J. Harrison, Director of Student Financial Aid, and members of his staff for their constant interest throughout this dissertation and my doctoral studies.

My mother, brother, sisters, and other relatives and friends for their endless encouragement.
My four sons, Joseph III, Vincent, Christopher, and Matthew for their consideration, understanding, and sacrifices.

Most important, my devoted wife, Mary, who has been my inspiration and has had constant faith in my capabilities to achieve.
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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGMENTS</td>
<td>ii</td>
</tr>
<tr>
<td>VITA</td>
<td>iv</td>
</tr>
<tr>
<td>LIST OF TABLES</td>
<td>viii</td>
</tr>
<tr>
<td><strong>Chapter</strong></td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td>4</td>
</tr>
<tr>
<td>Implications of the Study</td>
<td>6</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>8</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>9</td>
</tr>
<tr>
<td>Contents of the Other Chapters in the Thesis</td>
<td>9</td>
</tr>
<tr>
<td>II. REVIEW OF RELATED LITERATURE</td>
<td>11</td>
</tr>
<tr>
<td>Lecture Versus Discussion</td>
<td>11</td>
</tr>
<tr>
<td>Summary of Lecture Versus Discussion</td>
<td>26</td>
</tr>
<tr>
<td>Dogmatism</td>
<td>27</td>
</tr>
<tr>
<td>Summary of Dogmatism</td>
<td>31</td>
</tr>
<tr>
<td>Summary</td>
<td>32</td>
</tr>
<tr>
<td>III. METHODOLOGY</td>
<td>33</td>
</tr>
<tr>
<td>Setting and Population in the Study</td>
<td>33</td>
</tr>
<tr>
<td>Instruments Used in the Study</td>
<td>35</td>
</tr>
<tr>
<td>Procedures to Collect the Data</td>
<td>42</td>
</tr>
<tr>
<td>Treatment of the Data</td>
<td>43</td>
</tr>
<tr>
<td>Summary</td>
<td>44</td>
</tr>
<tr>
<td>IV. RESULTS AND INTERPRETATIONS</td>
<td>46</td>
</tr>
<tr>
<td>Results</td>
<td>46</td>
</tr>
<tr>
<td>Interpretations</td>
<td>89</td>
</tr>
<tr>
<td>Summary</td>
<td>97</td>
</tr>
</tbody>
</table>

vi
# Summary and Recommendations

## Summary
- Page 93

## Recommendations
- Page 102

## Appendixes
- Opinionnaire
  - Page 108
- Opinionnaire Answer Sheet
  - Page 114
- Narrations of the Two Audio-Visual Tapes
  - Page 116
- Judge's Rating of Audio-Visual Tapes
  - Page 131
- Student Selection Sheet
  - Page 134
- Student Demographic Form
  - Page 136
- Occupation Classifications
  - Page 142
- Sports and Music Classifications
  - Page 144
- Most and Least Liked Course
  - Page 146
- Instructions for Instruments
  - Page 163
- Communications
  - Page 167

## Bibliography
- Page 176
LIST OF TABLES

Table                                      Page
1. Judges Rating of Audio-Visual Tapes    41
2. Statistical Summary of Scores on the Rokeach Dogmatism Scale Form E for the Study Group 47
3. Rokeach Dogmatism Scale Form E Statistics for the Two Extreme Groups 48
4. Preference of Lecture and Discussion Modes by the Two Extreme Groups 49
5. Ages of Subjects 60
6. Place of Birth 60
7. Residency in Columbus 61
8. Last Place of Residency before Moving to Columbus, Ohio 62
9. Number of Different Residing Places of Subjects with Non-lifetime Residency in Columbus, Ohio 63
10. Location of Longest Residency of Subjects 64
11. Length of Time Lived in Present Building in Relationship to Time Lived in Columbus 66
12. Parent(s) in Home of Subjects 67
13. Fathers Occupations of Subjects with the Parent in Home 68
14. Mothers of Subjects Who were Employed 68
15. Number of Children in Family of Subjects 69
16. Order of Subjects within the Mean to Siblings 70
17. Organizational Membership of Subjects 72
Table

18. Spare Time Preference ........................................ 73
19. Residency in Columbus, Ohio, in Relationship to Number of Columbus Public Elementary Schools Attended ........................................ 74
20. Attendance in Parochial Elementary School .................. 75
21. Attended Parochial Elementary School Six Years ............... 76
22. Residency in Columbus, Ohio, in Relationship to Number of Columbus Public Junior High Schools Attended ........................................ 77
23. Attended Parochial School in Grades 7, 8, 9 .................. 78
24. Residency in Columbus, Ohio, in Relationship to Number of Columbus Public Senior High Schools Attended ........................................ 79
25. Parochial School Attendance in Part of Senior High .......... 80
26. Curriculum Pursued by Subjects .................................. 81
27. Anticipated Credits at Graduation ................................ 82
28. Accumulative Point-hour ........................................... 83
29. Most Liked Course ............................................... 85
30. Least Liked Course ................................................ 86
31. Academic Aspirations ............................................. 87
32. Career Preference .................................................. 88
CHAPTER I

INTRODUCTION

While planning a learning situation for his students, the teacher must consider numerous factors in order to attain objectives. One decision confronted is the teaching method or methods to be employed. If the variety of teaching strategies the teacher might select are placed on a continuum, expository and discovery would be at opposite ends with varying degrees of directed discussion somewhere along the continuum, determined by the number of cues offered by the teacher.

Studies performed to identify which teaching strategy is more conducive to learning have not indicated clearly which method is the best. Most investigations have compared lecture to discussion. McKeachie\(^1\) surveyed studies relevant to lecture versus discussion and concluded that most findings showed no significant difference in learning outcomes with the exception of a few experiments. In those, lecture seemed to be more favorable for the

\(^1\)W. J. McKeachie, "Research on Teaching at the College and University Level," Handbook of Research on Teaching, ed. N. L. Gage (Chicago, 1963), 1,116-1,172.
acquisition of knowledge and discussion the method to allow the learners to take concepts and organize them into a higher order of generalization. However, McKeachie does add that, generally speaking, most studies had little validity because of several shortcomings. As examples, some investigations were either poorly designed, or the selection of sample groups was improperly done, or interpretations of data were not scientific, or evaluating mechanisms tested for short term recall rather than the retention of data over a long period of time.

Other reviewers of research designed to identify the most conducive method for learning agree with McKeachie. Wallen and Travers in their investigation of teaching methods gave the following summary.

What conclusions may be drawn from the research on teaching methods? The first impression is likely to be that there has not been much research. In view of the quantity of heated debate over these issues, one might have expected more. A second impression is that teaching methods do not seem to make much difference, or to phrase it more appropriately, there is hardly any direct evidence to favor one method over another.  

Siegel and Siegel poignantly stated the nature of the quandary.

... it is generally discovered that students learn about as much when exposed to one kind of

---

in instructional environment as they do when exposed to another. The absence of significant differences is reported with monotonous regularity.\(^3\)

Nonetheless, since the beginning of the 1960's, there has been a movement termed the "new social studies" that has over fifty major and an equal number of minor curriculum projects with most of both types not yet completed. These projects are designed to improve the teaching-learning process. The purpose of numerous projects is to provide the teacher with proper information and materials that will encourage the use of more discussion and less lecture within the classroom. Similarly, several popular textbooks that consider social studies methods emphasize discussion as the teaching method. Strategies such as "problem solving," "reflective thinking," "inquiry," and "critical thinking" are suggested in some instances as not only the process but also the prime objective of the social studies. Concomitantly within the "new social studies," ideas for in-service training, workshops, and institutes for the experienced teacher strive to direct the actively engaged instructor toward more varied teaching strategies. The projects, upgrading the effectiveness of the teacher, and numerous writings produced today seem to assume that if the social studies teacher is qualitatively prepared and

quantitatively given teaching aids, learning within the classroom will improve. Indeed, the "movement" has given vitality to the field. Presently, it is too early to evaluate the results.

Statement of the Problem

Clearly, research conducted does not consistently reveal whether lecture or discussion is ideally the better of the two instructional modes. Two factors seem quite apparent in the "new social studies" trend: (1) the behavior of the teacher will need modification, and (2) the role of the student will need to be reconsidered. Conceivably, the teacher should be professionally capable to fulfill his designated role. The question remains whether or not the learner wants to become more actively involved. The student would be placed in a role whereby intra and interspection of personal attitudes and values would be expected to occur. However, there is no consistent evidence that the learner prefers to participate in a discussive position. Each person has his own belief system. This concept has been recently reaffirmed by Milton Rokeach and his associates. From numerous studies, Rokeach concluded that the belief system of an individual

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is affected by the degree of dogmatism he possesses. The investigations revealed that those high in dogmatism are rather closed-minded and those low in dogmatism tend to be open-minded. From the conclusions drawn by Rokeach, it seems highly possible that belief systems might show a difference in favoritism to a teaching-learning situation.

Therefore, based on the findings by Rokeach, should not the social studies teacher, indeed all educators, be concerned with the influence dogmatism has on a student in the learning process? Basically, is there a relationship between the openness and the closedness in the belief system of a student and the type of teaching-learning process he prefers? Thus, one purpose of this study was to see whether or not the belief system possessed and the teaching mode preferred by the student have any causal relationship. Stated specifically in null form, the hypothesis was:

There will be no significant causal relationship between the independent variable, degree of dogmatism, and the dependent variable, the teaching strategy preferred.

A second purpose of this study was to identify why the open and the closed-minded subjects preferred either an expository or a discussive teaching-learning situation.

This study was an initial exploration into the relationship between belief systems and teaching modes. As the outcomes might serve as a basis for future studies,
it was believed by this investigator that an attempt needed to be made to compare the similarities and the differences of the study population who were identified as open or closed in belief system. It was obvious that this study had to limit the number of characteristics to be compared, thus those selected were some factors that tend to be related to individuality. From the selected characteristics, the following questions were posed.

1. How similar or different in age are the open and the closed-minded?

2. How similar or different in mobility and stability in residency are the open and the closed-minded?

3. How similar or different in family background are the open and the closed-minded?

4. How similar or different in participation in activities and preferences in interests are the open and the closed-minded?

5. How similar or different in academic ability are the open and the closed-minded?

6. How similar or different in vocational aspirations are the open and the closed-minded?

Therefore, a third purpose of this study was to compare selected characteristics of the open and the closed-minded.

Implications of the Study

A study to ascertain whether or not there is a causal relationship between dogmatism possessed and teaching strategy preferred by students, to determine why students
prefer either lecture or discussion as the method of instruction, and to compare selected characteristics of the open and the closed-minded seemed worthy to investigate for the following reasons.

1. No study has been conducted to see whether or not there is a causal relationship between openness and closedness in belief system on the part of students and the type of teaching method preferred.

2. Research has been unable to identify which teaching mode is the best to facilitate learning. Because lecture is the method most predominatly used and discussion is the strategy encouraged in the "new social studies" movement, an identity of which one is preferred by students would at least shed light on what the learners desire.

3. Rokeach found that dogmatism influences "problem solving." Considering this factor, it seems that if "problem solving" is expected to be a component of the social studies objectives, there is a need to know what inimical barriers might prevent successful attainment of this goal.

4. If there is a relationship between dogmatism possessed and teaching mode preferred by students, then this study might encourage further investigations.

5. If future experiments are warranted, the identity of some characteristics of this study group can serve as a comparison to other populations.

6. The findings in this study might be helpful in the preparation of future teachers and assist those already conducting classes.

5Ibid., Chaps. 8, 9, and 12.
Definition of Terms

In order to facilitate the readability of this study, the following terms are identified.

1. Dogmatism

This term as used throughout this study is defined by Rokeach as "... the extent to which the person can receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside."  

2. Closed-minded

The individual is less able to "... receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside." 

3. Open-minded

The individual is more able to "... receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside." 

4. Teaching Methods

"Teaching methods are patterns of teacher behavior that are recurrent, applicable to various subject matters, characteristic of more than one teacher, and relevant to learning." 

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6Ibid., 57.
7Ibid.
8Ibid.
5. **Lecture Method**

A teaching strategy that is primarily expository with considerable absence of teacher-student and student-student interaction. Pupils passively participate.

6. **Discussion Method**

A teaching approach with interpersonal participation between teacher and student(s) or between students. Members of the class actively participate.

**Limitations of the Study**

This study has possible limitations in two areas: (1) sample group and (2) instrumentation.

1. The extent to which the findings in this study can be generalized is determined by how well the subjects in this experiment represent the student population across the nation.

2. How effective the instruments measured what they were expected to could affect the validity of the conclusions drawn from the collected data.

**Contents of the Other Chapters in This Thesis**

Chapter II begins with a review of related literature concerning lecture versus discussion as the desirable teaching method and follows with a consideration of dogmatism as theorized and studied by Milton Rokeach and his associates that is applicable to this study. Chapter III describes the setting, sample group, instruments, and the collection and the treatment of the data. Chapter IV gives
the findings and an interpretation. Chapter V contains a summary and recommendations. An Appendixes and a Bibliography conclude this thesis.
CHAPTER XI

REVIEW OF RELATED LITERATURE

This study was primarily undertaken because there is a dearth of investigations concerning whether or not there is a causal relationship between the openness and the closedness in belief systems of students and their preference of either lecture or discussion as a teaching mode. Hence, there is presently a void in directly related literature to review. Therefore, the presentation in this chapter includes material that precipitated this study. The first part reviews the literature relevant to lecture versus discussion as the desirable teaching method with focus on the preferences subjects indicated in the experiments. The second part of this chapter considers dogmatism as theorized and studied by Milton Rokeach and his associates that has relevancy to this research. A summary concludes this chapter.

Lecture Versus Discussion

For over forty years, educators have performed experiments to compare lecture versus discussion for various reasons. Most studies were conducted to identify which mode is more conducive for the acquisition of
knowledge. What mode the learners desire has received little attention. When it was considered, usually that phase of the experiment was relegated to an adjunct part of the investigation. The ensuing studies are typical of the latter type of research.

One of the early studies that gave students an opportunity to express whether they preferred the lecture or the discussion method was reported by Spence, although the main objective was to compare particular learning outcomes in two graduate courses in educational psychology at Columbia in which both lecture and discussion were used.

Each class with a separate instructor met for two hours on Saturday mornings through two semesters. The average enrollment for one class was 148; and for the other class, it was 152. However, the final count in the experiment included only sixty students in each class who were involved both semesters. One instructor lectured the first semester and used the discussion approach the second semester. The other teacher reversed the procedure. The following was the processes for the two methods.

In the lecture method, the instructor talked for two fifty minute periods, allowing time at the end of the period for answering questions. These

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1Ralph B. Spence, "Lecture and Class Discussion in Teaching Educational Psychology," Journal of Educational Psychology, XIX (October, 1928), 454-452.
questions were either handed in beforehand or asked directly at that time. The average time for questions, however, was only about five minutes per week. A very comprehensive bibliography (similar to the one included in "Sketches In and Out of School") was mimeographed and given to each student. During the first semester the students handed in reports of their readings on three by five cards but no definite amount was required. In the second semester, a regular reading report form was prepared and students were required to hand in at least one a week. This increased the amount of reading considerably. Four shorter quizzes were given during each semester and reports on cases and abstracts of magazine articles were also included.

In the discussion method, the general plan was to take a case similar to those published in "Sketches In and Out of School" illustrating the particular topic which was being studied and center the discussion around the case. For example, when intelligence tests were being studied, intelligence test data for an elementary school class were presented. The case was analyzed to see what information was necessary, various class members gave reports of their readings and practical experiences, and then the group tried to state their conclusions, which were summarized by the instructor at the end of the period. Each student was required to hand in each week a short paper on some topic which would help him begin thinking in the direction of the discussion for that week. In the case of the above example, the class was asked to put down all the things which tended to determine the score an individual made in an intelligence test and to evaluate the importance of each. The quizzes and reading reports were the same for the discussion group as for the lecture group.2

The system to identify which method the students preferred was through voluntary written reactions to the modes used. Spence concluded that the students were unable to remark objectively because they were too close to the experiment. This conclusion was drawn because lecture was a two to one favorite for those who had the expository

2Ibid., 456-457.
method last, and the choice was three to two in favor of discussion for those who were taught the second semester by the discursive mode. Thus, the results indicated that neither of the two methods was predominately selected over the other.

At San Diego State College, Ruja compared several outcomes of introductory courses that he taught by either the lecture or the discussion method. In the fall of an academic year, a philosophy course was conducted by an expository strategy; and in another philosophy class and a psychology course, a discussion mode was used. In the spring, the instructional methods for the courses were reversed. Ruja defined the characteristics of each instructional method in his study as follows.

By 'lecture' is meant continuous discourse by instructor for purposes of instruction. By 'discussion' is meant interchange of question and answer among students primarily, with the instructor playing a role chiefly of moderator. The instructor roughly defines the area of discussion and supplies information when directly asked for it or when it illustrates a point already made or when it poses a question relevant to the topic under consideration—but only if this material is not readily available otherwise. Frequently, when he is asked a question, he will turn it back to the student who has asked it, or to other students in the class. Mostly the activity of the instructor consists in reflecting

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3Ibid., 460.

the content and feelings of students' comments and questions, relating these to one another and to a central topic, and promoting orderly sequences of discussion. He does not correct or confirm student judgments (or even misstatements of fact) but rather accepts and reflects them in a "nondirective" manner.5

A secondary comparison of results in the study was the "free responses" that students wrote at the end of each semester which indicated their preference of the two modes. Ruja found that the choices by students did not reach a significant level of confidence; therefore, neither method received a greater selection.6 Some of the remarks given by the students are listed below.

**Favorable to Lecture**

I found this a very stimulating and worthwhile class.
The lectures were complete and well-presented.
Instructor makes lectures too good to miss.

**Unfavorable to Lecture**

The lectures seemed to tend toward monotony at times.
The lectures were rather boring and added little to my understanding of the subject matter.
The instructor is too biased in his opinions. He definitely teaches his own philosophy unerringly.
Not enough work is required.

**Favorable to Discussion**

I walked out of this class feeling as though I had used what intellect I may have.

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5Ibid., 385.
6Ibid., 389.
I thoroughly approve of the methods of instruction, as it stimulates the students to think more about the subject.

Had I put more into the course, I could have gotten more out of it.

I've enjoyed your class very much. I didn't learn everything I should have, but that was my fault, not yours.

**Unfavorable to Discussion**

You did not tell us enough.

At times it was frustrating just to figure out exactly what you did feel or believe.

You never voice an opinion.

I don't enjoy listening to other students--whose opinions are as crackpot as mine--spout off what they think.

The students are not ready for discussion and some of the discussions get stupid.

I couldn't always be sure that the other students in the class were right and I wanted an authoritative view. I consider you an authority on the subject.

The questions were left hanging without a definite conclusion. It is a good idea to let the students discuss but after they are through the instructor should sum up and draw conclusions, so there is a definite answer left in your mind.\(^7\)

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7Rasmussen reported on a study that is somewhat related to the present investigation. Students in thirteen sections of a course entitled "The Psychology of Child

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8Ibid., 389-390.

Development" were allowed to choose either an instructor-centered or a student-centered mode of instruction for their class. Four sections chose the instructor-centered process, and nine classes selected the student-centered approach. Each class met once weekly for sixteen weeks. "Ninety per cent of the students in these classes were school teachers. Eighty-one per cent were graduate students and seventy-four per cent were parents."\(^9\) The mean class size for the four instructor-centered classes was thirty-six; and for the nine student-centered classes, it was eighteen.\(^10\)

The classes were located in eleven different communities, but the teachers followed set procedures.

In the instructor-centered sections class time was distributed as follows: informal lectures, nineteen hours; films, five hours; small discussion groups, five hours; examinations, three hours. Students were expected to read the text and pass the examinations. The instructor attempted to clarify and expand the material in the text. This was done through informal lectures. Students were encouraged to ask questions, give opinions, etc. at any time during the class. The instructor halted questions when they strayed outside of the unit covered during that period. The instructor attempted to be informal, friendly, and helpful in meeting student needs. At various times people in the community were brought in as resource people. This was often done at the suggestion of someone in the class. The procedure for evaluation was handled through two comprehensive examinations, both of which consisted of approximately sixty per cent objective type questions and forty per cent essay.

\(^9\)\textit{Ibid.}, 450.
\(^10\)\textit{Ibid.}, 452.
In the student-centered sections class time was distributed as follows: films, three and one-half hours; class discussion, twenty-eight and one-half hours. The students' responsibilities were to read the text and write between fifteen and twenty personal reactions to either items within the text or within the class discussions. Whenever possible, the entire class sat around a group of tables with the instructor moving from one spot to another from week to week. When a procedural matter was under discussion, the instructor attempted to act as discussion leader if no one else assumed that responsibility. During class discussions of the course content, the instructor seldom attempted to stimulate discussion, practically never made evaluatory comments concerning contributions, and during the first half of the course made a strong attempt to refrain from personal opinions on the items under discussion. At no time did the instructor call on a student. If asked for a personal opinion he tried to give a straightforward and honest answer. The instructor felt that the student-centered situation could most effectively promote significant learning by reducing to a minimum the individual threat to the learner, thus encouraging a more differentiated view of the subject matter. In addition, the instructor attempted to link the various comments together—that is, he attempted to point out the connections between individual speaker's contributions. At the end of each session the instructor made no attempt to provide closure. No final answers were given.¹¹

One of the methods employed to compare the teaching strategies was a questionnaire completed anonymously by each student. One question asked each student to evaluate the method used in his course. The question and the distribution of the responses are given below.¹²

¹¹Ibid., 450-452.
¹²Ibid., 450-452.
Compared to the other classes, this class has been:

<table>
<thead>
<tr>
<th>Very Boring</th>
<th>Dull</th>
<th>The Same</th>
<th>More Interesting</th>
<th>Much More Interesting</th>
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<td>I-C&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3</td>
<td>18</td>
<td>60</td>
<td>36</td>
</tr>
<tr>
<td>S-C&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0</td>
<td>12</td>
<td>23</td>
<td>79</td>
</tr>
</tbody>
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<sup>a</sup>Instructor-centered (N = 122)
<sup>b</sup>Student-centered (N = 145)

The findings were significant at the 0.01 level of confidence.<sup>13</sup> Clearly, students in the student-centered classes showed a higher percentage of satisfaction for their mode of instruction than those who were enrolled in the instructor-centered classes.

At Cornell, Dawson<sup>14</sup> had 140 students in a beginning agronomy course that met for seven hours each week during a semester. The weekly structure of the course was three one-hour lectures, one two-hour laboratory session, and two one-hour recitation periods. It was in the recitation phase the experimentation occurred which was to determine whether agronomic problems could be solved better in a problem-solving or a lecture method.

In three lecture-recitation sections, Dawson proceeded as follows.

The lecture-recitation method... consisted of formal lectures on subject matter included in the

<sup>13</sup>Ibid.

units . . . Occasional illustrations were used on important concepts covered in the lectures. Students . . . were given a mimeograph containing a short dissertation on problem-solving and the steps which one must carry out in order to solve any problem scientifically, but no further reference was made to it . . . Students were not encouraged to ask questions; any which they asked were answered directly.15

Students in the problem-solving-recitation sections experienced the following.

Problem-solving . . . consisted of those procedures which were planned to encourage student participation—

Identification—and stating a major problem
Analysis—of the problem so that the student might see how to solve it
Discrimination—or choice of action of alternatives for solution of the problem
Evaluation—testing each possible choice of action
Generalization—developing the ability to use principles, understandings and skills in new problem situations which have been acquired in solving previous problems.16

One evaluating mechanism at the end of the semester was a questionnaire whereby each student in all the recitation sections evaluated the method used. The possible responses ranged from one (very poor) to five (very good). In comparing the results, Dawson found that a high percentage of the students in the problem-solving-recitation sections liked that mode of instruction while in the lecture-recitation group a high percentage of students indicated that they disliked the lecture-recitation approach.17

15 Ibid., 396.
16 Ibid.
17 Ibid., 402.
Haigh and Schmidt wrote about a study that was done to ascertain if a teacher-centered or a group-centered mode was better for the acquisition of subject matter when students in the group-centered section were not required to undergo a paper and pencil test at the end of the course. The experiment occurred at Springfield College where all sophomores were required to take a general, child, and adolescent psychology sequence. At the beginning of the second course, all students were allowed to select one of the two following methods.

**Teacher-centered**

The instructor knows the facts which are important for the student to learn. It is the instructor's job to get the students interested in learning these facts.

**Group-centered**

The students have questions about the subject. It is the job of the class (including the instructor) to work together in finding answers to these questions.

**Classroom Method**

Communication: Most of the time, the instructor talks to the students. Sometimes the students talk to the instructor. Students listen mostly to the instructor.

Everybody talks to everybody. Students listen to each other as well as to the instructor.

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Role of instructor: Moderates group discussion, contributes information as needed, suggests readings when requested, participates as an active group member. Initiates the questions, contributes his opinion, seeks additional evidence, contributes evidence to group, helps arrive at conclusions, helps others contribute to group. Students assume responsibility for gathering evidence. Instructor and student share responsibility for determining grade.19

Role of student: Learns the course material as presented by instructor. Does the readings as assigned. Gives evidence of understanding on examinations.

Evaluation: Instructor assumes full responsibility for gathering evidence and assigning grade. Students assume responsibility for providing evidence. Instructor and student share responsibility for determining grade.19

Eighty-one students selected a teacher-centered class and seventy-nine chose a group-centered section.20

During the first day of the third course in the sequence, students were again offered the opportunity to select one of the two teaching approaches. There were some students who did not follow up the third course or changed their choice of methods. An interesting finding by Haigh and Schmidt was that of the 110 students who chose to continue in the same group, fifty-five preferred teacher-centered and an equal number desired the group-centered methods.21 Thus, the results showed no significant preference of a teaching method.

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19 Ibid., 297.
20 Ibid., 298.
21 Ibid.
At Arizona State University, Hoover taught three senior courses entitled "Methods of Secondary School Teaching." There were approximately thirty students in each class that met twice a week in two-hour periods during a semester. Throughout the first two-thirds of the courses, Hoover used an expository approach; and in the last one-third, he continued to lecture in one class, used pupil-centered in another, and a group-centered strategy in the third. The investigation was pursued to determine if there were any differences in attitudes of the students toward both the mode of instruction and the course.

The three teaching strategies compared were as follows.

**Teacher-Centered Approach:** . . . . Students gained experience in hearing (and in many cases participating in) lectures, oral and written reports, films, class and panel discussions, debates, and sociodramas. In all cases, however, the instructor determined the method to be used and when it would be applied. Assignments were made and tests were given as the instructor deemed appropriate.

**Pupil-Centered Approach:** . . . . Students were asked to identify their own problems by submitting questions in the designated area of study. With the help of the instructor, problems were grouped into areas which were then explored by interested groups of students. Each group was responsible for reporting its findings to the class. Manner and style of reporting were left to those involved, except that reports were to be judged by standards.

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previously established by the entire class. Overall evaluational procedures of the unit also were determined by the entire class group. Techniques of reporting actually applied included panel discussion, debate, films, and committee reports. The instructor's role was to suggest, recommend and generally guide learning activities.

Group-Centered Approach: . . . emphasis was placed upon the importance of students working together as a dynamic group. Chairs were arranged in a large circle. A class leader, recorder and three group observers were elected and retained until the group decided to replace them with other students. To expedite the instructional process, a steering committee was elected for the purpose of recommending areas of investigation and procedural matters of all kinds. At the end of each class period, class observers discussed group problems briefly. They also made individual evaluations on the basis of criteria established by the group. Instructional techniques were determined by the group. In addition to round table discussion, the class made use of individual reports. The instructor served as the fourth class observer and as a member of the steering committee. Although he remained in the classroom during the entire time, he did not join the group during the discussion periods. After the termination of each discussion period he added, clarified, or sometimes questioned points of the discussion . . . 5-15 minutes of the 100 minutes of actual class time.23

To measure students' attitudes, the Purdue Attitude Scale for Instruction was used before and after the experiment. Using a two-way analysis of variance, Hoover found, in part, that none of the teaching methods were preferred at a significant level of confidence.24

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23 Ibid., 379, 381.
24 Ibid., 380-381.
A study\(^{25}\) that included 272 subjects in a Peace Corps health training course, besides other purposes, was initiated to ascertain whether subjects considered lecture or student participation as more effective in attaining four course objectives which were knowledge gained and attitude, belief, and commitment changes of health concerns.

According to Kerrick et al., there were two sections with each taught by separate teams that included a physician and a health instructor who were very astute in both teaching methods. At the beginning of the twenty-two hour course, there was a random sample made in each class to select fifty students to be taught with emphasis on student participation. The other students were placed in lecture sessions. The expository and the participating sections were conducted as follows.

In lecture sections, instructors were asked to limit class questions and communication among students to 10 minutes. In participating sections, formal lecture was limited to 15 to 20 minutes per session, with 30 to 35 minutes of student-to-student interaction, emphasizing group discussion, buzz groups, role-playing situations, panels, and so forth.\(^{26}\)

At the end of the course, each subject completed a "yes" or "no" course-reaction questionnaire. Some of the


\(^{26}\)Ibid., 260.
items were related to the relationship between the teaching method used in the class and the attainment of course objectives. In comparing mean scores of the various classes, the researchers found that students in the lecture sessions reacted more favorably to their method of instruction than those who were enrolled in student participating classes.27

Summary of Lecture Versus Discussion

The review of the literature given above cited studies representative of those performed partially as a purpose to allow students to identify whether they preferred lecture or discussion as the teaching mode. Indeed, there have been various experiments designed, but actually there has been no reasonable consistency in the results of the investigations. This researcher added another dimension in the quest to identify which mode is preferred by students by relating preference to the degree of open and closedmindness (dogmatism) each subject possessed. As dogmatism used in this study is based on work by Rokeach and his associates, it is therefore appropriate to identify their theories and studies related to this research.

27Ibid., 263, 265.
Dogmatism

According to Rokeach, openness or closedness in belief system is determined by the degree of dogmatism a person possesses, and he defined dogmatism as:

... the extent to which the person can receive, evaluate, and act on relevant information received from the outside on its own intrinsic merits, unencumbered by irrelevant factors in the situation arising from within the person or from the outside. 28

Within his theory, a person does not have a single structured belief system but a belief-disbelief system.

The belief system is conceived to represent all the beliefs, sets, expectancies, or hypotheses, conscious and unconscious, that a person at a given time accepts as true of the world he lives.

The disbelief system is composed of a series of subsystems rather than merely a single one, and contains all the disbeliefs, sets, expectancies, conscious and unconscious, that, to one degree or another a person at a given time rejects as false. 29

Hence, the disbelief system is not merely the opposite of what one believes but "... is conceived to be composed of several subsystems arranged along a continuum of similarity to the belief system." 30

Rokeach surmised that openness or closedness in belief systems seems to be caused by the functioning of the

28 Rokeach, 71.
29 Ibid., 33.
30 Ibid., 291.
belief-disbelief system in its drive "... to serve two powerful and conflicting sets of motives at the same time: the need for a cognitive framework to know and to understand and the need to ward off threatening aspects of reality." Accordingly, the relationship between these two sets determines open-mindedness or closed-mindedness.

To the extent that the cognitive need to know is predominant and the need to ward off threat absent, open systems should result. In the service of the cognitive need to know, external pressures and irrational drives will often be pushed aside, so that information received from the outside will be discriminated, assessed, and acted on according to the objective requirements of the situation. But as the need to ward off threat becomes stronger, the cognitive need to know should become weaker, resulting in more closed belief systems. Under threat, information and source should become inseparable and should be evaluated arbitrarily in line with the rewards and punishments meted out by authority.

... both sets of needs operate together to one degree or another. A person will be open to information insofar as possible, and will reject it, screen it out, or alter it insofar as necessary.32

Research by Rokeach is predicated on conceived defining characteristics of open and closed belief systems that are structured in terms of three major dimensions: (a) a belief-disbelief dimension, (b) a central-peripheral dimension, and (c) a time-perspective dimension. These are the characteristics.

31 Ibid., 67.
32 Ibid., 67-68.
Definition I: The Defining Characteristics of Open-Closed Systems

Open

A. to the extent that, with respect to its organization along belief-disbelief continuum,

1. the magnitude of rejection of disbelief subsystems is relatively low at each point along the continuum;
2. there is communication of parts within and between belief and disbelief systems;
3. there is relatively little discrepancy in the degree of differentiation between belief and disbelief systems;
4. there is relatively high differentiation within the disbelief system;

B. to the extent that, with respect to the organization along the central-peripheral dimension,

1. the specific content of primitive beliefs (central region) is to the effect that the world one lives in, or the situation one is in at a particular moment, is a friendly one;
2. the formal content of beliefs about authority and about people who hold to systems of authority (intermediate region) is to the effect that authority is not absolute and that people are not to be evaluated (if they are to be evaluated at all) according to their agreement or disagreement with such authority;

Closed

1. the magnitude of rejection of disbelief subsystems is relatively high at each point along the disbelief continuum;
2. there is isolation of parts within and between belief and disbelief systems;
3. there is relatively great discrepancy in the degree of differentiation between belief and disbelief systems;
4. there is relatively little differentiation within the disbelief system;

1. the specific content of primitive beliefs (central region) is to the effect that the world one lives in, or the situation one is in at a particular moment, is a threatening one;
2. the formal content of beliefs about authority and about people who hold to systems of authority (intermediate region) is to the effect that authority is absolute and that people are to be accepted and rejected according to their agreement or disagreement with such authority;
3. the structure of beliefs and disbeliefs perceived to emanate from authority (peripheral region) is such that its substructures are in relative communication with each other, and finally;

C. to the extent that, with respect to the time-perspective dimension, there is a

1. relatively broad time perspective. 1. relatively narrow, future-oriented time perspective.33

To test their theories, Rokeach and his associates deductively designed what is known as the Dogmatism Scale by creating items to identify characteristics related to openness and closedness in belief systems. The instrument was statistically tested in several validated studies, and the items included were modified to improve the validity and reduce the length of the Dogmatism Scale.34

The first form (Form A) included fifty-seven items and had a corrected reliability of .70. After an item analysis, the second form (Form B) had a corrected reliability of .75. A subsequent item analysis produced the third form (Form C) which eliminated seven items from Form B and contained thirty-six statements with a corrected reliability of .73. Because the corrected reliability decreased, thirty new items were added, and the fourth form (Form D) resulted in

33 Ibid., 55-56.
34 Ibid., 89-91.
a corrected reliability of .91. To shorten the length of the instrument, another item analysis was conducted that created the fifth and final form (Form E), composed of forty items. The corrected reliability of Form E was .81 for the English College II sample, .78 for the English worker sample and ranged from .68 to .93 for samples at Michigan State University, The Ohio State University, and at a Veteran's Administration domiciliary.

Rokeach and his group performed numerous studies related to problem-solving by using the Doodlebug Problem; and the results showed that both the open and the closed-minded were similar in the ability to assimilate new information; but in the ability to synthesize, the open-minded person was significantly more capable than the closed-minded.35

Summary of Dogmatism

The work by Rokeach and his associates have substantiated that dogmatism affects the belief system of an individual. Furthermore, their studies have attested that both the open and the closed-minded are equally capable to assimilate new data; but in the ability to synthesize, the open-minded is superior.

35Ibid., Chaps. 8, 9, and 12.
Summary

In this chapter, some studies were reviewed that were partially conducted to ascertain whether the subjects in the experiments preferred either lecture or discussion. The results showed no consistency in the selection of one method over the other. In addition, dogmatism as theorized and studied by Rokeach and his associates, was highlighted. The next chapter discusses the procedures followed in this research.
CHAPTER III

METHODOLOGY

This investigation was conducted to determine whether or not there is a significant causal relationship between the degree of dogmatism possessed by subjects and the teaching mode preferred, to identify why subjects preferred either the lecture or the discussion method, and to compare selected characteristics of the sample group who were identified as either open or closed-minded in their belief systems. This chapter describes (1) the setting and the population utilized in this study, (2) the instruments involved in this investigation, (3) the procedures followed to collect the data, and (4) the methods used in the treatment of the data. A brief summary concludes this chapter.

Setting and Population in the Study

Setting.--Through communications (see Appendix K) with the Administrative Office of the Columbus, Ohio, Public Schools and several contacts with the Principal, Instructional Coordinator, and other members of the faculty at North High School, permission was granted to conduct this investigation in the above-mentioned secondary school.
North High School has been in its present location (100 Arcadia Avenue, Columbus, Ohio) since 1924, received an addition to the building in 1957, and was extensively remodeled in 1962 and again in 1968. During the 1968-69 academic year, the student population, which included grades ten through twelve, was approximately 1,500. Prior to the erection of another senior high farther north in the city in 1961, North High had an enrollment of nearly 2,000.

North's school district covers a wide area, and a portion surrounds The Ohio State University. All graduates of two and a part of a third junior high school are promoted to North. To some degree, there has been a transition of homes from single to multiple family occupancy within the school district; and with the exception of an occasional apartment complex, very few residential buildings have been recently constructed.

North High School has a highly respectful past in both academics and extra-curricular activities, and elements of these still linger in traditions. Although the college-bound curricula remains the core of studies for the majority of students, North can be considered a comprehensive secondary school. In recent years, more vocational programs have been added, slow learner classes inaugurated, and effective at the beginning of the 1969-70 academic year a faculty member will devote his entire schedule to a work-study program designed for some students. During the
1968-69 school year, North was classified as an inner-city school which qualified it to receive Federal funds to finance an expansive curricular program to meet the individual needs of members of the student body. The number of graduates who continued on to college declined during the 1960's from approximately 70 per cent to about 50 per cent.

Population.—The subjects in this investigation were members of the thirteen eleventh grade American history classes that ranged in size from eighteen to thirty-five. Initially, 310 students composed the population; but primarily because of absenteeism, 284 constituted the final study group.

Instruments Used in the Study

There were three data-gathering methods used in this study. They were (1) the Rokeach Dogmatism Scale Form E, (2) the conjunctive use of two audio-visual tapes and the Student Selection Sheet, and (3) the Student Demographic Form. A description of each is given below.

Rokeach Dogmatism Scale Form E.—The Opinionnaire (see Appendix A) was deductively designed by Milton Rokeach and his associates through a system of investigating the differences between open and closed-mindness in belief
systems and creating items to identify these characteristics. The Dogmatic Scale underwent five editions, ending with the E Scale composed of the best forty statements from the D Form, the fourth edition. Rokeach suggests that other items be included to conceal the purpose of the Opinionnaire (in this study twenty other statements found in pages 73 to 80 in Rokeach's The Open and Closed Mind were interspersed with the forty items). In reacting to each statement, respondents are requested to mark one of three degrees of either agreement or disagreement ranging from a -3 to a +3 (see Appendix B). The Opinionnaire forces the subjects to respond because the zero point is omitted. Each item in the E Scale is scored by adding a constant of four. The sum of the scores on the forty statements is the total score for the individual. A high score is considered closed-minded and a low score open-minded. To elicit a free response, Rokeach recommends that subjects responding to the Opinionnaire remain anonymous; however,

2Ibid., 73.
3Ibid., 88.
4Ibid.
5Ibid., 73.
if there is a reason to identify the subjects, a coding system might be employed. 6

The Form E Scale was extensively tested with college students and adult groups in the United States and England and was found to be highly reliable. 7 Yet, there have been controversies concerning the validity of the Rokeach Dogmatism Scale Form E. In separate articles Peabody 8 and Litchenstein and others 9 have questioned the construction of the instrument, and Ziller and others 10 believe there is a socio-economic bias in the Opinionnaire. However, Korn and Giddan performed a study, and the results seem to invalidate the claims made by Peabody and Litchenstein and his associates. 11 For the question raised by Ziller and

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6Ibid., 87.
7Ibid., 89-91.
others, it could be argued that in the validation of the instrument, Rokeach used in his norms groups a broad sample of college students and workers. In 1965 Kemp and Kohler did a standardization study and concluded that the Dogmatism Scale Form E was suitable for use with high school students.

Two Audio-Visual Tapes and the Student Selection

Sheet. Two audio-visual tapes were each ten minutes in length and were recorded for this study (see Appendix C for the narration of each tape). Tape designated number one portrayed a discussion mode and number two a lecture approach. The two teaching strategies were selected not only because they are representatives of two extreme types of teaching but also because lecture is the predominant method currently used and discussion has been receiving emphasis in the "new social studies" movement. In an attempt to have the content the same in both tapes, discussion was recorded first and a lecture lesson was planned from the subject matter in the first tape.

The teacher who taught both teaching methods was selected by the following process.

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12 Rokeach, 87-91.

1. A correspondence (see Appendix K) was sent to Professors in the Department of Secondary Social Studies Education at The Ohio State University requesting the names of three social studies teachers in senior high school in the Columbus, Ohio, Public School System who predominately use discussion in their classes and are also capable lecturers.

2. The same communication was given to supervisors of student teachers in secondary social studies at The Ohio State University.

3. The teacher who received the most nominations was given the Rokeach Dogmatism Scale Form E to complete (it was believed by this researcher that the instructor who would teach both modes would be more able if he were open-minded).

4. The responses of the teacher to the Opinionnaire were scored, and he was found to be open-minded. Conferences between the teacher and this investigator followed, resulting in the teacher agreeing to participate in this experiment.

The topic recorded was immigration. The teacher had assigned his students to read "The Immigrant's Experience," one of the Public Issues Series designed by Donald Oliver and Fred Newmann in the Harvard Social Studies Project, and to consider: "Should there be laws governing immigration into the United States Today?" Two weeks after the discussion tape was made, the lecture plan was presented to another group of students. In the taping of both the discussion and the lecture methods, the camera was focused on the teacher as a precaution to prevent subjects who were to participate in this study from selecting a particular teaching strategy because of the attractiveness, ethnic characteristics, and so forth, of a filmed student.
External validation of the two tapes was done by ten judges who hold Ohio certification to teach secondary social studies. Each of the judges separately evaluated the tapes and were not aware of the study. The judges rated the two audio-visual tapes on two separate scales that ranged from zero, lecture, to ten, discussion. Another scale with the same range was employed to judge content with zero representing the content as the same and ten as different on both tapes (see Appendix D for instructions to judges and rating sheet). As Table 1 shows, the judges had a 97 per cent agreement that audio-visual tape number one portrayed discussion, 93 per cent agreement that tape number two represented lecture, and 87 per cent agreement that the content was the same in both tapes. All the figures were above the 80 per cent level of agreement established.

The Student Selection Sheet (see Appendix E).—This instrument was created and used to identify which of the two teaching modes recorded on audio-visual tapes each subject in this study preferred. After each tape was heard and viewed, subjects were able to indicate their preference on the Student Selection Sheet by circling either digit number one or number two. The instrument also had a section where each subject could remark why the one tape preferred was chosen.
### TABLE 1

<table>
<thead>
<tr>
<th>Judge</th>
<th>Tape No. 1 Rating (discussion)</th>
<th>Tape No. 2 Rating (lecture)</th>
<th>Content Rating</th>
<th>Years Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>1</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>2</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>6</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>0</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>8</td>
<td>10</td>
<td>1</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>1</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>0</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Mean</td>
<td>9.7</td>
<td>0.7</td>
<td>1.3</td>
<td>10.2</td>
</tr>
</tbody>
</table>

**The Student Demographic Form.**—This instrument (see Appendix F) was designed as an effort to identify selected characteristics of the open and the closed-minded in this study in six major areas: (1) age, (2) mobility, (3) family, (4) activities and interests, (5) academic ability, and (6) vocational preference. Twenty-five items were selected and preliminarily administered in two eleventh grade classes.
in a senior high school at a distance from North High, and it was found that wording and understanding were clear.

Procedures to Collect the Data

Through consultation with the Instructional Coordinator and the three American history teachers at North High School, the dates of May 8 and May 15, 1969, were selected as the days to conduct this study.

On May 7 each American history teacher read to his classes a prepared memo concerning the study (see Appendix K). On May 8 each class in this investigation was read instructions relevant to this experiment (see Appendix J). The subjects completed the Opinionnaire and a part of the Student Demographic Form. As there were thirteen classes in the nine period schedule, it was impossible for this investigator to be in four classes, so the regular teachers in those classes administered the instruments. Fortunately, each of the teachers was able to be in an earlier class to observe the procedures.

On May 13 a communication was given to members of the faculty involved in this study that reminded them to inform their students on May 14 what procedures would be followed to complete the second phase of this study at the school the next day (see Appendix K). On May 15 all American history classes met in the Projection Room during their regularly scheduled periods. The Projection Room was
an ideal setting because it afforded excellent acoustics, was large enough to accommodate two classes when necessary, and removed the necessity to transport the bulky audio-visual machine at the end of each period. Also, through the cooperation of the audio-visual supervisor in the school, a twenty-one inch television set was used instead of the smaller set of the audio-visual machine.

Subjects were read instructions (see Appendix J), heard and viewed tape number one (discussion) first and tape number two (lecture) second. Following, each subject completed the Student Selection Sheet, returned it to either the class teacher or this researcher, and was given the Student Demographic Form to complete.

Thus, on a designated day, the study population completed the Rokeach Dogmatism Scale Form E and a part of the Student Demographic Form during their regular eleventh grade American history class periods, and a week later heard and viewed the two audio-visual tapes and then indicated their preference on the Student Selection Sheet. The Student Demographic Form was also completed at that time.

Treatment of the Data

Each Opinionnaire answer sheet was scored and the results were fed to a computer to get the standard deviation and the mean for the entire population. The
open and the closed-minded subjects were identified, and the standard deviation and the mean for each extreme group were obtained from a computer. The reasons given for the selection of a teaching mode by subjects of the two extreme groups were categorized and compared.

The hypothesis cited in Chapter I was statistically tested by the use of chi square. "The statistic $x^2$ is used in situations of the type . . . where a comparison of observed and theoretical frequency is required." The following formula was applied.

$$x^2 = \frac{(0-E)^2}{E}$$

where $0 = \text{an observed frequency}$

$E = \text{an expected or theoretical frequency}$.

The data collected by the Student Demographic Form for the open and the closed-minded were analyzed, categorized, and compiled into tables. The selected characteristics were compared for similarities and differences between the two extreme groups and then interpreted in conjunction with the six questions stated in Chapter I.

**Summary**

This chapter described the setting and the population involved in this investigation, the instruments

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used, and the methods followed to gather and treat the data. The next chapter presents and interprets the findings.
RESULTS AND INTERPRETATIONS

Two hundred and eighty-four students enrolled in eleventh grade American history at North High School, Columbus, Ohio, responded to the Rokeach Dogmatism Scale Form E, the Student Selection Sheet after hearing and viewing two teaching strategies on audio-visual tapes, and the Student Demographic Form designed by this investigator. Reporting of the results considers each segment in the order listed above.

Results

The Rokeach Dogmatism Scale Form E.—The study population had scores on the Rokeach Dogmatism Scale Form E from a high of 240 to a low of eighty-three with a range of 157. The range is consistent with the results of the study by Kemp and Kohler who had extremes of 239 and 101 with a range of 138 in their study group.¹

The mean of the 284 subjects in this investigation being reported was 169.97. Kemp and Kohler in their

standardization study had a mean of 165.75. Therefore, the mean in the present study is a reasonable score.

The calculation of the standard deviation of the scores was 26.61, which is quite comparable to the standard deviation of 21.86 found by Kemp and Kohler. Table 2 statistically summarizes the scores.

TABLE 2

STATISTICAL SUMMARY OF SCORES ON THE ROKEACH DOGMATISM SCALE FORM E FOR THE STUDY GROUP (N=284)

<table>
<thead>
<tr>
<th>Range</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>157 (240-83)</td>
<td>169.97</td>
<td>26.61</td>
</tr>
</tbody>
</table>

This study focused on the two extreme groups, thus those who scored one standard deviation above the mean (169.97) were grouped as closed-minded and those one standard deviation below the mean as open-minded. This meant that a score of 197 or above represented closed-mindedness and 143 or lower open-mindedness.

Analyzing the scores of the original population of 284 found forty-six scores in each group (forty-six, 197 or higher; forty-six, 143 or lower). The statistics for the two extreme groups are treated in Table 3.

2Ibid.
3Ibid.
<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closed-minded (high)</td>
<td>46</td>
<td>207</td>
<td>10.97</td>
</tr>
<tr>
<td>Open-minded (low)</td>
<td>46</td>
<td>131</td>
<td>13.41</td>
</tr>
</tbody>
</table>

Summarizing, of the 284 subjects who responded to the Rokeach Dogmatism Scale Form E, forty-six scored in the closed-minded extreme, and an equal number had scores in the open-minded classification.

The Student Selection Sheet.—All 284 subjects responded to the Student Selection Sheet. Herein the responses of the two extreme groups are reported.

Of the forty-six closed-minded subjects, thirty-five gave a preference for the first audio-visual tape (discussion), and eleven chose the second (lecture). For the open-minded members of this study population, thirty-seven selected discussion, and nine preferred lecture. Table 4 shows the results.

The use of $x^2$ (chi square) measure of significance of the variance among the data in the above table yields an $x^2 = .256$. The .05 was used as criterion for level of
TABLE 4
PREFERENCE OF LECTURE AND DISCUSSION MODES
BY THE TWO EXTREME GROUPS (N=92)

<table>
<thead>
<tr>
<th>Teaching Mode</th>
<th>Belief System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Closed</td>
</tr>
<tr>
<td>Lecture</td>
<td>11</td>
</tr>
<tr>
<td>Discussion</td>
<td>35</td>
</tr>
</tbody>
</table>

$x^2 = .256$

significance in this study. With one degree of freedom for a 2 x 2 table, the chi square value for the .05 level would have to be equal to or greater than 3.84. The .256 does not approach the criterion value. Therefore, there was no evidence to reject the null hypothesis; consequently, the results indicated that the hypothesis in this study should be accepted, which was that there will be no significant causal relationship between the independent variable, degree of dogmatism, and the dependent variable, the teaching strategy preferred by subjects.

This part of the study was interested in not only identifying the teaching approach the more or less dogmatic individuals preferred but also the reasons for the preferences. The second part of the Student Selection Sheet requested each subject to indicate in a few sentences
why the chosen teaching strategy was selected. A content analyses of the remarks revealed significant findings.

The closed-minded subjects who selected the second audio-visual tape (lecture method) wanted the teacher to explain the subject matter, preferred to have pertinent material presented to them with the teacher pointing out what was important, expected the teacher to be more in control of the class, felt that in a lecture situation they could get a better understanding of the topic and it was easier to stay on it, and believed they learned more from the lecture method. The open-minded members who preferred the lecture method gave similar remarks as their closed-minded counterparts. They desired to know what was expected of them to remember and wanted to receive the factual information and preferred that the teacher organized, categorized, and explained the subject matter. A listing of the responses of the open and the closed-minded who chose the lecture method follows. Grammatical construction in all responses was edited when appropriate.

Reasons Given by Subjects who Preferred the Second Audio-Visual Tape (Lecture Approach) 

High (Closed-minded) Group N=11

Because in the second class, the teacher explained the subject and the class responded better.

Because the teacher and the students talked and the teacher explained things.
Because I really don't like to be in a discussion. I would rather listen than do the talking.

The teacher presented the basics but still allowed class discussion.

The teacher points out the points and the class listens. This way one can get a better idea of what the meaning of the subject is about rather than just discussing it.

The teacher is more in control of the class. He gives many different points of view.

Because the teacher participates and keeps the discussion alive and interesting and is not boring.

It's more reasonable.

You can get a better understanding of what is actually meant.

Better learning condition. Easier to stay on the subject.

Too many students try to make an argument out of a situation or subjects which they talk about, thus making no sense or headway. I think I would learn more from the second.

Low (Open-minded) Group N=9

It is more interesting and intelligent.

It is more organized.

I like the second (lecture) simply because there is participation of both students and teacher. Another thing is that you know what is expected for you to remember.

You are given information along with the opportunity to speak out in class.

The teacher gives facts and such gives the kids basis for their opinions.

The teacher clears up confusion by clearly categorizing various opinions of the problem. This is a little more conducive to learning.
I like the teacher to do the talking.

The teacher gives you the facts and then he explains the facts. You may question him if you wish.

I think there is a better way of teaching than the two given.

The subjects who chose the first audio-visual tape (discussion approach) were more detailed in their remarks than were those who selected the lecture method. The closed-minded individuals who favored discussion preferred that they be allowed to speak freely and to voice their own opinions without initially being influenced by the teacher's opinions, wanted to give own opinions, wanted to be in situations whereby they were forced to think, felt discussion was an easier way to learn, thought students should have experience in expressing and defending own opinions, desired to discuss among themselves instead of the teacher doing all the talking, wanted a chance to contribute to decisions, believed that in discursive situations they could get a better outlook on the topic, indicated discussion was more interesting and not as boring as a lecture, thought it was more conducive to learning, and related that it offered more class participation which afforded opportunities to evaluate opinions and beliefs openly.

The open-minded subjects who preferred the discussion approach felt there were more opportunities to think, participate, and give opinions; did not want subject matter "spoon-fed" to them; desired to be allowed to view opinions
of other students; felt it more interesting and less boring; believed students were more attentive; wanted more freedom of expression; claimed it helped each other to understand; preferred the opportunity to form own viewpoint; and believed more learning occurred because it was easier to learn from peers. The lists below contain remarks given by subjects in the open and the closed-minded groups who selected the discussion method.

Reasons Given By Subjects Who Preferred The First Audio-Visual Tape (Discussion Approach) N=72

High (Closed-minded) Group N=35

(Seven responses related to content rather than preference for a teaching mode so are not listed)

It is freer. We can speak freely and voice our own opinions without first getting other opinions which would influence our discussion later.

I prefer to give my opinions than being called on and give an answer. It's a lot easier way to learn so I think.

Having the topic open for discussion gives the students experience in expressing and defending their opinions. Having a group discussion gives a variety of opinions, not just the teacher's. It forces the student to think.

In the first, every aspect of the topic can be talked about freely; but in the second, the teacher puts forth aspects and the pupils have to talk about only the ones said.

Because the students participate more than the teacher. The students discuss it among themselves instead of the teacher doing all the talking. I think that students should participate more than teachers.

Because everything said relates very much to the point.
The people in the class have more chance of contributing in the decisions. They can voice their views when they think of them, not when called on.

In the first, the students can debate on the subjects. Debating gives the students a better outlook on the topic. You can really discuss the problem better.

Because you can talk and argue about the topic.

In the first, there is an opportunity to hear a difference of opinion. This is a good way to hear different ideas instead of just one person's.

The teacher lets the kids discuss and express their feelings. Yet he can keep the class under control.

The first has more participation. The students have more of a chance to express themselves.

I like the first one because the students can discuss the subject among themselves. This makes the subject interesting.

There is more class participation. You can find out what others' views are and thereby add to your own.

I think that a class is better taught when the students participate. Sometimes a lecture can become boring. Also in class participation you can usually find both sides of a story.

Because the way the kids can talk about the subject.

I chose one because I think it would be much more interesting to be in a class like that. You can express your own feelings and your opinions about different things.

Because each pupil has a chance to speak what he thinks. This way the class does not get boring.

I think picking out a subject and asking and answering questions through a discussion is more helpful to the student.

The students can express themselves freely. The teacher does not lead them.

Gives the student a chance to speak up and give his view. Many students do not like to take notes and the second class would require notetaking.
The students are able to express themselves without the opinion of the teacher. By doing this, the students aren't influenced one way or the other by the teacher.

The first had class discussion which is better than having a teacher bore you to death.

Because the student gets to voice his opinion and be more of a part of the class.

I like the first one because the class is like a discussion group. The student can give his feelings freely. It isn't boring like a lecture.

More students are given a chance to express themselves and to bring their beliefs out into the open where they can be evaluated by other people and criticized by still others.

I picked the first one because in it the students have a chance to present their point of view on the topic. They can discuss and answer questions in their discussion.

Low (Open-minded) Group N=37

I prefer the first type of situation because you can learn more than facts. You learn more about the people around you.

Because students can participate more and give more of their opinions.

I chose the first one because that type of class gives the student a chance to think for himself rather than having the information "spoon-fed" to him as if he were just a machine.

In the first class, the students could express their own opinions. I think that's the way it should be. In the second class, I felt like if I didn't agree with the teacher, I would be wrong. There wasn't a feeling of free expression in the second class.

I prefer the first tape because I like to know other people's opinions. Maybe by hearing someone else you might decide to like theirs better than the one you had.

To me open discussion in a classroom is more interesting than sitting there listening to someone talk on and on. You are able to express your own personal opinion.
When the teacher lectures, it is boring. You learn more because the students' answers are opinions. Students pay more attention to what is being said when different people say something than when one person lectures.

The first one is more open. I like the idea better.

You can get more points of view instead of just the one of the teacher.

I believe in the new rule of free expression. This sort of class is good in that it allows a student to see other students' views (radical or otherwise). Consequently the student sees all sides of an issue and can logically make up his own mind.

I chose the first class because it gave the student a better chance to think about the subject. However, the teacher could have had a little more to say. The best type of class would be a cross between the two; but having to choose, I readily selected the first.

Discussion groups are much better than a class in which pure facts (or an author's) opinions are told to the class. I think it's better to hear what a variety of people think.

I like to get in arguments and discuss things in class. This leads to a better understanding of the subject. Other kids in class are just as confused on certain points as I am. This way we help each other understand.

At least some of the class really participates. The teacher doesn't hand down any laws the students have to accept. There is free discussion and the opportunity to form your own viewpoint based on the facts presented. It doesn't get enough participation from all students but does get student viewpoints from a wide range of views on the question.

Because you can really learn more when the teacher lets the students talk. He can interject with some good points and question though and keep the discussion controlled. In such a situation, you are forced to think instead of just taking notes.

I liked the first because the students could talk when they had something to say.

The students share a larger part in the responsibilities of the class and make the class what it is. This gives the students their chance to give their opinions, hence
they help themselves and fellow students. This is also an aid to the teacher because it makes his or her job easier.

I enjoy a good discussion, and I would like to know what my classmates think and feel.

I chose the first one because the kids in the class get to give their opinions in the discussion.

Because when you have talking among everyone you get more ideas to think about. Also it allows people to think more and to tax their mind.

The students have a chance to participate in class. While expressing their own ideas, they become more interested in the subject than if the teacher did all the talking.

Students should take part in discussion. The students are involved and more interested in the lesson. The first is more acceptable to different opinions and ideas.

The students have more of a chance to give their own opinions.

I feel that the student should be given the chance to express his opinion like in the first one.

Because it gives the student a chance to voice their opinions which would keep the class from becoming boring.

Because just listening to the teacher is boring. Having classroom discussion, you have different opinions instead of one.

It is not routine and doesn't get boring. Student participation promotes more interest and the student talking puts more of a picture in his mind and values it.

Because it gives the class a chance to participate.

Student's opinions can be discussed.

The teacher didn't do all the talking. Students were allowed to participate freely, voicing their own personal views and freedom to criticize others openly. Very good classroom participation!

I like the first because students discuss ideas that some day they will be deciding about.
The first had more ideas to back them up.

Students participate more in the first. They develop their own ideas and have a sense of cooperation with the other students.

I would like to be in the first type of class because the teacher gave the students a chance to think and express their own views.

The first classroom enables the students to think and have ideas on their own. In classrooms like this, it usually helps students to remember more. I'd prefer to be in the first.

When the students get to run the class, you will get more responses, and it's a lot more interesting and easier to remember.

It is very interesting to participate in an intelligent class conversation. It is relatively easy to learn from your peers.

Summarizing, in this investigation it was found statistically that there was no causal relationship between belief system and preference of a teaching method for the population in this study. Discussion was more often selected over lecture as the preferred teaching mode by a large majority of both the open and the closed-minded. Members in this study who selected lecture as their preference generally wanted to participate passively in the classroom learning situation, and the many subjects who chose the discussion approach highly desired to participate actively within the classroom with considerable freedom to interact verbally among themselves.

The Student Demographic Form.—As this study centered on the open and the closed-minded subjects, only their
responses to the Student Demographic Form are considered. A few parts of the Student Demographic Form are not reported in the results as they did not produce worthwhile data. The selected characteristics of the two groups are reported, compared, and interpreted in six sections: age, mobility, family, activities and interests, academic ability, and vocational aspirations.

Age Section

The median age for the closed-minded subjects was seventeen, whereas the open-minded group had a median age of sixteen. The pattern of distribution for both populations was similar with the sixteen age division containing the highest N; seventeen, second; and eighteen, third. Table 5 shows the ages of subjects in both groups.

Mobility Section

Birthplace

As Table 6 identifies, over 74 per cent of the closed-minded and 60 per cent of the open-minded were born in Columbus, Ohio. The state of West Virginia was the second highest location of birthplace for the high extreme subjects, and communities in Ohio other than Columbus ranked second for the low group. Thus, the subjects in both populations had a larger number born in Columbus, Ohio, than all other areas combined.
### TABLE 5

**AGES OF SUBJECTS**

<table>
<thead>
<tr>
<th>Age</th>
<th>Closed-minded Subjects (N=46)</th>
<th>Open-minded Subjects (N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>17</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>18</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>46</strong></td>
</tr>
</tbody>
</table>

### TABLE 6

**PLACE OF BIRTH**

<table>
<thead>
<tr>
<th>Location</th>
<th>Closed-minded Subjects (N=46)</th>
<th>Open-minded Subjects (N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbus, Ohio</td>
<td>34</td>
<td>27</td>
</tr>
<tr>
<td>West Virginia</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Elsewhere in Ohio</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Foreign Country</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Other Midwest State</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Other State Bordering Ohio</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>South</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>West Coast</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>46</strong></td>
</tr>
</tbody>
</table>
Time Lived in Columbus, Ohio

For the period of residency in Columbus, Ohio, the Lifetime category had the greatest frequency for both groups, although the open-minded extreme was higher at 54 per cent as compared to 41 per cent for the closed-minded members. In the two populations, over 74 per cent of the subjects had lived in Columbus, Ohio, ten or more years. Table 7 gives the length of time subjects had resided in the capitol city of Ohio.

TABLE 7
RESIDENCY IN COLUMBUS

<table>
<thead>
<tr>
<th>Time</th>
<th>Closed-minded (N=46)</th>
<th>Subjects</th>
<th>Open-minded (N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime</td>
<td>21</td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>18-16 yrs.</td>
<td>3</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>15-13 yrs.</td>
<td>6</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>12-10 yrs.</td>
<td>4</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>9-7 yrs.</td>
<td>1</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>6-4 yrs.</td>
<td>4</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>3-1 yrs.</td>
<td>5</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Less than 1 yr.</td>
<td>2</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td></td>
<td>46</td>
</tr>
</tbody>
</table>
Place of Emigration

Table 8 reveals that 76 per cent of the non-lifetime residents in Columbus of the closed-minded immigrated to Columbus, Ohio, from other areas within or states bordering Ohio. For the open-minded, 60 per cent emigrated more from the other regions categorized.

**TABLE 8**

LAST PLACE OF RESIDENCY BEFORE MOVING TO COLUMBUS, OHIO

<table>
<thead>
<tr>
<th>Location</th>
<th>Closed-minded (N=25)</th>
<th>Open-minded (N=21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elsewhere in Ohio</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>West Virginia</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Columbus Area</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>South</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other State Bordering Ohio</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Other Midwest State</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>West Coast</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Foreign Country</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Southwest</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Northeast</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>25</strong></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>
Residing Places

About 90 per cent of the members in both sample groups who had not lived their lifetime in Columbus, Ohio, resided in from one to four different places other than Columbus. For the closed-minded, 56 per cent had lived in either two or three places, whereby the open-minded had slightly less than 50 per cent who had previously resided in three or four locations. The mean in residing places for both groups was three. The data are contained in Table 9 below.

**TABLE 9**

NUMBER OF DIFFERENT RESIDING PLACES OF SUBJECTS WITH NON-LIFETIME RESIDENCY IN COLUMBUS, OHIO

<table>
<thead>
<tr>
<th>Places</th>
<th>Closed-minded Subjects (N=25)</th>
<th>Open-minded Subjects (N=21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>21</td>
</tr>
</tbody>
</table>
Longest Residency

Eighty-five per cent of the open-minded and 76 per cent of the closed-minded had resided longer in Columbus than any other community. Approximately 65 per cent of the high and 91 per cent of the low dogmatic extreme groups had spent more time in Ohio than elsewhere. Table 10 presents the frequency distribution.

**TABLE 10**

LOCATION OF LONGEST RESIDENCY OF SUBJECTS

<table>
<thead>
<tr>
<th>Location</th>
<th>Closed-minded (N=46)</th>
<th>Subjects</th>
<th>Open-minded (N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbus, Ohio</td>
<td>35</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>Elsewhere in Ohio</td>
<td>4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>West Virginia</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Columbus Area</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Other State Bordering Ohio</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Foreign Country</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>46</td>
<td></td>
</tr>
</tbody>
</table>

Time in Present Building

The last analysis for the Mobility Section is the length of time subjects had lived in present housing. From the time subjects began to live in Columbus, Ohio,
approximately 37 per cent of the open-minded and nearly 24 per cent of the closed-minded had not moved. Table 7 showed that twenty-one closed-minded and twenty-five open-minded had lived their lifetime in Columbus. Of these slightly under 10 per cent of the high group and 28 per cent of the low population indicated they still lived in their initial homes. The median time lived in present quarters for those in both groups who had lived their lifetime in Columbus was ten to twelve years for the open-minded and seven to nine years for the closed-minded. Table 11 on the following page contains the findings.

Family Section

Parent(s) in Home

Investigating the Student Demographic Form showed that about four out of five subjects in both populations had a mother and a father in the home. Of those who had one parent absent, 87 per cent of the closed-minded had the father not within the home, whereas mother in 75 per cent of the cases was not present in the homes of the open-minded subjects. The figures are in Table 12.

Fathers Employment

Table 13 reveals the occupations of fathers in both groups. About 70 per cent of both the open and the closed-minded with a father in the home indicated he was skillfully employed. The second highest employment for the
TABLE 11
LENGTH OF TIME LIVED IN PRESENT BUILDING IN RELATIONSHIP TO TIME LIVED IN COLUMBUS

<table>
<thead>
<tr>
<th>Time Lived in Columbus</th>
<th>Lifetime</th>
<th>18-16 yrs.</th>
<th>15-13 yrs.</th>
<th>12-10 yrs.</th>
<th>9-7 yrs.</th>
<th>6-4 yrs.</th>
<th>3-1 yrs.</th>
<th>Less Than 1 yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime</td>
<td>2    7</td>
<td>0    0</td>
<td>4    5</td>
<td>4    3</td>
<td>5    4</td>
<td>2    3</td>
<td>4    3</td>
<td>0    0</td>
</tr>
<tr>
<td>18-16 yrs.</td>
<td>1    1</td>
<td>0    1</td>
<td>0    0</td>
<td>0    0</td>
<td>0    2</td>
<td>0    0</td>
<td>0    0</td>
<td>0    0</td>
</tr>
<tr>
<td>15-13 yrs.</td>
<td></td>
<td>1    0</td>
<td>1    0</td>
<td>0    2</td>
<td>3    2</td>
<td>1    0</td>
<td>0    0</td>
<td>0    0</td>
</tr>
<tr>
<td>12-10 yrs.</td>
<td></td>
<td></td>
<td>0    0</td>
<td>2    0</td>
<td>0    3</td>
<td>1    1</td>
<td>0    0</td>
<td>0    0</td>
</tr>
<tr>
<td>9-7 yrs.</td>
<td></td>
<td></td>
<td></td>
<td>0    1</td>
<td>0    0</td>
<td>1    1</td>
<td>0    1</td>
<td>0    0</td>
</tr>
<tr>
<td>6-4 yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1    4</td>
<td>3    1</td>
<td>0    0</td>
<td>0    0</td>
</tr>
<tr>
<td>3-1 yrs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4    3</td>
<td>1    0</td>
<td>0</td>
</tr>
<tr>
<td>Less Than 1 yr.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2    0</td>
</tr>
<tr>
<td>Total</td>
<td>2    7</td>
<td>1    1</td>
<td>5    6</td>
<td>5    3</td>
<td>5    7</td>
<td>7    10</td>
<td>17   10</td>
<td>4    2</td>
</tr>
</tbody>
</table>

*a-High (N=46), L-Low (N=46)
TABLE 12
PARENT(S) IN HOME OF SUBJECTS

<table>
<thead>
<tr>
<th>Parents</th>
<th>Closed-minded (N=46)</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Father &amp; Mother in Home</td>
<td>37</td>
<td>39</td>
</tr>
<tr>
<td>Only Father in Home</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Only Mother in Home</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Neither Parent in Home</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>46</td>
</tr>
</tbody>
</table>

fathers of the open-minded was in a professional field, and semi-skilled ranked second highest for the fathers of the closed-minded.

Mothers Employed

It was ascertained in Table 12 that forty-four closed-minded and forty open-minded had a mother in the home. Table 14 shows the number of mothers of these subjects who were employed. The percentage for the low extreme was exactly 60 and for the high group about 43. Sixteen per cent of the closed-minded and five per cent of the open-minded who had working mothers were from fatherless homes.
### TABLE 13
FATHERS OCCUPATIONS OF SUBJECTS WITH THE PARENT IN HOME

<table>
<thead>
<tr>
<th>Occupations(^a)</th>
<th>Closed-minded (N=38)</th>
<th>Open-minded (N=43)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skilled</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>Professional</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Retired-Disabled</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Self-employed(^b)</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
<td>43</td>
</tr>
</tbody>
</table>

\(^a\)occupation classifications in Appendix G
\(^b\)occupations unknown

### TABLE 14
MOTHERS OF SUBJECTS WHO WERE EMPLOYED

<table>
<thead>
<tr>
<th></th>
<th>Closed-minded</th>
<th>Open-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers Employed</td>
<td>19</td>
<td>24</td>
</tr>
<tr>
<td>Fathers not in Home</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>24</td>
</tr>
</tbody>
</table>
Children in Family

Table 15 gives the number of children in the families of both groups. The closed-minded had five as the mean number of children in the family and the open-minded, three.

**TABLE 15**

**NUMBER OF CHILDREN IN FAMILY OF SUBJECTS**

<table>
<thead>
<tr>
<th>Children in Family</th>
<th>Closed-minded (N=46)</th>
<th>Subjects</th>
<th>Open-minded (N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>9</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>46</strong></td>
<td></td>
</tr>
</tbody>
</table>

Order of Subjects within the Mean to Siblings

A further investigation into the mean number of children in each population revealed that the subjects
within the mean in both groups had a mean rank of second to their siblings (closed-minded, second of five; open-minded, second of three). Table 16 contains the data.

**TABLE 16**

**ORDER OF SUBJECTS WITHIN THE MEAN TO SIBLINGS**

<table>
<thead>
<tr>
<th>Children in Family</th>
<th>1st Order Subjects</th>
<th>2nd Order Subjects</th>
<th>3rd Order Subjects</th>
<th>4th Order Subjects</th>
<th>5th Order Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ha</td>
<td>L</td>
<td>Ha</td>
<td>L</td>
<td>Ha</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

^aHa-high, L-low

**Activities and Interests Section**

**Activities**

Twenty-two per cent of the closed-minded and 33 per cent of the open-minded belonged to no organizations, either in or out of school. The mean number of organizational membership for the high dogmatic group was one in school and one out of school and for the low extreme sample group somewhere between one in and zero out of school and one in and one out of school. Seventy per cent of the open-minded who belonged to organizations showed a greater
favorite for membership to in the school groups as opposed to 44 per cent for the closed-minded. Thirty-four per cent of the closed-minded and 10 per cent of the open-minded who belonged to organizations had equal membership to in and out of school groups. Data are given in Table 17 on the following page.

Interests

The first preference given by members in both study groups in use of spare time away from school is shown in Table 18. Sports had the largest percentage of responses in both populations. Forty-three per cent of the open-minded and 33 per cent of the closed-minded preferred to spend their leisure time in a sport activity.

Academic Section

Attendance in Columbus Public Elementary School

As identified in Table 19, 24 per cent of the closed-minded and 22 per cent of the open-minded had no elementary training in the Columbus, Ohio, Public Schools. Fifty-seven per cent of the open-minded and nearly 43 per cent of the closed-minded received their six years of elementary training in the school in which they initially enrolled; and for subjects with lifetime residency in Columbus, Ohio, the percentages were 60 for the open-minded and 57 for the closed-minded.
### TABLE 17
ORGANIZATIONAL MEMBERSHIP OF SUBJECTS

<table>
<thead>
<tr>
<th>Organizations</th>
<th>Subjects</th>
<th>Organizations</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>Out of School</td>
<td>H&lt;sup&gt;a&lt;/sup&gt;</td>
<td>L</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>0</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>0</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34</strong></td>
<td><strong>31</strong></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>H-high (N=46), L-low (N=46)
### TABLE 18
SPARE TIME REFERENCE

<table>
<thead>
<tr>
<th>Interest</th>
<th>Subjects</th>
<th>Interest</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>H</strong></td>
<td><strong>L</strong></td>
<td><strong>H</strong></td>
</tr>
<tr>
<td>Sports&lt;sup&gt;b&lt;/sup&gt;</td>
<td>15</td>
<td>20</td>
<td>Working</td>
</tr>
<tr>
<td>Music&lt;sup&gt;b&lt;/sup&gt;</td>
<td>9</td>
<td>1</td>
<td>Art (paint-draw)</td>
</tr>
<tr>
<td>Dating</td>
<td>0</td>
<td>5</td>
<td>Church Work</td>
</tr>
<tr>
<td>Sewing</td>
<td>4</td>
<td>1</td>
<td>Motorcycling</td>
</tr>
<tr>
<td>Sleeping</td>
<td>0</td>
<td>4</td>
<td>Shopping</td>
</tr>
<tr>
<td>Reading</td>
<td>3</td>
<td>1</td>
<td>Movies</td>
</tr>
<tr>
<td>Dancing</td>
<td>0</td>
<td>3</td>
<td>Thinking</td>
</tr>
<tr>
<td>Picnicking-Camping</td>
<td>0</td>
<td>3</td>
<td>Candy Striping</td>
</tr>
<tr>
<td>Visit with Friends</td>
<td>2</td>
<td>4</td>
<td>Television</td>
</tr>
<tr>
<td>Automobiles</td>
<td>2</td>
<td>2</td>
<td>Work with Retarded Children</td>
</tr>
<tr>
<td>Loafing Around</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
<td><strong>45</strong></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>H-high (N=46), L-low (N=46)
<sup>b</sup>classification in Appendix H
TABLE 19

RESIDENCY IN COLUMBUS, OHIO, IN RELATIONSHIP TO NUMBER OF COLUMBUS PUBLIC ELEMENTARY SCHOOLS ATTENDED

<table>
<thead>
<tr>
<th>Elementary Schools</th>
<th>Lifetime 18-16 yrs.</th>
<th>15-13 yrs.</th>
<th>12-10 yrs.</th>
<th>9-7 yrs.</th>
<th>6-4 yrs.</th>
<th>3-1 yrs.</th>
<th>Less Than 1 yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H L</td>
<td>H L</td>
<td>H L</td>
<td>H L</td>
<td>H L</td>
<td>H L</td>
<td>H L</td>
</tr>
<tr>
<td>0</td>
<td>1 4</td>
<td>0 0</td>
<td>1 1</td>
<td>0 0</td>
<td>0 0</td>
<td>2 1</td>
<td>5 3</td>
</tr>
<tr>
<td>1</td>
<td>12 15</td>
<td>1 2</td>
<td>4 1</td>
<td>1 1</td>
<td>0 3</td>
<td>2 4</td>
<td>0 0</td>
</tr>
<tr>
<td>2</td>
<td>3 4</td>
<td>1 0</td>
<td>1 2</td>
<td>0 2</td>
<td>1 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>3</td>
<td>4 1</td>
<td>0 0</td>
<td>0 0</td>
<td>1 0</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>4</td>
<td>0 1</td>
<td>1 0</td>
<td>0 0</td>
<td>1 0</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>5</td>
<td>1 0</td>
<td>0 0</td>
<td>0 0</td>
<td>1 0</td>
<td>0 0</td>
<td>0 0</td>
<td>0 0</td>
</tr>
<tr>
<td>Total</td>
<td>21 25</td>
<td>3 2</td>
<td>6 4</td>
<td>4 3</td>
<td>1 3</td>
<td>4 5</td>
<td>5 3</td>
</tr>
</tbody>
</table>

aH-high (N=46), L-low (N=46)
Attendance in Parochial Elementary School

Although enrollment of subjects in private schools for educational training was not an original consideration in this study, the results compiled from the Student Demographic Form produced some differences between the open and the closed-minded. An analysis of both groups found that twelve subjects had some attendance in elementary Catholic schools. Table 20 identifies that 60 per cent of the twelve were open-minded.

TABLE 20

ATTENDANCE IN PAROCHIAL ELEMENTARY SCHOOL

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Closed-minded</th>
<th>Open-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td>$^a$</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

$^a$ attended in previous residing places
$^b$ attended in previous residing places

Of the twelve subjects who had enrollment in Catholic elementary schools, seven completed six years. Within this number, 86 per cent were found to be open-minded. The figures are in Table 21.

Attendance in Columbus Public Junior High School

Only 15 per cent of the high and 10 per cent of the low groups never attended a Columbus, Ohio, public junior
TABLE 21
ATTENDED PAROCHIAL ELEMENTARY SCHOOL SIX YEARS

<table>
<thead>
<tr>
<th>Subjects</th>
<th>Closed-minded</th>
<th>Open-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>6&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>2 in communities other than Columbus

high school. Of the two populations, the low extreme had more subjects who attended grades seven through nine in the first and only Columbus public junior high enrolled which was the same results in elementary attendance. The percentages were 80 for the open-minded and 76 for the closed-minded. For the lifetime residents in Columbus, 88 per cent of the open-minded and 86 per cent of the closed-minded never transferred from one junior high to another during that period of training. Compilations are located in Table 22.

Attendance in Parochial School--Grades 7, 8, 9

The Demographic Form revealed that six subjects attended all or a part of their junior high school period in a Catholic school. Of these, 66 per cent were found in the open-minded group. The findings are presented in Table 23.
TABLE 22
RESIDENCE IN COLUMBUS, OHIO, IN RELATIONSHIP TO NUMBER OF COLUMBUS
PUBLIC JUNIOR HIGH SCHOOLS ATTENDED

<table>
<thead>
<tr>
<th>Junior High Schools</th>
<th>Lifetime 18-16 yrs.</th>
<th>15-13 yrs.</th>
<th>12-10 yrs.</th>
<th>9-7 yrs.</th>
<th>6-4 yrs.</th>
<th>3-1 yrs.</th>
<th>Less Than 1 yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjects</td>
<td>H L H L H L H L H L H L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0 2 0 0 2 0 0 0 0 1 3 1 2 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1 8 22 3 2 4 3 3 2 1 2 4 4 2 2 0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>3 1 0 0 0 1 1 1 0 1 0 0 0 0 0 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>21 25 3 2 6 4 4 3 1 3 4 5 5 3 2 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)H-high (N=46), L-low (N=46)
TABLE 23
ATTENDED PAROCHIAL SCHOOL IN GRADES 7, 8, 9

<table>
<thead>
<tr>
<th>Grade</th>
<th>Closed-minded</th>
<th>Open-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>7 &amp; 8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>7, 8, 9</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Attendance in Columbus Public Senior High School

Nearly 95 per cent of subjects in both groups attended only North High School for senior high studies in the Columbus Public School System. Table 24 compares senior high attendance to period of residency in Columbus, Ohio.

Parochial Senior High Attendance

Table 25 shows that two subjects attended the tenth grade in a Catholic senior high school and were members of the open-minded group. One was a lifetime resident of Columbus, Ohio, and attended Catholic schools through grade ten. The other had resided six years in Columbus with all formal education but the eleventh grade in parochial enrollment, either in Columbus or elsewhere.
<table>
<thead>
<tr>
<th>Senior High Schools</th>
<th>Residency in Columbus, Ohio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lifetime</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>0 0</td>
</tr>
<tr>
<td>3</td>
<td>0 1</td>
</tr>
<tr>
<td>Total</td>
<td>21 24</td>
</tr>
</tbody>
</table>

\( ^a \text{H-high (N=46), L-low (N=46) } \)
TABLE 25
PAROCHIAL SCHOOL ATTENDANCE IN PART OF SENIOR HIGH

<table>
<thead>
<tr>
<th>Grade</th>
<th>Closed-minded Subjects</th>
<th>Open-minded Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Curriculum
Within the closed-minded group, 43 per cent of the members were enrolled in the general curricula, while 46 per cent of the open-minded members were in the academic program. Table 26 also shows that the closed-minded had a larger enrollment than the open-minded in the commercial and the vocational programs.

Anticipated Credits at Graduation
The mean number of credits anticipated at the time of graduation from senior high school for those who responded to the respective section of the Student Demographic Form for the two populations was nineteen. Table 27 shows the results.

Accumulative Point-hour
The grade average given by each subject for courses completed through the first semester of the 1968-69 academic year is in Table 28 on page 83. Some subjects
### TABLE 26
CURRICULUM PURSUED BY SUBJECTS

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Closed-minded (N=46)</th>
<th>Subjects</th>
<th>Open-minded (N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>20</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Academic</td>
<td>9</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Commercial</td>
<td>8</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Vocational</td>
<td>8</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>No Response</td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td></td>
<td>46</td>
</tr>
</tbody>
</table>

Did not initially know their accumulatives. Therefore, in each class during the first day of this study, the process to calculate point-hour had to be explained. Subsequently, the teachers of the classes involved in this investigation offered assistance during the week between the two days of this study. Moreover, members of this study group who were still unable to figure their grade averages were again given the opportunity during the second day of this study at the school. Within the period of time subjects completed the Student Demographic Form, they were urged to figure their averages on the back of the instrument.
### TABLE 27
ANTICIPATED CREDITS AT GRADUATION

<table>
<thead>
<tr>
<th>Credits</th>
<th>Subjects</th>
<th>Credits</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H(^a)</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>15</td>
<td>0</td>
<td>1</td>
<td>20</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
<td>0</td>
<td>20.1</td>
</tr>
<tr>
<td>17</td>
<td>7</td>
<td>8</td>
<td>20.3</td>
</tr>
<tr>
<td>17.1</td>
<td>1</td>
<td>0</td>
<td>20.4</td>
</tr>
<tr>
<td>17.2</td>
<td>0</td>
<td>1</td>
<td>20.5</td>
</tr>
<tr>
<td>17.4</td>
<td>1</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>17.5</td>
<td>1</td>
<td>1</td>
<td>21.1</td>
</tr>
<tr>
<td>18</td>
<td>3</td>
<td>3</td>
<td>21.2</td>
</tr>
<tr>
<td>18.2</td>
<td>1</td>
<td>0</td>
<td>21.3</td>
</tr>
<tr>
<td>18.5</td>
<td>1</td>
<td>1</td>
<td>21.5</td>
</tr>
<tr>
<td>18.7</td>
<td>0</td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>19</td>
<td>7</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>19.1</td>
<td>1</td>
<td>0</td>
<td>23.2</td>
</tr>
<tr>
<td>19.4</td>
<td>1</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>19.5</td>
<td>1</td>
<td>0</td>
<td>25</td>
</tr>
<tr>
<td>19.6</td>
<td>1</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>19.7</td>
<td>0</td>
<td>1</td>
<td>No Response</td>
</tr>
</tbody>
</table>

Total 28 23

Total 18 23

\(^a\)H-high (N=46), L-low (N=46)
TABLE 28
ACCUMULATIVE POINT-HOUR

<table>
<thead>
<tr>
<th>Grade Average</th>
<th>Subjects</th>
<th>Grade Average</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H^a</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>1.5</td>
<td>3</td>
<td>1</td>
<td>2.9</td>
</tr>
<tr>
<td>1.6</td>
<td>1</td>
<td>0</td>
<td>3.0</td>
</tr>
<tr>
<td>1.8</td>
<td>1</td>
<td>0</td>
<td>3.1</td>
</tr>
<tr>
<td>1.9</td>
<td>0</td>
<td>1</td>
<td>3.2</td>
</tr>
<tr>
<td>2.0</td>
<td>8</td>
<td>7</td>
<td>3.3</td>
</tr>
<tr>
<td>2.1</td>
<td>3</td>
<td>1</td>
<td>3.4</td>
</tr>
<tr>
<td>2.2</td>
<td>0</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td>2.4</td>
<td>1</td>
<td>0</td>
<td>3.6</td>
</tr>
<tr>
<td>2.5</td>
<td>5</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td>2.6</td>
<td>5</td>
<td>0</td>
<td>3.8</td>
</tr>
<tr>
<td>2.7</td>
<td>1</td>
<td>2</td>
<td>No Response</td>
</tr>
<tr>
<td>2.8</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>21</td>
<td>16</td>
</tr>
</tbody>
</table>

^aH-high (N=146), L-low (N=146)

if they did not know them, and a check of those who did
found the mathematics to be correct.

Considering only the averages of those who responded,
the mean accumulative point-hour for the open-minded was
2.9; and for the closed-minded, it was lower at 2.5.
Most and Least Liked Course

Tables 29 and 30 give the courses liked and disliked by the two populations (Appendix I contains the basis for the like or the dislike of a course given by each subject). There was a dichotomy in frequency of choices for the open-minded as history was not only the most but also the least preferred course. History, too, received the highest frequency distribution as the least liked by the closed-minded; and in preference of courses, the high group favored mathematics then history.

Academic Aspirations

Table 31 on page 87 reveals that 52 per cent of the closed-minded planned to terminate formal education at the end of the twelfth grade, and 26 per cent expected to complete four or more years of college. For the open-minded, 24 per cent indicated that they would not continue schooling beyond high school commencement, and 52 per cent mentioned that they would attempt to complete requirements for either a bachelor's or a graduate degree.

Vocational Aspirations Section

Nearly 28 per cent of the open-minded as compared to 7 per cent of the closed-minded gave no career preference. Table 32 shows that the sum of careers given by both groups was twenty-eight. Of the twenty-eight, twelve areas of
TABLE 29
MOST LIKED COURSE

<table>
<thead>
<tr>
<th>Course</th>
<th>Subjects</th>
<th>Course</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H(^a)</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>History</td>
<td>4</td>
<td>7</td>
<td>Home Management</td>
</tr>
<tr>
<td>Mathematics</td>
<td>5</td>
<td>5</td>
<td>Distributive Ed.</td>
</tr>
<tr>
<td>English</td>
<td>3</td>
<td>5</td>
<td>Orchestra</td>
</tr>
<tr>
<td>Drafting</td>
<td>3</td>
<td>4</td>
<td>Radio-Speech</td>
</tr>
<tr>
<td>Medical Ass't.</td>
<td>3</td>
<td>2</td>
<td>Sales</td>
</tr>
<tr>
<td>Music</td>
<td>1</td>
<td>3</td>
<td>Foods</td>
</tr>
<tr>
<td>Physical Ed.</td>
<td>3</td>
<td>0</td>
<td>Science</td>
</tr>
<tr>
<td>Office Practice</td>
<td>3</td>
<td>0</td>
<td>Sewing</td>
</tr>
<tr>
<td>Bookkeeping</td>
<td>3</td>
<td>0</td>
<td>Trigonometry</td>
</tr>
<tr>
<td>Algebra</td>
<td>2</td>
<td>2</td>
<td>Bowling</td>
</tr>
<tr>
<td>Typing</td>
<td>2</td>
<td>1</td>
<td>Wood</td>
</tr>
<tr>
<td>Spanish</td>
<td>2</td>
<td>1</td>
<td>Latin</td>
</tr>
<tr>
<td>Health</td>
<td>2</td>
<td>0</td>
<td>Geometry</td>
</tr>
<tr>
<td>French</td>
<td>0</td>
<td>2</td>
<td>Child Care</td>
</tr>
<tr>
<td>Art</td>
<td>1</td>
<td>1</td>
<td>None</td>
</tr>
<tr>
<td>Home Economics</td>
<td>1</td>
<td>1</td>
<td>No Response</td>
</tr>
<tr>
<td>Business Math</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>34</td>
<td>7</td>
</tr>
</tbody>
</table>

\(^a\)H-high (N=46), L-low (N=46)
# TABLE 30
## LEAST LIKED COURSE

<table>
<thead>
<tr>
<th>Course</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H^a</td>
</tr>
<tr>
<td>History</td>
<td>15</td>
</tr>
<tr>
<td>English</td>
<td>10</td>
</tr>
<tr>
<td>Chemistry</td>
<td>1</td>
</tr>
<tr>
<td>Algebra</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
</tr>
<tr>
<td>Spanish</td>
<td>0</td>
</tr>
<tr>
<td>Biology</td>
<td>2</td>
</tr>
<tr>
<td>French</td>
<td>2</td>
</tr>
<tr>
<td>Physical Ed.</td>
<td>1</td>
</tr>
<tr>
<td>German</td>
<td>1</td>
</tr>
<tr>
<td>Bookkeeping</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H</td>
</tr>
<tr>
<td>Health</td>
<td>1</td>
</tr>
<tr>
<td>English Lit.</td>
<td>1</td>
</tr>
<tr>
<td>American Lit.</td>
<td>1</td>
</tr>
<tr>
<td>Office Practice</td>
<td>1</td>
</tr>
<tr>
<td>Sales</td>
<td>1</td>
</tr>
<tr>
<td>Geometry</td>
<td>0</td>
</tr>
<tr>
<td>Science</td>
<td>0</td>
</tr>
<tr>
<td>Typing</td>
<td>0</td>
</tr>
<tr>
<td>Journalism</td>
<td>0</td>
</tr>
<tr>
<td>None</td>
<td>3</td>
</tr>
</tbody>
</table>

^a H-high (N=46), L-low (N=46)
### TABLE 31
**ACADEMIC ASPIRATIONS**

<table>
<thead>
<tr>
<th>Academic Level</th>
<th>Closed-minded (N=46)</th>
<th>Open-minded (N=46)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>24</td>
<td>11</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>Business College</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Master's Degree</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Ph.D.</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2 Years College (no degree)</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Vocational/Technical School</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Junior College Graduate</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Undecided</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46</strong></td>
<td><strong>46</strong></td>
</tr>
</tbody>
</table>
TABLE 32
CAREER PREFERENCE

<table>
<thead>
<tr>
<th>Career</th>
<th>Subjects</th>
<th>Career</th>
<th>Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H</td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>Office Work</td>
<td>13</td>
<td>5</td>
<td>Police Work</td>
</tr>
<tr>
<td>Teacher</td>
<td>6</td>
<td>6</td>
<td>Accountant</td>
</tr>
<tr>
<td>Engineer</td>
<td>2</td>
<td>3</td>
<td>Mechanic</td>
</tr>
<tr>
<td>Medical Assistant</td>
<td>3</td>
<td>1</td>
<td>Marriage</td>
</tr>
<tr>
<td>Military</td>
<td>2</td>
<td>1</td>
<td>Commercial Artist</td>
</tr>
<tr>
<td>Registered Nurse</td>
<td>2</td>
<td>1</td>
<td>Missionary Work</td>
</tr>
<tr>
<td>Construction Work</td>
<td>2</td>
<td>1</td>
<td>Business Admt'r.</td>
</tr>
<tr>
<td>Lawyer</td>
<td>1</td>
<td>2</td>
<td>Audio-Visual Work</td>
</tr>
<tr>
<td>Sales</td>
<td>2</td>
<td>0</td>
<td>Just Work</td>
</tr>
<tr>
<td>Airline Hostess</td>
<td>0</td>
<td>2</td>
<td>Politics</td>
</tr>
<tr>
<td>Social Work</td>
<td>0</td>
<td>2</td>
<td>VISTA</td>
</tr>
<tr>
<td>Draftsman</td>
<td>0</td>
<td>2</td>
<td>Actor</td>
</tr>
<tr>
<td>Musician</td>
<td>0</td>
<td>2</td>
<td>Conservation</td>
</tr>
<tr>
<td>Data Processing</td>
<td>1</td>
<td>1</td>
<td>Undecided</td>
</tr>
<tr>
<td>Electronics</td>
<td>1</td>
<td>1</td>
<td>No Response</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\)H-high (N=46), L-low (N=46)
employment were the choices of at least one member in each group. Of the remaining sixteen careers, nine were identified by only the open-minded and seven by the closed-minded. Office work then teaching were mentioned the most by the closed-minded, and the open-minded gave the opposite as favorites.

Interpretations

The 284 subjects in the initial population had no identifiable problems in either responding to the Rokeach Dogmatism Scale Form E, which attested the findings of Kemp and Kohler in their standardization study, or reacting to the two audio-visual tapes. Initially, this investigator questioned the possibility of bias reflecting in the selection of the preferred teaching strategy by subjects because all members in the population heard and viewed discussion first and lecture second. However, if there were bias, in all likelihood it would have to be considered negative because lecture was seen last and less selected than discussion. The order of presentation of the two modes occurred because discussion preceded lecture on the same tape. To have presented the two strategies alternately to every other class would have required either the use of two audio-visual machines or the clumsy procedure of stopping and starting the tape at appropriate places.
The remarks made by the forty-six open and the forty-six closed-minded subjects pertaining to the reason for selection of a teaching mode firmly supported the statistical findings in this study. Numerous comments revealed disenchantment with teacher talk. Indeed, the statements were probably indictments against the expository type of teaching mode the subjects had predominately experienced in the past. Preference by an overwhelming majority of both groups (thirty-five closed-minded and thirty-seven open-minded) for discussion over lecture as the teaching strategy might also have been an outward expressing of inner feelings which characterize the movement for more freedom by the younger generation within the American society at large.

The analyses of data collected by the items in the Student Demographic Form did produce results that showed some similarities and differences between the forty-six open and the forty-six closed-minded in the six major areas of classification. The findings however were not clear dichotomies as some similarities and differences were small in number. Thus, the findings should be accepted with caution as more investigations need to be undertaken to ascertain validity. The responses to the Student Demographic Form did answer the six questions stated in Chapter One. Those questions are considered below along with further interpretations.
Question 1: How similar or different in age are the open and the closed-minded?

A significant finding was the difference in the median age between the open and the closed-minded groups. Within the population in this study, it can be concluded that the open-minded subjects had an average age that was younger than the closed-minded. An obvious reason for the difference was the higher frequency of seventeen to nineteen year old subjects in the closed-minded group as opposed to the higher number of open-minded who were fifteen or sixteen years in age.

Question 2: How similar or different in mobility and stability in residency are the open and the closed-minded?

Data in the Mobility Section indicated that the closed-minded group was slightly more mobile in residency than the open-minded. Because more closed-minded subjects were born in Columbus, Ohio, one might quickly conclude that stability characterized them because they currently lived in the place of their birth; however, the results showed the open-minded more stable in place of residency because a larger number of open rather than closed-minded had lived longer in Columbus, Ohio, than elsewhere, resided longer in their present homesites, and attended fewer elementary and junior high schools.
Another finding noteworthy to mention is that a majority of the subjects who were born in or emigrated from West Virginia were closed-minded. Since World War II, there has been a sizeable number of people moving to Columbus, Ohio, from West Virginia and Kentucky. The latter state did not receive separate classification in this study because no subject in either group was born in Kentucky. Moreover, there was only one subject who emigrated from Kentucky to Columbus, and that individual was also closed-minded. The sample was too small to validate any conclusions, but this study showed that a majority of those subjects from Appalachia were closed-minded.

Question 3: How similar or different in family background are the open and the closed-minded?

The items in the Family Section of the Student Demographic Form revealed some similarities and differences. Although there were more subjects in the two populations with both parents living within the home, a notable difference was found when one parent was absent. For the open-minded, mother rather than father was more frequently absent from the home, and the reverse was found for the closed-minded. As a point of inference, it is more often the mother instead of the father who scorns and scolds the children in the family; thus, the motherless home might allow more freedom and subsequently a climate conducive to
open-mindedness in comparison to the home with the mother applying more restrictions resulting in less freedom and the cultivation of closed-mindedness by children. This is purely conjecture because in this study the length of parental absence was unknown.

Of the subjects in both groups who had a father in the home, a large majority of those parents were skillfully employed. There was a difference in the second highest area of employment. A significant number of the fathers of the open-minded had occupations in a professional area with semi-skilled more predominant for the fathers of the closed-minded. It might be that the economic situation within the home and the educational background of the father have some relationship to the belief systems of the children in the family.

There was an interesting result relevant to children in the families of subjects. The average order of subjects to siblings in both groups was two, but a difference occurred in the mean number of children in the families of both groups. The open-minded had fewer with three and the closed-minded more with five. As the open-minded had fewer younger siblings than the closed-minded, it might be correct to conclude that the belief systems developed by subjects might have been somewhat influenced by the degree of responsibility the individuals had in the rearing of younger siblings.
Question 4: How similar or different in participation in activities and preferences in interests are the open and the closed-minded?

Organizational participation for both populations on the average tended to be low. Of the two groups, the closed-minded seemed to be slightly more prone than the open-minded to join organized groups. The data revealed that of those who belonged to organizations and membership was not equal in both in and out of school functions the open-minded rather than the closed-minded favored participation in activities supervised by the school, and the reverse was found for out of school membership.

The first preference for both the open and the closed-minded in use of spare time away from school was sports. The various types of sports given as interests by the two groups seemed to indicate that both populations had an active rather than a passive interest. An unusual finding in interests given by other subjects was the differences in typical teenage interests in music, dating, and dancing. Nine of the closed-minded favored music, and only one open-minded identified this interest. On the other hand, eight open-minded revealed an interest in either dating or dancing, and not one of the closed-minded gave either of the two as a spare time preference. The Student Demographic Form showed the average age of the closed-minded older than the open-minded. It seems
possible that the desire to be with the opposite sex was more prevalent for the younger open-minded than it was for the older closed-minded.

Question 5: How similar or different in academic ability are the open and the closed-minded?

The data compiled in tables associated with the academic characteristics of both groups showed the open-minded superior to the closed-minded. Notably was the curriculum pursued by the largest number in both groups. For the open-minded, it was the academic (college-bound) program and the closed-minded, the general curricula. There was however a sizeable number of the open-minded enrolled in the general track but also an equal number of the closed-minded in the vocational and the commercial programs. The data likewise indicated the open-minded were performing better academically as the mean average for the open-minded was 2.9 as compared to 2.5 for the closed-minded.

Another interesting result in the Academic Section was that the courses most frequently identified as the most and the least liked by both groups were required disciplines in the curriculum. Both the open and the closed-minded showed a high dislike for history. Interesting also was the choice of history over all other courses as the one most liked by the open-minded! The closed-minded preferred mathematics first and history second. Statements which
indicated why each subject liked or disliked a course showed that instructional procedures had some influence on choices (see Appendix I).

Interests in post-secondary education showed that the open-minded subjects had higher levels of aspirations than the closed-minded population. The open-minded had a higher percentage than the closed-minded who planned to obtain a college degree and a lower percentage who expected to terminate formal education after graduation from senior high school.

Question 6: How similar or different in vocational aspirations are the open and the closed-minded?

The greatest interests in future employment were nearly the same for both groups. For the open-minded, the most preferred careers were teaching then office work, while the preferences were the opposite for the closed-minded. Vocational interests showed a relationship to academic aspirations because the open-minded identified more vocations that would require at least a college degree.

Finally, some comments need to be made about the subjects who had some enrollment in Catholic schools. Rokeach studied Catholics and their belief systems, and he concluded that Catholics were generally closed-minded.¹

¹Hilton Rokeach, The Open and Closed Mind (New York, 1960), 109-120.
The findings in this study, however, were quite contrary to the conclusion drawn by Rokeach because the subjects who previously had some education in a Catholic school were more open than closed-minded. Undeniable, his study was very extensive as compared to this investigation. The difference in populations used by Rokeach and this investigator might have had some affect in the difference in the findings as Rokeach surveyed an adult population while this researcher used senior high students.

Summary

In this chapter, the findings in this investigation were given. A statistically significant result was that there was no causal relationship between the degree of dogmatism possessed and the teaching mode preferred by the open and the closed-minded. The reasons given by subjects for their preferences of a teaching mode were also listed and analyzed. The responses to the Student Demographic Form by the open and the closed-minded were presented and interpreted. The six questions stated in Chapter I were also answered. Undoubtedly, future studies need to be performed to validate the findings. Some suggestions for further research are given as a part of Chapter V.
CHAPTER V

SUMMARY AND RECOMMENDATIONS

This chapter includes a summary of this study and some recommendations evidenced by the findings and perceived by this researcher.

Summary

The purposes of this experiment were: (1) to ascertain whether or not there is a significant causal relationship between the degree of dogmatism possessed and the teaching strategy preferred by students, (2) to determine why the subjects desired either an expository or a discussive method, and (3) to compare selected characteristics of this study group who were found to be either open or closed-minded in belief system.

A population composed of 284 eleventh grade American history students at North High School, Columbus, Ohio, were administered the Rokeach Dogmatism Scale Form E, viewed and heard a discussive and a lecture method on two ten-minute audio-visual tapes prepared by this researcher, indicated on the Student Selection Sheet their choice of the two teaching modes and why the one chosen was selected, and responded to the Student Demographic Form which was
created by this investigator so that a comparison could be made of selected characteristics of those subjects who were found to be open or closed in belief system.

The Rokeach Dogmatism Scale Form E identified forty-six closed-minded and forty-six open-minded in the study population. Their responses to the Student Selection Sheet indicated that thirty-five closed-minded and thirty-seven open-minded preferred the discursive approach. The use of $x^2$ (chi square) measure of significance of the variance yielded an $x^2 = .256$ which was not equal to or greater than $3.84$ ($0.05$ level of confidence); therefore, there was no statistically significant reason to reject the null hypothesis which was that there will be no significant causal relationship between the independent variable, degree of dogmatism, and the dependent variable, the teaching mode preferred by subjects.

Responses relating why a teaching mode was chosen showed that those who desired the expository method favored little class participation, while those who chose the discursive method preferred to be quite active members in the learning process.

The comparison of the selected characteristics of the open and the closed-minded in this investigation did show some similarities and differences between the open and the closed-minded. Although sometimes based on small numbers, the significant findings were as follows.
1. The open-minded group had a median age of sixteen which was younger to that of the closed-minded which was seventeen.

2. The open-minded were more and the closed-minded less stable in place of residency.

3. Members of this study group who had previously lived in Appalachia tended to be closed-minded.

4. A nearly equal percentage of both populations had both parents in the home.

5. For the subjects who had one parent absent from the home, mother was more often absent than father in the open-minded group, and the opposite was true for the closed-minded members.

6. The average number of children in the families of the open-minded was three; and for the closed-minded, it was five.

7. In both groups, the mean rank of subjects to siblings was second.

8. A higher number of subjects in both groups had fathers who were skillfully employed.

9. The second highest occupation for fathers of the closed-minded was in the semi-skilled classification; while for the open-minded, it was in a professional field.

10. More mothers of the open-minded than the closed-minded worked, but fewer of them seemed to be the prime support of the family.

11. The closed-minded belonged to more organizations than the open-minded with membership favoring out of school activities.

12. In the use of spare time away from school, a higher percentage of both groups preferred sports.

13. Academically, more open-minded than closed-minded pursued the college-bound (academic) curricula and were excelling better.
14. The average number of credits anticipated at the time of graduation was the same for both groups.

15. History was the most and the least liked course by the open-minded.

16. Mathematics then history were the most liked courses by the closed-minded with history the least liked.

17. Replies in many instances for members of both groups showed that the like and/or the dislike of a course was related to teaching methods.

18. More closed rather than open-minded planned to terminate educational training after high school graduation.

19. More open rather than closed-minded planned to continue on to college.

20. Office work or teaching held the highest percentage of interest as a future vocation for both groups.

21. More open-minded than closed-minded identified careers which require at least a college degree.

22. Subjects who had some of their educational training in a Catholic school were more open than closed-minded.

Based on the findings listed above, composite profiles of the average open and closed-minded in this study population showed the following characteristics.

The open-minded was sixteen years of age and fairly stable in residency. He had both parents in the home with father skillfully employed and ranked second of three children. He participated more in school rather than out of school organizations and preferred sports in the use of spare time away from school. In all likelihood, he pursued the college-bound program with a 2.9 grade average. He ranked history as either the most liked or the most disliked course in the curriculum and planned to continue on to college to become a teacher.
The closed-minded was seventeen years of age and fairly mobile in residency. He had both parents in the home with father skillfully employed and ranked second of five children. He participated more in out of school rather than in school organizations and preferred sports in the use of spare time away from school. In all likelihood, he pursued the general curriculum with a 2.5 grade average. With regard to courses in the curriculum, he slightly favored mathematics and disliked history and planned to pursue office work after graduation from high school.

In conclusion, this experiment found that there was no causal relationship between dogmatism possessed and teaching strategy preferred by students and that the choice of a teaching method was highly related to what degree the subjects desired to participate within the classroom. The Student Demographic Form produced some similarities and differences in the selected characteristics of the open and the closed-minded which, perhaps, might serve as a basis for future experiments.

Recommendations

Derived from the data compiled in this study, this investigator makes the following recommendations.

The first recommendation is that more experiments be conducted below the college level to ascertain whether, and if so why, lecture or discussion is preferred by students. During the research for the review of the literature, this investigator found a lack of studies pertaining to lecture versus discussion other than those with college populations. Educators can not assume that what is found to be most
desirous by collegians is also applicable to students at the pre-college level. Included within this recommendation is the consideration of experiments from the early years of formal training through grade twelve. Because a large majority of the eleventh graders in this study showed a preference for discussion over lecture, it should not be surmised that the findings are applicable to students in other grades or in fact other eleventh grade classes.

The second recommendation is that each classroom teacher systematically surveys his class to determine what method his students prefer and why the students like or dislike the course. Clearly, the group of high school students in this experiment were able to relate the reasons for preference of a teaching method and their likes and dislikes for specific courses. If it is assumed that the prime role of the teacher is to facilitate learning, then the instructor should be cognizant of what his learners desire. To what degree a mode might be used or motivation employed would be associated with the needs evidenced by the students.

The third recommendation is that studies be performed with focus on the open and the closed-minded and the use of not only lecture and discussion but also other approaches and/or a combination of one or more strategies with the inclusion of various techniques. The teacher should not assume that one single method designed with one technique
is the most desirous by students. A study with variations of the several modes employed together with different types of techniques should be programmed to identify to what degree these are liked or disliked by the open and the closed-minded.

The fourth recommendation is that experiments in other disciplines be pursued to compare the preferences of the open and the closed-minded for lecture or discussion. A majority of the subjects in both dogmatic extreme groups in this study population who were enrolled in eleventh grade American history preferred discussion over lecture. However, it should not be concluded that discussion is more desired in other courses.

The fifth recommendation is that more studies be made to compare the similarities and the differences between the open and the closed-minded with the addition of more selected characteristics. Indeed, although small in number in several instances, there were some similarities and differences between the open and the closed-minded in this study group. Some other areas need to be surveyed, such as I.Q., race, sex, ethnic background, and socio-economic status to ascertain how they reflect similarities and differences between the two groups. Hopefully, the information gained will aid the teacher in student deployment, guidance and counseling, and other facets involving student-teacher and student-student relations.
The sixth recommendation is that a study be conducted similar to this investigation that includes a measurement of learning. A large majority of both the open and the closed-minded selected discussion over lecture as the desired teaching mode, but to what degree each method enhanced learning by members who favored one method over the other is not known. A longitudinal study should be performed to identify the results.

The seventh recommendation is that a replication of this experiment be done using closure. This study found that a high percentage of both the open and the closed-minded chose the discussion mode over the lecture approach. Possibly a weakness of this research is that the subjects did not hear and view learning situations that involved the synthesizing of data. As stated in the review of the literature, Rokeach found the open-minded more superior than the closed-minded in this phase of thought. There needs to be an experiment designed with closure to see if there is a difference in preference of lecture or discussion by the open and the closed-minded. The results of this study warrant the recommendation that such a study be undertaken which needs to involve more time than that used in this research.

The eighth recommendation is that the teacher who is interested in the openness and the closedness of belief systems of his students be cognizant of the needs and the
characteristics of the members who are within the two extremes. Well over a majority of the initial subjects in this study fell within this group. Presently, little is known about the individuals who are neither open nor closed-minded. This area offers challenges for research.

The ninth recommendation is that a study be made to compare the degree of dogmatism possessed by students in a Catholic school to those enrolled in a public school. This recommendation stems from the difference in the findings in this study and that of the research by Rokeach. Specifically, Rokeach found that Catholics were generally closed-minded, while this experiment revealed that subjects who had experienced some parochial education were more open than closed-minded. The comparative study recommended should involve populations more similar in age than that used by Rokeach and this researcher.

Clearly, the recommendations focus on the teacher and his behavior which, in turn, determines the role of the learners. The experiment revealed that students have opinions concerning teaching methods. Indeed, if the opinions of this study group are typical of those possessed by students throughout the United States, the death-knell is being struck against the four-cornered textbook teacher.
APPENDIXES
Opinionnaire

To the Student: The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your personal opinion. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

On the accompanying answer sheet, mark in the appropriate space how much you agree or disagree with each statement. Please mark every one. Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

+1: I AGREE A LITTLE       -1: I DISAGREE A LITTLE
+2: I AGREE ON THE WHOLE    -2: I DISAGREE ON THE WHOLE
+3: I AGREE VERY MUCH       -3: I DISAGREE VERY MUCH

1. A person who thinks primarily of his own happiness is beneath contempt.

2. The main thing in life is for a person to want to do something important.

3. I wish people would be more definite about things.

4. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.

5. Most people just don't know what's good for them.

6. A person who has bad manners, habits, and breeding can hardly expect to get along with decent people.

7. In times like these, a person must be pretty selfish, if he considers his own happiness primarily.

8. A man who does not believe in some great cause has not really lived.

9. I work under a great deal of tension at times.

10. I'd like it if I should find someone who would tell me how to solve my personal problems.
11. Of all the different philosophies which have existed in this world there is probably only one which is correct.

12. Whether it's alright to manipulate people or not, it is certainly alright when it's for their own good.

13. It is when a person devotes himself to an ideal or cause that his life becomes meaningful.

14. In this complicated world of ours the only way we can know what is going on is to rely upon leaders or experts who can be trusted.

15. If people would talk less and work more, everybody would be better off.

16. There are a number of persons I have come to hate because of the things they stand for.

17. There is so much to be done and so little time to do it in.

18. It is when a person devotes himself to an ideal or cause that he becomes important.

19. It is better to be a dead hero than a live coward.

20. A group which tolerates too much differences of opinion among its own members cannot exist for long.

21. The businessman and the manufacturer are much more important to society than the artist and the professor.

22. It is only natural that a person should have a much better acquaintance with ideas he believes in than with ideas he opposes.

23. While I don't like to admit this even to myself, I sometimes have the ambition to become a great man, like Einstein, or Beethoven, or Shakespeare.

24. Plain common sense tells you that prejudice can be removed by education, not legislation.

25. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary at times to restrict the freedom of certain political groups.
26. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."

27. A person must be pretty stupid if he still believes in differences between the races.

28. Most people just don't give a "damn" about others.

29. A person who gets enthusiastic about a number of causes is likely to be a pretty "wishy-washy" sort of person.

30. Do unto others as they do unto you.

31. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.

32. If given the chance I would do something that would be of great benefit to the world.

33. The trouble with many people is that they don't take things seriously enough.

34. In times like these it is often necessary to be more on guard against ideas put out by certain people or groups in one's own camp than by those in the opposing camp.

35. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.

36. It bothers me when something unexpected interrupts my daily routine.

37. Once I get wound up in a heated discussion I just can't stop.

38. There are two kinds of people in this world: those who are on the side of truth and those who are against it.

39. What the youth needs is strict discipline, rugged determination, and the will to work and fight for family and country.

40. Man on his own is a helpless and miserable creature.

41. The United States and Russia have just about nothing in common.
42. I set a high standard for myself and I feel others should do the same.

43. In the history of mankind there have probably been just a handful of really great thinkers.

44. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.

45. Appreciation of others is a healthy attitude, since it is the only way to have them appreciate you.

46. The present is all too often full of unhappiness. It is the future that counts.

47. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what is going on.

48. People who seem unsure and uncertain about things make me feel uncomfortable.

49. Fundamentally, the world we live in is a pretty lonely place.

50. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.

51. In general, full economic security is bad: most men wouldn't work if they didn't need the money for eating and living.

52. The worst crime a person can commit is to attack publicly the people who believe in the same thing he does.

53. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.

54. The American re-armament program is clear and positive proof that we are willing to sacrifice to preserve our freedom.

55. Most of the ideas which get published nowadays aren't worth the paper they are printed on.

56. It is only natural for a person to be rather fearful of the future.
57. Most of the arguments or quarrels I get into are over matters of principle.

58. My blood boils whenever a person stubbornly refuses to admit he's wrong.

59. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.

60. America may not be perfect, but the American way has brought us about as close as human beings can get to a perfect society.
Opinionnaire Answer Sheet

Answer by writing +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

+1: I AGREE A LITTLE
+2: I AGREE ON THE WHOLE
+3: I AGREE VERY MUCH
-1: I DISAGREE A LITTLE
-2: I DISAGREE ON THE WHOLE
-3: I DISAGREE VERY MUCH

1. ___________ 21. ___________ 41. ___________
2. ___________ 22. ___________ 42. ___________
3. ___________ 23. ___________ 43. ___________
4. ___________ 24. ___________ 44. ___________
5. ___________ 25. ___________ 45. ___________
6. ___________ 26. ___________ 46. ___________
7. ___________ 27. ___________ 47. ___________
8. ___________ 28. ___________ 48. ___________
9. ___________ 29. ___________ 49. ___________
10. ___________ 30. ___________ 50. ___________
11. ___________ 31. ___________ 51. ___________
12. ___________ 32. ___________ 52. ___________
13. ___________ 33. ___________ 53. ___________
14. ___________ 34. ___________ 54. ___________
15. ___________ 35. ___________ 55. ___________
16. ___________ 36. ___________ 56. ___________
17. ___________ 37. ___________ 47. ___________
18. ___________ 38. ___________ 58. ___________
19. ___________ 39. ___________ 59. ___________
20. ___________ 40. ___________ 60. ___________
APPENDIX C
Narrations of the Two Audio-Visual Tapes

Tape Number One (Discussion)

(Teacher) We've all read a great deal about the pros and cons concerning immigration into the United States. As you remember from history, this has been a big issue. Today, let's talk about the issue a little further. Should there be laws governing immigration into the United States today? How do you feel about that?

(Sharon) Well, in my own opinion, I feel that there shouldn't be any immigrant allowed in the United States until we get our own country into a situation in which we would be able to handle people from other countries, because we have people now in our country who are (pause), ah, (pause), poor, underprivileged, jobless, diseased, and, I think we have to clear these problems out before we will be able to take people from other countries.

(Gary) Well, ah, I disagree. I feel that, ah, our country is where it is at now because of immigration. But you do have to look at the fact that today the situation is a little different. And I say that we must restrict
immigration, but I don't believe that we shouldn't have, ah, shouldn't have any immigrants at all.

(Sharon) Now when you say restricted do you mean like just selecting the ones that are going to be the best? Now do you think that's morally right? I mean like, saying O.K. we're going to take you because you can (pause), ah, like, ah, (pause), fit, ah, oh, like, scientists let's say. Someone who is going to be able to discover something for our country and do something that will benefit us. Now, do you think that's right? Or, (pause), or should we take like the people who we would be able to help? Now what do you mean by selective?

(Gary) Well, ah, let's say for instance a scientist came over. Or, ah, (pause), we should accept an immigrant like a scientist because while he is helping our country he's still, he's helping the other country too because they don't have the facilities to accommodate his experimentation, whereas someone like a common laborer wouldn't be able to, ah, well, really help our country that much. Do you see what I mean? You don't understand?
(Sharon) O.K. Then like he could come over to our country and perhaps use the materials that he doesn't have available in his country. And then, like after he maybe gets a bit more education and materials that he needs from our country, he can go back and show these things in his own country and maybe educate the people in his country?

(Jack) Yeh, well I-I don't think we should be that selfish. I-I think that, ah.

(Sharon) But, Jack, we have people in our country that, you know, they're poor, they're diseased, they're underprivileged, they don't have any jobs! Now do you think we're being selfish if we, ah, (pause), say no to these immigrants who are just going to add on to these people?

(Jack) No, I-I know we have people in our country, you know, sur as you speak, but, ah, I think when you say if we take the physicist or we take the scientist for our own benefit, I think that their country could benefit, you know, from his knowledge too. And I think that if we did do this, or something like this, it could cause a political disturbance. You know, like-like the
country would—would say, like, well, you know, if America is going to do this then you know we're—we're archaic America or something like this. You know, they'll say America is no good because they're out to try to take our—our, ah, best people and not—not our poor people and help the poor people.

(Sharon) O.K.!! Then isn't it a good idea just (pause), just to have no immigrants whatsoever instead of selecting the ones who are going to help our country and then perhaps get the countries mad at us?

(Gary) Well, I thought your point, Sharon, was that the person that comes over like a physicist and, ah, receives his learning here and through that learning he could help the country where he came from.

(Sharon) That's right! But Jack said the country might get upset because, you know, selecting the best people. Ah, not taking the underprivileged ones. Now I don't—I don't think there should be any immigrants coming over whatsoever.

(Teacher) Are you sure you know exactly what you're talking about here when you say immigrants? Are we
distinguishing between visitors and immigrants, here, or?

(Sharon) I say someone who is from an underprivileged country, someone who can not get a good job and who is poor and perhaps sickly and wants to come over to America because he has heard that it's land of plenty, someone who wants to come over and stay. Now these kinds of people we don't need. I think that, well, I guess I should say we don't need until we get the people who are like this in our country, helped.

(Teacher) What do you think about that, Bill?

(Bill) Well, the whole thing, it seems to go the problem of, people don't think it's right, it's immoral, but that's because of the way America is and the stereotype that it has from foreign countries--that it is the land of good and plenty, you might say. Ah, (pause), the only way, I think, we could solve the problem is, by ah, maybe, ah, educating the people before they come over. But, of course, this could, ah, start political unrest, you know, going over to their country and trying to set up educational programs to educate people to the American way to prepare them to come to America.
(Teacher) That sounds like a pretty good point. What do you think about that, Jim?

(Jim) Ah, well I think that, ah, we're really making too big a thing about bringing immigrants over in the first place, where we could, ah, ah, send foreign aid and thus kill, ah, two birds with one stone. Ah, we wouldn't be sacrificing our morals then because we'd be giving foreign aid to those countries, and, ah, we wouldn't be risking, ah, any political or international troubles because, ah, we wouldn't be interfering in the governments of other countries.

(Teacher) How would we make this preselection?

(Pause)

(Jack) Ah, well, the selection would be, ah, I suppose (pause), I don't know maybe you could set up a board of some kind of a—a, I don't know I suppose educators or—or, ah, people, you know, people that—that the people, ah, (pause), ah, that the common people, you know, that they have their faith in that they can rely on to—to, ah, open the door, so to speak, to-to immigrants or to shut it. I mean, you know, whichever way it would be beneficial to, ah, to society, I suppose, ah, you know, that the board could do.
Well, ah, since 1965 when, ah, they stopped the quota system, and, ah, started the preference system, well not actually, they used preference in it, but there is, ah, like I said, ah, they have, ah, so many people that are allowed to come to the United States a year, and there's no set number for each country, and that way it makes it a little more fair, you know, and the preference goes on, I don't know exactly the things they list, but, you know, how they will work out in the United States, and so on.

Ah, I'd like to go back to a point that Jim made about the foreign aid, you know, about money, and so forth. I-I think that-that, ah, if-if we'd ask, you know, for more money for foreign aid, I think that the people would reject this because you know there's so much money going out to Viet Nam and to such other organizations that, if-if we could, like, take away some money from the military, I think it's, ah, 65 per cent of the American dollar, or, I think that's what the percentage is that goes to the military, and I think that if we could take, cut that in half somehow and-and maybe add that to the money that we spend for, ah, oh to clean out
the slums and to-to make the slums better. I think that if we-if we could eliminate the slums, by doing this, then, the immigrants would have a clearer way to come over.

(Gary) To go back to a point Bill made about educating the people before they came over to the United States, ah, don't you believe that there'd still be prejudice among the people in the United States even though the people were educated that did come over and were able to handle these jobs? The stereotype of the American people from immigrants in the past would still be the same, and don't you think they would still be prejudice to some degree?

(Bill) Well, of course they're going to be prejudice but how can you solve that problem. Really you can't. You can't change people. The only way we could do that is start, you know, (chuckle), like the beginning or something. But, (pause), I think that if these people were educated and were able to get a better job or to at least support themselves that there might not be as much prejudice. If they had job opportunities and if they had intelligence enough to support themselves, there might not be as much prejudice
toward them, and they would not have to live in the slums.

Tape Number Two (Lecture)

(Teacher) The topic that you had to study for this class period was immigration. In reading your textbook, you noticed that throughout our nation's history this issue, immigration, has been a point of contention. Laws have been passed and changed, but there have always been people questioning the practices currently in use relevant to immigration.

Really, if one tries to list the issues involved, it is rather difficult to get a clear-cut yes or no view of the issue. However, it is still possible to narrow the concerns down to pro and con sides. Today, we will consider them in five general categories. Here is the list of these five areas:

Number one, we should take care of our own problems at home first. (Pause) One, we should take care of our own problems at home first. (Pause) Number two, there should be complete restriction. (Pause) Number two, there should be complete restriction. (Pause)
Number three, there should be partial restriction by selectivity. (Pause) Three, there should be partial restriction by selectivity. (Pause) Number four, America should not be selfish, which in essence means that the United States has a moral commitment. (Pause) Four, America should not be selfish, which in essence means that the United States has a moral commitment. (Pause) Five, redirecting foreign aid might improve the issue of immigration. (Pause) Five, redirecting foreign aid might improve the issue of immigration.

Let's begin by looking at point one: We should take care of our own problems at home first. Now, people following this point of view basically say that we have our own poor, underprivileged, jobless, and diseased. American citizens in these categories need our attention first. These conditions and concerns at home involving our own people should be erased before allowing others to come to our shores. Because America is known throughout the world as a land of plenty, which is a prime reason for people wanting to enter our country, is not a desireable reason for lowering
the gates of immigration. Thus, under point one, the basic issue is, that before we have further foreign immigration, our problems at home should be overcome.

Now let's look at point two.

(Teacher) John, what is point two?

(John) There should be complete restriction.

(Teacher) That is correct. There should be complete restriction.

(Teacher) Betty, what does restriction mean?

(Betty) Uh, not allowed, (pause), ah, prohibiting something.

(Teacher) Yes, and in this case, not to allow immigrants that is to prohibit them completely, from coming here.

Some of the fundamental ideas that entail point two have already been elaborated on in the first point. In many cases, immigrants heighten the problems at home. Remember? -- the poor, the underprivileged, the jobless, the diseased. A lot of these problems are located in the slums. Thus, immigrants who enter who have no money, no
job opportunities, and so forth, tend to increase our problems and help to perpetuate instead of eradicate the slums.

However, in point three: There should be partial restriction by selectivity—What do we mean by selectivity, Bob?

(Bob) The book says to take what you want and not to take what you don't want.

(Teacher) That's right, Bob. Some believe designated foreigners emigrating from other nations really contribute to the benefit of both nations. Examples are people who are greatly needed in our economy, such as scientists and physicists. People like these are normally not presently beneficial to their homelands because their own nations do not have the necessary tools and equipment needed for them to practice their skills and to perform more capably. It is also felt that possibly some of these people we carefully select to come to America might return home and help their fellow citizens in many ways. The primary feeling, then, is to take those whom we need and reject those whom we do not need or cannot benefit us. We could establish some form of a quota system to practice selectivity.
Are there any questions so far?
(Pause)
Good. Then we'll continue.

We find in point four that some people feel that we should not be selfish, that is, the United States has a moral commitment. This really opposes point three. It follows that rich and poor, capable and incapable should be treated the same when considering who should be allowed to immigrate. It is said that it is not morally right to take the best of a nation and not consider or help the poorest citizens. It is even possible to upset another country by taking their very best members of their society. Because America is stereotyped as the land of plenty, we should act accordingly.

The fifth point, redirecting foreign aid might improve the problem of immigration, follows the idea of educating people in their native lands prior to immigrating to this country. Hopefully, this would improve job opportunities once they enter our society and should reduce prejudice and discrimination that sometime occur through stereotyping immigrants. It further adds that if they have enough intelligence toward making a
livelihood here and initially fit into our society, fewer will need to live in slummy neighborhoods.

The issue at hand in this fifth point is that our taxpayers might reject the idea of using more funds abroad in order to prepare people to emigrate because they are tired of money being spent in other parts of the world, such as for the Viet Nam War. However, it is felt that if some of the money designated for military use could be redirected toward immigration, such as improving living conditions for the immigrant once he arrives in this country, foreign aid allocations would be more wisely spent.
Judge's Rating of Audio-Visual Tapes

Initially you will view two audio-visual tapes. After viewing each tape, please record on the respective rating scales on the accompanying sheet the degree of lecture or discussion modes that each film portrays. Since you are a certified and an experienced teacher, you are aware that the terms lecture and discussion connote various strategies. Thus, established definitions will be briefly given. Lecture method means a teaching strategy that is primarily expository with considerable absence of teacher-students and student-student interaction. Pupils passively participate. The discussion method herein is considered as a teaching approach with interpersonal participation between teacher and students or between students. Members of the class actively participate. Please be cognizant that the scales range from 0 (lecture) to 10 (discussion). On the continuum, circle your rating number for each tape.

On the third rating scale, you are asked to identify to what degree the content (subject matter) involved in the tapes is the same or different. The scale ranges from 0 (same) to 10 (different).

Finally, indicate in the designated space the number of years you have taught.
Judge's Rating of Audio-Visual Tapes Form

Judge No. ______________

Audio-Visual Tape # 1.
(Lecture) (Discussion)

0   1   2   3   4   5   6   7   8   9   10

Audio-Visual Tape # 2.
(Lecture) (Discussion)

0   1   2   3   4   5   6   7   8   9   10

Content (Subject Matter).
(Same) (Different)

0   1   2   3   4   5   6   7   8   9   10

Number of years of teaching experience ________________
Student Selection Sheet

To the Student: You have just viewed two classroom learning situations. As you noticed, the students and the teacher participated quite differently in each. Circle which of the two classes you would prefer to be in.

1st 2nd

Considering only the one you selected as your preference, in a couple of sentences indicate why you chose the one you did.
APPENDIX F
Student Demographic Form

To the Student: Please respond to the items located below. Do not write your name on the papers. Use your code number. If there are any items you do not understand, raise your hand and a teacher will assist you.

1. Write in the name of the city or town and the state where you were born.

   [city or town] [state]

2. Indicate the number of years you have lived in Columbus, Ohio.

   [years]

3. List in chronological order the places where you have lived other than Columbus, Ohio, and give the length of time you resided in each (if you have lived only in Columbus, Ohio, check here _______).

   [city or town] [state] [length of time]
   [city or town] [state] [length of time]
   [city or town] [state] [length of time]
   [city or town] [state] [length of time]

   (Continue on the back of this sheet, if more space is needed. Also, be sure you indicate the item number.)
4. List all the schools you have attended in Columbus, Ohio, and the grade or grades in which you were enrolled.

   school                      grade or grades
   school                      grade or grades
   school                      grade or grades
   school                      grade or grades
   school                      grade or grades

(Continue on the back of this sheet if more space is needed. Also, be sure you indicate the item number.)

5. Write in the number of years you have lived in the building where you now live. ________ years

6. Write in the number of brothers you have. ______
   List their ages. ______ ______ ______ ______ ______
   (Circle those not now living at home.)

7. Write in the number of sisters you have. ______
   List their ages. ______ ______ ______ ______ ______
   (Circle those not now living at home.)

8. Give your present age. ______

9. Indicate whether you are male or female. ______

10. (Check one) There is _____, There is not ____ a father in your home.

11. If there is a father in your home, give his occupation.

12. (Check one) There is _____, There is not ____ a mother in your home.
13. If your response to item twelve is yes, indicate if she works outside the home.

_____yes; _____no

Write in what your mother does if she works outside the home.


14. If there are other people living in your home besides your immediate family, list their relationship to you (do not include occasional visitors). If no one, check here.

example: my grandmother

relationship

example: male roomer

relationship

relationship

relationship

relationship

relationship

15. Write in the number of school organizations you belong to at present.


16. Write in the number of out-of-school organizations you belong to at present.


17. In order of preference (A, B, C), list the three things you like to do most in your free-time away from school.

A. ____________________________________________

B. ____________________________________________

C. ____________________________________________

18. In the space, place the name of your favorite subject in school.

Briefly write why you like this school subject the most.


19. In the space, place the name of the school subject you dislike the most.

_____________________________________________________________________

Briefly write why you dislike this school subject the most.

_____________________________________________________________________

20. Write in what career you plan to pursue after completing your education (be specific).

_____________________________________________________________________

21. Indicate the highest level of education you plan to complete.

_____________________________________________________________________

22. Write in the number of credits you will have when you graduate from high school.

_____________________________________________________________________

23. Check the curriculum program you are taking in high school.

____general  ____commercial  ____vocational  

____academic

24. Indicate if you have ever taken a high school course in Summer School.  __yes;  ____no (If your response is yes, complete the following.)

List the course, grade level (9, 10, 11), and check if it was for make-up or advanced credit.

_________________________  ____make-up  ____advance credit  

_________________________  ____make-up  ____advance credit  

_________________________  ____make-up  ____advance credit  

_________________________  ____make-up  ____advance credit  

(Continue on the back of this sheet if more space is needed. Also, be sure you indicate the item number.)
25. Place your accumulative point-hour in the space.
Occupation Classifications

Skilled

- owner of auto seat cover co.
- construction work business
- heating and cooling man
- grocery store manager
- manager of restaurant
- construction worker
- tool and die maker
- foreman in factory
- drapery installer
- computer operator
- forklift operator
- warehouse foreman
- truck dispatcher
- factory worker
- technician-OSU
- cabinet maker

Professional

- horticulturist
- programmer
- physician
- minister
- engineer
- teacher
- president of heavy equipment company
- funeral director and embalmer
- newspaper reporter and artist
- business administrator
- correctional officer
- dental technician

Semi-Skilled

- truck helper
- stock clerk
- cab driver
- laborer
- service station attendant
- city sanitation
- truck driver
- milkman
## Sports and Music Classifications

### Sports Classification

<table>
<thead>
<tr>
<th>Sports Classification</th>
<th>Softball</th>
<th>Horseback Riding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto Racing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Billiards</td>
<td>Walking</td>
<td>Roller Skating</td>
</tr>
<tr>
<td>Swimming</td>
<td>Fishing</td>
<td>Water Skiing</td>
</tr>
<tr>
<td>Surfing</td>
<td>Bowling</td>
<td>Sunbathing</td>
</tr>
<tr>
<td>Boxing</td>
<td>Golf</td>
<td>Basketball</td>
</tr>
</tbody>
</table>

### Music Classification

<table>
<thead>
<tr>
<th>Music Classification</th>
<th>Play Piano</th>
<th>Play a Guitar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Go to Concerts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Play in a Band</td>
<td>Sing</td>
<td></td>
</tr>
<tr>
<td>Play Drums</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX I
Most and Least Liked Course

Responses by subjects in the two extreme groups, closed-minded \((N=46)\), open-minded \((N=46)\).

<table>
<thead>
<tr>
<th>History</th>
<th>Most Liked</th>
<th>Closed-minded ((N=4))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Most interesting.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Covers a pretty wide area and covers different people and their ways.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Teaches about people in past.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It tells of our past.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>History</th>
<th>Most Liked</th>
<th>Open-minded ((N=7))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I like it when we talk about the present.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It just appeals to me.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It's the only subject that gives room for discussion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I plan to teach history in high school.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I like to learn about my country.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Because of the teacher. He makes it fun.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It's easy and interesting.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>History</th>
<th>Least Liked</th>
<th>Closed-minded ((N=15))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I am not very much interested in the past.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>There is no sense in it, no future.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not interesting--I am not interested in wars.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It is a waste of time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I do not enjoy learning about it.</td>
<td></td>
</tr>
</tbody>
</table>
Because I don't like to learn about the things of the past.

Had history all during school.

I don't like what went on in the past.

I can't understand why we should learn so much about the past.

I don't find it interesting.

I just can't get all that stuff in my head.

Boring, and too many dates to remember.

I can't remember a lot of the stuff mentioned each day.

I don't really care about things of the past.

I can't remember all the people, acts, wars. It's too hard.

<table>
<thead>
<tr>
<th>History</th>
<th>Least Liked</th>
<th>Open-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td>History Least Liked</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Because it is memorization of facts of the past.

It is presented poorly, and I don't care to read much.

It goes in completely too much detail which I don't think could help in the future.

Monotonous and the teacher makes us remember trivial facts.

The textbook is dull—biographies are more interesting.

Dry, uninteresting.

It's boring.

It's uninteresting to me.

Sometimes can get boring, but it is important to us.

I'm tired of it after eleven years of school. I've taken some form of history in ten of them. It is getting repeated too often.

I don't like to memorize facts.
Mathematics  Most Liked  Closed-minded  
(N=5)

Because it is interesting, and it is used a lot every day of your life.

Because it is easy.

I like to add and subtract.

Because I want to go into computers, and it is interesting.

It deals with figures.

Mathematics  Most Liked  Open-minded  
(N=5)

I do more and understand more.

I just like it.

Because it is interesting.

I can do it, yet find it more than a memorized subject like history.

It's easy.

Mathematics  Least Liked  Closed-minded  
(N=4)

I'm not good with numbers.

I've never been too good in it at all.

Because it's extremely difficult (for me), and I feel I know enough math for the occupation I intend to pursue.

Boring, and I can't seem to do it.

Mathematics  Least Liked  Open-minded  
(N=0)

English  Most Liked  Closed-minded  
(N=3)

I can understand it the best, and I enjoy learning new concepts.
I like to read short stories.
The stories and poetry involved.

**English**

**Most Liked**

It's interesting.
I get straight A's and find it easy.
We read interesting stories and discuss a lot of subjects.
Because I can express myself.
I like to write and read stories.

**English**

**Least Liked**

Doesn't make any sense.
Because it just can't stick to my brain, and I can't remember it well enough.
Because it is very difficult to grasp.
I don't like the teacher I have this year.
Boring, the teacher is no good.
It's boring.
I've had it ten years now, and it's getting boring.
I can not understand grammar.
The teacher does not explain things fully enough.
I can't catch onto it.

**English**

**Least Liked**

I really don't know.
The teachers aren't any good.
I can't see learning verb, subject, etc.
I hate it. It's stupid to learn it.
I'm not any good at it.
I have no interest in class or subject.
A lot of the things you learn about are unnecessary.
Bad teacher.
Because the teacher is ignorant and dull. English is O.K., but the class is boring when the students know more than the instructor.
It's boring.

Drafting Most Liked Closed-minded
(N=3)

It is not so restrictive. You do something interesting.
It is easy for me.
Because I can use my hands.

Drafting Most Liked Open-minded
(N=4)

Because it's interesting.
A good teacher and a relaxed atmosphere.
I like to draw and design things.
It takes creativity. I like to be creative.

(Drafting not least liked by any members of the extremes.)

Medical Assistant Most Liked Closed-minded
(N=3)

I'm interested in helping sick people.
It gives me a chance to help others when I graduate.
Worthwhile and interesting.
Medical Assistant Most Liked

Open-minded (N=2)

Because it is preparing me for my chosen career.

I have chosen the medical profession as my field.

(Medical Assistant not least liked by any members of the extremes.)

Music Most Liked

Closed-minded (N=1)

Because I've taken piano twelve years.

Music Most Liked

Open-minded (N=3)

It comes naturally, and I have a tremendous conductor.

I love to sing and to perform.

I enjoy singing and listening to music.

(Music not least liked by any members of the extremes.)

Physical Education Most Liked

Closed-minded (N=3)

It's a physical challenge.

I like sports and physical fitness.

It lets you be yourself.

Physical Education Most Liked

Open-minded (N=0)

Physical Education Least Liked

Closed-minded (N=1)

Because it makes me sweat.

Physical Education Least Liked

Open-minded (N=2)

Teacher acts like we don't know rules of the game and gives us drills to do.

Sweat too much.
Office Practice  Most Liked  Closed-minded  
(N=3)

Because I really like to type, and my intention is to become a secretary.

I like to learn about office work.

The work is interesting. I have close contact with people.

Office Practice  Least Liked  Closed-minded  
(N=1)

I dislike the teacher and the course as a whole—shorthand, typing, bookkeeping. I've decided I don't want a business course. I want to go into education.

Office Practice  Least Liked  Open-minded  
(N=0)

Bookkeeping  Most Liked  Closed-minded  
(N=3)

It's a challenge. You have to know what you're doing because one mistake can mess you up forever, it seems.

I like to work with numbers.

I am good in math.

Bookkeeping  Most Liked  Open-minded  
(N=0)

Bookkeeping  Least Liked  Closed-minded  
(N=1)

It is boring.

Bookkeeping  Least Liked  Open-minded  
(N=0)
Because I believe it to be the easiest.
I understand math and have kept up with the modification.

Because I like math.
Logical.

The teacher and I just can't seem to get along.

No real reason.
Exact opposite of math.
There is no room for imagination in mathematics.
Teacher--that is all, because I like math.

I like it because it's fun to type, and I want to be an IBM operator.
Relaxing.

I plan to get a job as a typist.

No real reason.
Exact opposite of math.
There is no room for imagination in mathematics.
Teacher--that is all, because I like math.

I like it because it's fun to type, and I want to be an IBM operator.
Relaxing.
Typing

Least Liked
Open-minded
(N=1)

I have no interest in typing except I know I need it.

Spanish

Most Liked
Closed-minded
(N=2)

Because I am interested in foreign languages.

Most Liked
Open-minded
(N=1)

Enjoy learning this particular foreign language.

Spanish

Least Liked
Open-minded
(N=3)

It fascinates me to be able to speak to people from other countries (I speak French, too).

Spanish

Least Liked
Closed-minded
(N=0)

I can't speak it well.

Health

Most Liked
Closed-minded
(N=2)

I am interested in health because it gives reasons for sickness, mental illness of people, etc.

The teacher makes it interesting.

Health

Most Liked
Open-minded
(N=0)

Health

Least Liked
Closed-minded
(N=1)

Very dull, the subject is a review.

Health

Least Liked
Open-minded
(N=0)
French Most Liked

Closed-minded
\(N=0\)

French Most Liked

Open-minded
\(N=2\)

Because all the others bore me to death. There is also some philosophy tossed in with French.

Teacher, biggest help in understanding other people and interesting.

French Least Liked

Closed-minded
\(N=2\)

Because I don't know what the words mean.

Because it takes a lot of time to do homework.

French Least Liked

Open-minded
\(N=1\)

Because it is all rules and regulations.

Art Most Liked

Closed-minded
\(N=1\)

Because I have drawn ever since I can remember.

Art Most Liked

Open-minded
\(N=1\)

It's the most creative subject, but it's still not as creative as school subjects should be.

(Art not least liked by any members of the extremes.)

Home Economics Most Liked

Closed-minded
\(N=1\)

Covers all phases of home life.

Home Economics Most Liked

Open-minded
\(N=1\)

I love to cook and plan to go into home ec. in college.

(Home Economics not least liked by any members of the extremes.)
<table>
<thead>
<tr>
<th>Subject</th>
<th>Most Liked</th>
<th>Closed-minded or Open-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Math</strong></td>
<td>Most Liked</td>
<td>Closed-minded ($N=1$)</td>
</tr>
<tr>
<td></td>
<td>Because I like working with numbers.</td>
<td></td>
</tr>
<tr>
<td><strong>Business Math</strong></td>
<td>Most Liked</td>
<td>Open-minded ($N=0$)</td>
</tr>
<tr>
<td>(Business Math not least liked by any members of the extremes.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Home Management</strong></td>
<td>Most Liked</td>
<td>Closed-minded ($N=1$)</td>
</tr>
<tr>
<td></td>
<td>It teaches you everything about managing a home.</td>
<td></td>
</tr>
<tr>
<td><strong>Home Management</strong></td>
<td>Most Liked</td>
<td>Open-minded ($N=0$)</td>
</tr>
<tr>
<td>(Home Management not least liked by any members of the extremes.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Distributive Education</strong></td>
<td>Most Liked</td>
<td>Closed-minded ($N=1$)</td>
</tr>
<tr>
<td></td>
<td>Prepare for part-time job—in contact with people.</td>
<td></td>
</tr>
<tr>
<td><strong>Distributive Education</strong></td>
<td>Most Liked</td>
<td>Open-minded ($N=0$)</td>
</tr>
<tr>
<td>(Distributive Education not least liked by any members of the extremes.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Orchestra</strong></td>
<td>Most Liked</td>
<td>Closed-minded ($N=1$)</td>
</tr>
<tr>
<td></td>
<td>Because I enjoy it.</td>
<td></td>
</tr>
<tr>
<td><strong>Orchestra</strong></td>
<td>Most Liked</td>
<td>Open-minded ($N=0$)</td>
</tr>
<tr>
<td>(Orchestra not least liked by any members of the extremes.)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Radio-Speech  Most Liked  Closed-minded  (N=1)

It is easy, and I haven't had it year after year.

Radio-Speech  Most Liked  Open-minded  (N=0)

(Radio-Speech not least liked by any members of the extremes.)

Sales  Most Liked  Closed-minded  (N=1)

It prepares you for an occupation in the future.

Sales  Most Liked  Open-minded  (N=0)

Sales  Least Liked  Closed-minded  (N=1)

Because of the teacher.

Sales  Least Liked  Open-minded  (N=0)

Foods  Most Liked  Closed-minded  (N=1)

Because it's lots of fun.

Foods  Most Liked  Open-minded  (N=0)

(Foods not least liked by any members of the extremes.)

Science  Most Liked  Closed-minded  (N=0)

Science  Most Liked  Open-minded  (N=1)

It is interesting to see how things operate.

Science  Least Liked  Closed-minded  (N=0)
Science  Least Liked  Open-minded  
\[N=1\] 

Not interesting, kind of hard for me.

Sewing  Most Liked  Closed-minded  
\[N=0\] 

Sewing  Most Liked  Open-minded  
\[N=1\] 

I make better grades in sewing, and it is fun.
(Sewing not least liked by any members of the extremes.)

Trigonometry  Most Liked  Closed-minded  
\[N=0\] 

Trigonometry  Most Liked  Open-minded  
\[N=1\] 

It is comparatively interesting and shows opportunity for even greater interest in future.
(Trigonometry not least liked by any members of the extremes.)

Bowling  Most Liked  Closed-minded  
\[N=0\] 

Bowling  Most Liked  Open-minded  
\[N=1\] 

It's active.
(Bowling not least liked by any members of the extremes.)

Wood  Most Liked  Closed-minded  
\[N=0\] 

Wood  Most Liked  Open-minded  
\[N=1\] 

I like working with wood.
(Wood not least liked by any members of the extremes.)
Latin  Most Liked  Closed-minded  \(N=0\)

Latin  Most Liked  Open-minded  \(N=1\)

Because the teacher is intelligent, interesting, and fun.

(Latin not least liked by any members of the extremes.)

Geometry  Most Liked  Closed-minded  \(N=0\)

Geometry  Most Liked  Open-minded  \(N=1\)

Because it is merely logical thinking.

Geometry  Least Liked  Closed-minded  \(N=1\)

Geometry  Least Liked  Open-minded  \(N=1\)

I don't understand it.

Child Care  Most Liked  Closed-minded  \(N=0\)

Child Care  Most Liked  Open-minded  \(N=1\)

I am very interested in working with small children.
(Child Care not least liked by any members of the extremes.)

(Chemistry not most liked by any members of the extremes.)

Chemistry  Least Liked  Closed-minded  \(N=1\)

The teacher is very onesided to his subject.

Chemistry  Least Liked  Open-minded  \(N=5\)

It's boring.
Teacher uninteresting.
Instruction is hard to understand. Work is complicated.
Unbelievably boring (except for laboratory work).
Boring. He won't answer questions directly. I don't care about it. It doesn't relate to people.
It's hard and teacher is not interesting.

(Biology not most liked by any members of the extremes.)

<table>
<thead>
<tr>
<th>Biology</th>
<th>Least Liked</th>
<th>Closed-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(N=2)</td>
</tr>
</tbody>
</table>

It has nothing in common with the things I like so I can not get interested in it.

It's boring.

(Biology Least Liked Open-minded)

It's a drag.

(German not most liked by any members of the extremes.)

<table>
<thead>
<tr>
<th>German</th>
<th>Least Liked</th>
<th>Closed-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(N=1)</td>
</tr>
</tbody>
</table>

It's sort of hard to understand.

Because of the teacher, and I don't like it.

(Literature not most liked by any members of the extremes.)

<table>
<thead>
<tr>
<th>Literature</th>
<th>Least Liked</th>
<th>Closed-minded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(N=2)</td>
</tr>
</tbody>
</table>

American

I think it's a waste of time.
I don't like poetry and essays.

<table>
<thead>
<tr>
<th>Literature</th>
<th>Least Liked</th>
<th>Open-minded $(N=0)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journalism</td>
<td>Least Liked</td>
<td>Closed-minded $(N=0)$</td>
</tr>
<tr>
<td>Journalism</td>
<td>Least Liked</td>
<td>Open-minded $(N=1)$</td>
</tr>
</tbody>
</table>

The teacher.
Instructions for Instruments

Administering the Rokeach Form E Scale and the Student Demographic Form

To be read to the class by the person administering the instruments:

You have been given two separate groups of questions. On the first page of each group of papers, there is a space for a Code Number. By using a Code Number, your identity will not be known. You are asked to choose a letter in the alphabet and any three digits and write them in the Code Number space. For example S381. Use the same Code Number on both front sheets. Any questions? During the second day of this study, you will be asked to use your same number again so it is suggested that you write it somewhere to prevent forgetting. Now, write in your chosen Code Number. (Give students enough time to write in their own selected Code Numbers.)

The Student Demographic Form asks you to respond in the spaces after each item. The Opinionnaire requires a bit more explanation so I will read the instructions aloud while you read silently from your papers. (Read instructions) Are there any questions?

IMPORTANT: Please complete the Opinionnaire first as it must be finished during this period. If you have written your Code Number on the Student Demographic Form, please turn those papers over and begin the Opinionnaire. When
you have completed the Opinionnaire, raise your hand and I will collect them. Then begin the Student Demographic Form. If you do not complete the Student Demographic Form this period, you will be given another opportunity next week. At the end of the period, the Student Demographic Form will be collected. Any questions? Begin the Opinionnaire. Don't forget your Code Number on both front sheets.
Instructions to Students During the Second Day of the Study

I wish to thank you for the splendid cooperation that both you and your teachers gave me during the day of the study last week. Today will conclude the study.

You will see and hear two audio-visual tapes on the television set here in the front of the room. After the two audio-visual tapes have been presented, please respond to the Student Selection Sheet already given to you. Be sure that you use the same Code Number that you selected last week.

After you respond to your Student Selection Sheet, Mr. .... or I will collect it and will give you your Student Demographic Form if you did not finish it last week. You will receive your Student Demographic Form by giving us your Code Number. Any questions?

Remember, you will see and hear two audio-visual tapes. Then, you are requested to indicate on the Student Selection Sheet which of the two classrooms you would prefer to be in, that is, Number 1 or Number 2. Then, indicate in a few sentences why you chose the one you did. Do not mark the Student Selection Sheet until after you have completely heard and viewed both tapes.
Mr. Clayton Ferrell  
Administrative Offices  
Columbus Public Schools  
270 East State Street  
Columbus, Ohio  

Dear Mr. Ferrell,

I am writing my Ph.D. dissertation in the area of the social studies at The Ohio State University.

The purpose of this letter is to obtain permission to do my basic research in a senior high school in the Columbus, Ohio, Public School System, preferably North High.

A copy of my proposal is enclosed for your careful examination. If you desire further interpretation, I am available at your convenience.

As the proposal indicates, my immediate concern is to relate student frame of reference to his or her preference of a teaching mode. Procedurely, the study would include students enrolled in American history in the school. The total time to collect the data would be about two periods in each class.

Within the guidelines of the proposal, no student will be a part of the study if he or she does not volunteer to participate. Also, students will not be asked either to identify themselves or offer any information that would infringe on their personal rights.

My plan is to complete the dissertation by early next academic year, thus I would like to do the study before the end of this current school year. If sometime soon during your busy schedule you can find time to respond to this request, it will be highly appreciated.
Mr. Clayton Ferrell

Finally, I wish to express that throughout the preparation of the study, I have both professionally and personally attempted to design the investigation with caution to prevent any possible unwelcome criticisms of individuals in particular or the Columbus, Ohio, Public School System in general.

Sincerely yours,

Joseph Stranges
1346 Shanley Drive
Columbus, Ohio
To: Mr. Terry Black, Mr. Arthur Darnbrough, Mr. Robert Richards

From: Joseph Stranges

Subject: Empirical Study at North High School

Mr. Noel Curran, Instructional Coordinator at your school, has informed me that you have agreed to cooperate in the study I plan to conduct. Previously, the Administrative Staff at the Board of Education and your Principal, Mr. Edwin Tilton, gave their approval; however, without your consent, the study could not be undertaken.

The time involved for the study will be about two, but not consecutive, periods. On Thursday, May 8, I will be in your American history classes to administer the Rokeach Form E Scale to your students. Subsequently, they will be given a Student Demographic Form. Some students will not be able to complete the second instrument before the period ends; however, they will be informed that they will have time to finish it during the latter part of the second day of the study.

The second day of the study will be Thursday, May 15, during which time your classes will meet in the Projection Room, where they will observe and react to two ten minute audio-visual tapes. After your students enter the Projection Room, I will conduct the study, but please feel free to remain if you so desire.

Mr. Curran is our contact in the building and will transmit information relevant to the study.

Again, I wish to thank you in advance for your cooperation.

Sincerely yours,

Joseph Stranges
May 5, 1969

cc: Mr. Noel Curran
To Professors and Supervisors of secondary social studies students in The College of Education, The Ohio State University

An important factor needed in the study being conducted for my Ph.D. dissertation is the identity of three senior high school social studies teachers in the Columbus, Ohio, Public School System who use discussion as the primary method in their classes and also are capable lecturers.

Discussion is herein identified as a teaching approach with interpersonal participation between teacher and students or between students. Members of the class actively participate.

Indeed, defining discussion method can involve various types of interpretations. The one given is not meant to be all-inclusive.

Because of your familiarity with the astuteness of senior high school social studies teachers in the Columbus, Ohio, Public School System, it is being asked that you please indicate on the bottom of this communication the names of three teachers and the schools in which they teach, if known, who, in your professional judgement, use the discussion method as defined above or a variation. What is being sought are the names of three teachers who predominately favor discussion over other methods in their classes.

For your convenience to reply, a Campus envelope is attached.

Thank you for assisting me in the investigation involved.

Sincerely yours,

Joseph Stranges
154 West 12th Ave., Campus
<table>
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<th>Names of Teachers</th>
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To be Read by the Teacher to All of his American History Classes on May 7, 1969

Mr. Joseph Stranges of The Ohio State University is asking our cooperation to aid him in a study that he is conducting. This study will involve two class periods. In one period, tomorrow, Thursday, May 7, you will be asked to react to some questions involving your own opinions. The latter part of the period, you will be requested to give some general information which will also be in written form. The second day, Thursday, May 15, you will be asked to view some audio-visual tapes and write out a few remarks.

During the entire study, you will not be asked to place your name on the papers that you fill out--that is, you will remain anonymous.

At this time you are being asked to volunteer to be a part of the study. If you do not wish to participate, see me at the end of the period.

cc: Mr. Terry Black
Mr. Noel Curran
Mr. Arthur Darnbrough
Mr. Robert Richards
To: Mr. Terry Black, Mr. Arthur Darnbrough, and Mr. Robert Richards

From: Joseph Stranges

Subject: Part Two of the Empirical Research

This memo is to remind you that I will be at North High School on Thursday, May 15, to complete the study instituted last week. In your Wednesday, May 14, classes, inform your students that they will meet in the Projection Room during their American history period.

This Thursday after your students have entered the Projection Room and you have checked attendance, feel free either to remain or leave as you wish because the study will take the entire period.

Last Thursday, during the introductory remarks, students were told that the second part of the study involves two audio-visual tapes. They also are aware that during the latter part of the period they will be given the opportunity to complete the Student Demographic Form. It will be appreciated if you mention to your classes that it is important that they give their accumulative point-hour on the Student Demographic Form; thus, if they would try to identify it (it does not have to be completely accurate), less time will have to be spent calculating next Thursday.

It is difficult to express verbally the excellent cooperation you and your students afforded me during the first part of the study. Please convey my deepest gratitude to them.

Sincerely yours,

Joseph Stranges
May 11, 1959

cc: Mr. Noel Curran
Mr. Clayton Ferrell  
Administrative Offices  
Columbus Public Schools  
270 East State Street  
Columbus, Ohio  

Dear Mr. Ferrell,

This letter is being sent to express my personal thanks to you and the Columbus Public Schools for permitting me to conduct a study at North High School. Splendid cooperation was received from the Principal, Mr. Edwin Tilton; the Instructional Coordinator, Mr. Noel Curran; the teachers, Mr. Terry Black, Mr. Arthur Darnbrough and Mr. Robert Richards; and the students involved.

After the study is completely prepared, a summary of the findings will be given to you and the Principal of North High School.

Again, to you and those who made the investigation possible, my deepest gratitude is conveyed.

Sincerely yours,

Joseph Stranges  
1346 Shanley Drive  
Columbus, Ohio  

cc: Mr. Terry Black  
Mr. Noel Curran  
Mr. Arthur Darnbrough  
Mr. Edwin Tilton  
Mr. Robert Richards
BIBLIOGRAPHY
Books


Articles and Periodicals


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