



A comparison of the verbal teaching patterns of two groups of secondary student teachers, Montana State University, 1969-70  
by Dennis Larry Martinen

A thesis submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree \ of DOCTOR OF EDUCATION in Secondary Education  
Montana State University  
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**Abstract:**

The problem in this study was to investigate the verbal teaching patterns of secondary student teachers and to determine essentially what these teaching patterns were. As a corollary to the problem, the Rokeach Dogmatism Scale and the Teaching Situation Reaction Test were administered to student teachers to determine if these tests could predict successful student teachers prior to their student teaching experience in the secondary schools of Montana.

It was the purpose of this study, then, to record and analyze the verbal behavior patterns of two groups of secondary student teachers. One group, the control group, consisted of students who went through the regular training program. The other group received twenty hours of training in interaction analysis. Selected aspects of the reconstructed Flanders' matrix were compared and analyzed.

Another aspect of the problem dealt with the possible predictive value of the Teaching Situation Reaction Test and the Rokeach Dogmatism Scale as they pertained to superior teaching. A comparison and analysis was made between scores achieved on the two tests and such quantitative elements as grade point average in the major subject area, mean scores on the rating forms used by Montana State University supervisors and the grade given to measure the success in student teaching.

Procedures. The Fall Quarter, 1969, student teacher group was selected on a random basis from among those available teaching English, social studies, history, mathematics, biology. The Winter Quarter group was matched as closely as subject major or minor availability permitted. The Teaching Situation Reaction Test and the Dogmatism Scale were administered to all available student teachers. These tests were used as both dependent and independent variables. Data were analyzed using F-tests, and t-tests where applicable. Simple comparisons were also made.

Results. The student teachers trained with Flanders' coding of classroom techniques provided a more open classroom atmosphere.

The student teacher accepted more student ideas and praised them more, partly as a result, they criticized them less. The students talked considerably more and the teacher a little less. The amount of time devoted to content was the same, but it was used differently and the ratio of teacher to student talk was reduced.

The Dogmatism Scale was effective in predicting desirable change as measured by the Teaching Situation Reaction Test. Those people scoring high in flexibility and non-authoritarianism made significant growth while those judged authoritarian made little or no growth. The evaluation system used at Montana State University did not reflect these differences.

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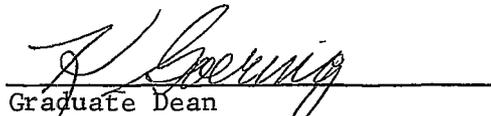
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Approved:

  
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Chairman, Examining Committee

  
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MONTANA STATE UNIVERSITY  
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## TABLE OF CONTENTS

|  | Page |
|--|------|
| VITA . . . . .   | ii   |
| ACKNOWLEDGEMENTS . . . . .   | iii  |
| LIST OF TABLES . . . . .   | viii |
| ABSTRACT . . . . .   | xi   |
| <br>Chapter  |      |
| 1. INTRODUCTION . . . . .  | 1    |
| Statement of the Problem . . . . .   | 3    |
| Need for the Study . . . . .   | 4    |
| Limitations of the Study . . . . .   | 6    |
| Definition of Terms . . . . .  | 8    |
| 2. REVIEW OF LITERATURE . . . . .  | 15   |
| Early Studies of Teacher-Student Interaction . . . . .                                     | 15   |
| Recent Studies of Teacher-Student Interaction . . . . .                                    | 20   |
| Predictive Studies Involving Validity of the<br>Teaching Situation Reaction Test . . . . . | 32   |
| Studies Involving Reliability of the Teaching<br>Situation Reaction Test . . . . .         | 33   |
| Studies Involving the Rokeach Dogmatism Scale . . . . .                                    | 34   |
| Summary . . . . .  | 36   |
| 3. METHOD . . . . .  | 38   |
| Selection and Description of the Control Groups . . . . .                                  | 38   |

| Chapter   | Page |
|---|------|
| Selection and Description of the Experimental Group . . . . .   | 39   |
| Instruments Used in the Study . . . . .   | 39   |
| Teaching Situation Reaction Test (TSRT) . . . . .   | 39   |
| Rokeach Dogmatism Scale . . . . .   | 41   |
| Supervisor's Report on Student Teaching . . . . .   | 41   |
| Classroom Teacher's Evaluation of Student Teachers . . . . .  | 42   |
| Flanders' System of Interaction Analysis . . . . .  | 42   |
| Summary . . . . .   | 48   |
| 4. PRESENTATION AND ANALYSIS OF THE DATA . . . . .  | 50   |
| An Analysis Using the Dogmatism Scale as an Independent Variable . . . . .                                  | 51   |
| An Analysis Using the Pre-Test of the Teaching Situation Reaction Test as an Independent Variable . . . . . | 56   |
| An Analysis Using the Grade Point Average Achieved in Student Teaching as an Independent Variable . . . . . | 60   |
| A Comparison of Groups A, B, C, E and F Using the Flanders' System of Coding and Analysis . . . . .         | 63   |
| Summary of Group Comparisons . . . . .  | 70   |
| Fall Quarter Student Teacher Number 1 . . . . .   | 72   |
| Fall Quarter Student Teacher Number 2 . . . . .   | 74   |
| Fall Quarter Student Teacher Number 3 . . . . .   | 76   |
| Fall Quarter Student Teacher Number 4 . . . . .   | 77   |

| Chapter   | Page |
|---|------|
| Fall Quarter Student Teacher Number 5 . . . . .         | 80   |
| Fall Quarter Student Teacher Number 6 . . . . .         | 82   |
| Fall Quarter Student Teacher Number 7 . . . . .         | 84   |
| Fall Quarter Student Teacher Number 8 . . . . .         | 87   |
| Fall Quarter Student Teacher Number 9 . . . . .         | 89   |
| Fall Quarter Student Teacher Number 10 . . . . .        | 91   |
| Fall Quarter Student Teacher Number 11 . . . . .        | 93   |
| Fall Quarter Student Teacher Number 12 . . . . .        | 95   |
| Fall Quarter Composite Student Teacher Matrix . . . . . | 97   |
| Winter Quarter Student Teacher Number 1 . . . . .       | 102  |
| Winter Quarter Student Teacher Number 2 . . . . .       | 104  |
| Winter Quarter Student Teacher Number 3 . . . . .       | 106  |
| Winter Quarter Student Teacher Number 4 . . . . .       | 108  |
| Winter Quarter Student Teacher Number 5 . . . . .       | 110  |
| Winter Quarter Student Teacher Number 6 . . . . .       | 112  |
| Winter Quarter Student Teacher Number 7 . . . . .       | 114  |
| Winter Quarter Student Teacher Number 8 . . . . .       | 116  |
| Winter Quarter Student Teacher Number 9 . . . . .       | 116  |
| Winter Quarter Student Teacher Number 10 . . . . .      | 119  |
| Winter Quarter Composite Student Teacher . . . . .      | 121  |
| Summary . . . . .                                       | 123  |

| Chapter   | Page |
|---|------|
| 5. SUMMARY, CONCLUSIONS, RECOMMENDATIONS . . . . .                          | 127  |
| Summary . . . . .   | 127  |
| Conclusions . . . . .   | 137  |
| Recommendations . . . . .   | 138  |
| SELECTED BIBLIOGRAPHY . . . . .   | 141  |
| APPENDIX A: TEACHING SITUATION REACTION TEST . . . . .                      | 149  |
| APPENDIX B: STUDENT OPINION QUESTIONNAIRE . . . . .                         | 169  |
| APPENDIX C: COLLEGE SUPERVISOR'S REPORT ON STUDENT<br>TEACHING . . . . .    | 174  |
| APPENDIX D: CLASSROOM TEACHER'S EVALUATION OF STUDENT<br>TEACHERS . . . . . | 176  |
| APPENDIX E: SUMMARY OF CATEGORIES FOR INTERACTION<br>ANALYSIS . . . . .     | 179  |

LIST OF TABLES

| Table   | Page |
|---|------|
| 1. Interaction Analysis Data for New Zealand Students . . . . .   | 20   |
| 2. Talk by Grade Level . . . . .  | 22   |
| 3. Percentage of Tallies of Interaction Categories . . . . .  | 25   |
| 4. Reliabilities, Means, and Standard Deviations of Successive Forms of the Dogmatism Scale . . . . .     | 35   |
| 5. Sample Interaction Matrix . . . . .  | 44   |
| 6. Corresponding Scores to High Dogmatism Scores . . . . .  | 52   |
| 7. Corresponding Scores Determined by Low Dogmatism Scores . . . . .                                      | 53   |
| 8. An Analysis of Scores Using Dogmatism Scores as an Independent Variable . . . . .                      | 54   |
| 9. Statistical Significance of Scores Using Dogmatism Scores as an Independent Variable . . . . .         | 55   |
| 10. 218 and Above . . . . .   | 57   |
| 11. 190 or Lower . . . . .  | 58   |
| 12. An Analysis of Scores Using Pre-TSRT as an Independent Variable . . . . .                             | 59   |
| 13. Statistical Significance of Scores Using Pre-TSRT as an Independent Variable . . . . .                | 60   |
| 14. An Analysis of Scores Using GPA in Student Teaching as an Independent Variable . . . . .              | 61   |
| 15. Statistical Significance of Scores Using GPA in Student Teaching as an Independent Variable . . . . . | 62   |
| 16. Dogmatism Scores . . . . .  | 64   |
| 17. Intergroup Comparisons of Dogmatism Scores . . . . .  | 64   |

| Table  | Page |
|--|------|
| 18. Intragroup Comparisons of Dogmatism Scores . . . . .               | 65   |
| 19. Pre-Test of TSRT . . . . .   | 66   |
| 20. Intergroup Comparisons of Pre-TSRT Scores . . . . .                | 67   |
| 21. Intragroup Comparison of Pre-TSRT Scores . . . . .                 | 68   |
| 22. GPA in Major . . . . .   | 69   |
| 23. Intergroup Comparison of GPA in Major Subject . . . . .            | 69   |
| 24. Intragroup Comparisons of GPA in Major Subject . . . . .           | 70   |
| 25. Percentage Matrix for Fall Student Teacher Number 1 . . . . .      | 73   |
| 26. Percentage Matrix for Fall Student Teacher Number 2 . . . . .      | 75   |
| 27. Percentage Matrix for Fall Student Teacher Number 3 . . . . .      | 77   |
| 28. Percentage Matrix for Fall Student Teacher Number 4 . . . . .      | 79   |
| 29. Percentage Matrix for Fall Student Teacher Number 5 . . . . .      | 81   |
| 30. Percentage Matrix for Fall Student Teacher Number 6 . . . . .      | 83   |
| 31. Percentage Matrix for Fall Student Teacher Number 7 . . . . .      | 85   |
| 32. Percentage Matrix for Fall Student Teacher Number 8 . . . . .      | 88   |
| 33. Percentage Matrix for Fall Student Teacher Number 9 . . . . .      | 90   |
| 34. Percentage Matrix for Fall Student Teacher Number 10 . . . . .     | 92   |
| 35. Percentage Matrix for Fall Student Teacher Number 11 . . . . .     | 94   |
| 36. Percentage Matrix for Fall Student Teacher Number 12 . . . . .     | 96   |
| 37. Composite Percentage Matrix for Fall Student<br>Teachers . . . . . | 98   |
| 38. Fall Quarter Student Teachers . . . . .                            | 100  |

| Table  | Page |
|--|------|
| 39. Percentage Matrix for Winter Quarter Student<br>Teacher Number 1 . . . . .   | 103  |
| 40. Percentage Matrix for Winter Quarter Student<br>Teacher Number 2 . . . . .   | 105  |
| 41. Percentage Matrix for Winter Quarter Student<br>Teacher Number 3 . . . . .   | 107  |
| 42. Percentage Matrix for Winter Quarter Student<br>Teacher Number 4 . . . . .   | 109  |
| 43. Percentage Matrix for Winter Quarter Student<br>Teacher Number 5 . . . . .   | 111  |
| 44. Percentage Matrix for Winter Quarter Student.<br>Teacher Number 6 . . . . .  | 113  |
| 45. Percentage Matrix for Winter Quarter Student.<br>Teacher Number 7 . . . . .  | 115  |
| 46. Percentage Matrix for Winter Quarter Student<br>Teacher Number 8 . . . . .   | 117  |
| 47. Percentage Matrix for Winter Quarter Student.<br>Teacher Number 9 . . . . .  | 118  |
| 48. Percentage Matrix for Winter Quarter Student<br>Teacher Number 10 . . . . .  | 120  |
| 49. Composite Percentage Matrix for Winter Quarter<br>Student Teachers . . . . . | 122  |
| 50. Winter Quarter Student Teachers . . . . .                                    | 124  |
| 51. Summary of Composite Student Teachers . . . . .                              | 130  |
| 52. Mean Ratios or Percentages . . . . .   | 133  |

## ABSTRACT

The problem in this study was to investigate the verbal teaching patterns of secondary student teachers and to determine essentially what these teaching patterns were. As a corollary to the problem, the Rokeach Dogmatism Scale and the Teaching Situation Reaction Test were administered to student teachers to determine if these tests could predict successful student teachers prior to their student teaching experience in the secondary schools of Montana.

It was the purpose of this study, then, to record and analyze the verbal behavior patterns of two groups of secondary student teachers. One group, the control group, consisted of students who went through the regular training program. The other group received twenty hours of training in interaction analysis. Selected aspects of the reconstructed Flanders' matrix were compared and analyzed.

Another aspect of the problem dealt with the possible predictive value of the Teaching Situation Reaction Test and the Rokeach Dogmatism Scale as they pertained to superior teaching. A comparison and analysis was made between scores achieved on the two tests and such quantitative elements as grade point average in the major subject area, mean scores on the rating forms used by Montana State University supervisors and the grade given to measure the success in student teaching.

Procedures. The Fall Quarter, 1969, student teacher group was selected on a random basis from among those available teaching English, social studies, history, mathematics, biology. The Winter Quarter group was matched as closely as subject major or minor availability permitted.

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The Dogmatism Scale was effective in predicting desirable change as measured by the Teaching Situation Reaction Test. Those people scoring high in flexibility and non-authoritarianism made significant growth while those judged authoritarian made little or no growth. The evaluation system used at Montana State University did not reflect these differences.

## Chapter 1

### INTRODUCTION

Education, today, is a topic that is of vital interest to Montana, as well as the nation. Few people deny that the interactive process of teaching and learning is a complex one that makes scientific research difficult.

There is little doubt that scientific research has lagged in the analysis of the proper procedures for teaching. (Flanders, 1951) This lack of research is due to several reasons.

People concerned with research in education have found it difficult to develop reliable and valid instruments that can stand the test of replication. (Mitzel, 1960) To understand their difficulty, the subject must be understood. People are so highly complex and at times irrational, it is extremely difficult to predict their behavior. Research in science does not have this problem. A subject such as crystal, also highly complex, always reacts in a predictable fashion following the laws of nature.

Another problem in the analysis of the teaching pattern is the natural suspicion classroom teachers have for any kind of outside influence. This basic resistance to change was noted by such early psychologists as William James and Ivan Pavlov. (Hilgard and Bower, 1966)

Teaching is by nature a very personal process. The inner egos of both students and teachers are constantly exposed. Each party can hurt the other either intentionally or unintentionally. Much of the hurt and consequent withdrawal can be avoided with proper training of the teacher. (Flanders, 1951)

Some speak of the "born teacher" and his natural effectiveness with youngsters. It is wonderful to see such outstanding examples of teaching competency, but unfortunately, they don't seem to be born in sufficient numbers to fill all our classrooms.

For those people who are not born to teach, it is necessary to provide a program where they may attain the highest level of teaching competency possible before they are placed in teaching situations and then they should be provided with the proper techniques and tools for continued self-analysis. It is only through constant work and vigilance that teachers can achieve and retain a high level of excellence.

Many institutions of higher learning offer teacher training programs. If these programs are to meet the challenges of the ever changing modern day student, the programs must be frequently evaluated and updated. Youngsters are changing and the program that trains their teachers must change with them or become increasingly less effective.

However, before one can look at possible avenues or directions of change, one must first determine a base line of present day performance. This study attempted to gather base line information on the present program, as well as explore areas of training never before offered at Montana State University.

#### Statement of the Problem

The problem in this study was to investigate the verbal teaching patterns of secondary student teachers and to determine essentially what these teaching patterns were. As a corollary to the problem, the Rokeach Dogmatism Scale and the Teaching Situation Reaction Test were administered to student teachers to determine if these tests could predict successful student teachers prior to their placement in the secondary schools of Montana.

It was the purpose of this study, then, to record and analyze the verbal behavior patterns of two groups of secondary student teachers. One group, the control group, consisted of students who went through the regular training program. The other group received twenty hours of training in interaction analysis. Selected aspects of the reconstructed Flanders' matrix were compared and analyzed. (Flanders, 1965)

Another aspect of the problem dealt with the possible predictive value of the Teaching Situation Reaction Test (Duncan with

Hough, 1966) and the Rokeach Dogmatism Scale (Rokeach, 1960) as they pertain to superior teaching. A comparison and analysis was made between scores achieved on the two tests and such quantitative elements as grade point average in the major and minor, grade point average in professional subjects, mean scores on the rating forms used by Montana State University supervisors and the grade given to measure the success in student teaching.

#### Need for the Study

A survey of available literature indicated that a relatively quantitative study of verbal teaching patterns of secondary student teachers had never been done at Montana State University, nor had the possible predictive aspects of the Teaching Situation Reaction Test and the Rokeach Dogmatism Scale been explored at this institution. Additional information is available in Chapter Two concerning the use of these instruments at other institutions.

The period of time when student teachers work actively in a classroom under the direction of a classroom teacher is often viewed by them as a culmination of their undergraduate college education. During a personal interview in January, 1970, Mr. G. V. Erickson, former Director of Student Teaching at Montana State University stated, "some student teachers fail because they are unable to master basic teaching competencies." These unfortunate incidents of

failure can be reduced if more reliable instruments of selection can be developed.

In order to properly assess the excellence of any program, it must be analyzed in terms of its objectives. Presumably one of the measures of success for prospective teachers is the ability to obtain and hold a teaching job.

In a study by McMurchy (1969), the four-year education graduates of 1966, 1967, and 1968 were polled. Of the fifty-four percent who responded to the questionnaire, seventy-five percent of the 1966 graduates were still teaching and eighty-two percent of the 1967 graduating teachers were currently teaching. (McMurchy, 1969)

The student teachers that are graduates of Montana State University are successful; the records show this. They are able to obtain jobs and hold them, but what is really known about the teaching patterns of these people? Are some of them placed in positions that result in unhappiness for them and their students? The records show that this is also true. McMurchy noted that approximately three percent of those leaving teaching were doing so because of poor health, inability to keep discipline, or dislike for teaching (McMurchy, 1969, p. 60) If more were known about the kinds of teaching patterns student teachers possessed at graduation, some misplacement could be avoided. Not only could misplacement be avoided, but greater efforts could be made to teach the identi-

fiable skills of superior student teachers to the students in training. Presumably the most critical measure of excellence for prospective teachers would be the creation of a classroom climate that would encourage every child to develop his abilities to the fullest extent possible. Studies will be cited in Chapter Three showing the relationship between teaching style and achievement. These studies will also show a relationship between teaching style and student attitudes toward peers and teachers. The time may well come when some teachers will not only be hired on the basis of subject content, but also on the basis of demonstrable skill they possess in direct or indirect teaching proficiencies.

As a result of this study, the College of Education at Montana State University will have on record the relatively quantitative teaching patterns exhibited by the twenty-two student teachers who were closely observed. The basic teaching pattern of each can be accurately re-constructed and evaluated, and decisions can be reached as to whether these patterns are desirable. This study should result in a greater understanding of the techniques our student teachers use.

#### Limitations of the Study

It is recognized that this study contains a number of variables that are impossible to control and yet could be a deter-

mining factor in the style of verbal interaction present in the classroom. Fortunately class size remained relatively constant, near an average of twenty-five students per class. However, such factors as the effects of the different cooperating teachers, ethnic and geographic location remain unassessed. In spite of the factors noted plus other equally potent variables, it was felt that information gained from a random sample of student teachers over a two-quarter period of time would be a valuable piece of data.

Another rather severe limitation was imposed on the study by the relatively short period of time (thirty teaching days) that the secondary student teachers spent in the classroom. During the Fall Quarter, two days of the thirty were school holidays. Of the remaining twenty-eight, the writer spent fifteen days with fourteen student teachers. Unfortunately, three of the fifteen days produced no usable information as the lessons presented were unsuitable to code.

Virtually all interaction presented on those observation days was coded. The matrices, later presented, are a fairly comprehensive version of one day's teaching.

The study is limited to those secondary student teachers selected at random Fall Quarter, 1969, and matched as closely as possible Winter Quarter, 1970, by those with appropriate majors and minors. The majors and minors considered were English, social studies, history, mathematics and biology since it was assumed that

there would be more continual teacher-student interaction in these subject matter areas than in such subjects as physical education or industrial arts.

### Definition of Terms

Secondary student teacher--Student enrolled in Education 410 and Education 411 at Montana State University and teaching in one or more of the grades seven through twelve in public schools of Montana.

Flanders' matrix--Ten by ten array of unit cells grouped according to rectangular coordinate system used in elementary mathematics systems. A more complete description of the categories, and cells, as well as the matrix is offered in Chapter Three.

### Example

|                                     | 1  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-------------------------------------|----|---|---|---|---|---|---|---|---|----|
| Accepts Feeling                     | 1  |   |   |   |   |   |   |   |   |    |
| Praises or Encourages               | 2  |   |   |   |   |   |   |   |   |    |
| Accepts or Uses Ideas of Students   | 3  |   |   |   |   |   |   |   |   |    |
| Asks Questions                      | 4  |   |   |   |   |   |   |   |   |    |
| Lecturing                           | 5  |   |   |   |   |   |   |   |   |    |
| Giving Directions                   | 6  |   |   |   |   |   |   |   |   |    |
| Criticizing or Justifying Authority | 7  |   |   |   |   |   |   |   |   |    |
| Student Talk - Response             | 8  |   |   |   |   |   |   |   |   |    |
| Student Talk - Initiation           | 9  |   |   |   |   |   |   |   |   |    |
| Silence of Confusion                | 10 |   |   |   |   |   |   |   |   |    |

I/D ratio--Total of columns 1, 2, 3, 4 divided by the total of columns 5, 6, 7. (Amidon and Flanders, 1967, p. 131) This ratio compares the time spent praising or asking questions to the time spent lecturing, giving directions or offering criticism.

Revised I/D ratio (RID)--Total of columns 1, 2, 3, (kinds of praise) divided by the total of columns 6 and 7 (direction and criticism).

Teacher-talk--Total of columns 1, 2, 3, 4, 5, 6, 7.

Student-talk--Total of columns 8, 9.

T/S--Total of columns 8 and 9 divided into the total of columns 1, 2, 3, 4, 5, 6, 7.

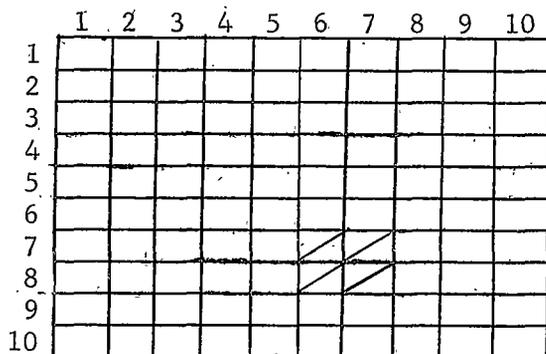
Extended indirect influence--Total of cells (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,3), (3,3). These cells reflect the amount of time spent in different categories of praising the students.

Example

|    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----|---|---|---|---|---|---|---|---|---|----|
| 1  | / | / | / |   |   |   |   |   |   |    |
| 2  | / | / | / |   |   |   |   |   |   |    |
| 3  | / | / | / |   |   |   |   |   |   |    |
| 4  |   |   |   |   |   |   |   |   |   |    |
| 5  |   |   |   |   |   |   |   |   |   |    |
| 6  |   |   |   |   |   |   |   |   |   |    |
| 7  |   |   |   |   |   |   |   |   |   |    |
| 8  |   |   |   |   |   |   |   |   |   |    |
| 9  |   |   |   |   |   |   |   |   |   |    |
| 10 |   |   |   |   |   |   |   |   |   |    |

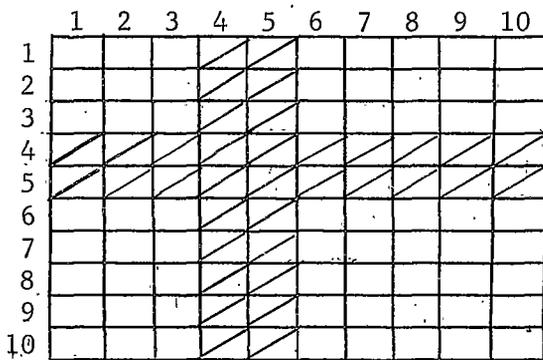
Extended direct influence--Total of cells (6,6), (6,7), (7,6), (7,7). These cells reflect the amount of time spent giving directions and criticism.

Example



The "content cross"--Total of cells (1,4), (1,5), (2,4), (2,5), (3,4), (3,5), (4,1), (4,2), (4,3), (4,4), (4,5), (4,6), (4,7), (4,8), (4,9), (4,10), (5,1), (5,2), (5,3), (5,4), (5,5), (5,6), (5,7), (5,8), (5,9), (5,10), (6,4), (6,5), (7,4), (7,5), (8,4), (8,5), (9,4), (9,5), (10,4), (10,5). These cells carry the content covered in the teaching period.

Example



Student-talk following student-talk--Total of cells (8,8), (8,9), (9,9), (10,8), (10,9).

Example

|    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----|---|---|---|---|---|---|---|---|---|----|
| 1  |   |   |   |   |   |   |   |   |   |    |
| 2  |   |   |   |   |   |   |   |   |   |    |
| 3  |   |   |   |   |   |   |   |   |   |    |
| 4  |   |   |   |   |   |   |   |   |   |    |
| 5  |   |   |   |   |   |   |   |   |   |    |
| 6  |   |   |   |   |   |   |   |   |   |    |
| 7  |   |   |   |   |   |   |   |   |   |    |
| 8  |   |   |   |   |   |   |   | / | / |    |
| 9  |   |   |   |   |   |   |   | / | / | /  |
| 10 |   |   |   |   |   |   |   | / | / | /  |

Silence or confusion following teacher-talk or student-talk--

Total of cells (1,10). (2,10). (3,10), (4,10). (5,10), (6,10),  
(7,10), (8,10), (9,10).

Example

|    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----|---|---|---|---|---|---|---|---|---|----|
| 1  |   |   |   |   |   |   |   |   |   | /  |
| 2  |   |   |   |   |   |   |   |   |   | /  |
| 3  |   |   |   |   |   |   |   |   |   | /  |
| 4  |   |   |   |   |   |   |   |   |   | /  |
| 5  |   |   |   |   |   |   |   |   |   | /  |
| 6  |   |   |   |   |   |   |   |   |   | /  |
| 7  |   |   |   |   |   |   |   |   |   | /  |
| 8  |   |   |   |   |   |   |   |   |   | /  |
| 9  |   |   |   |   |   |   |   |   |   | /  |
| 10 |   |   |   |   |   |   |   |   |   | /  |

Total silence or confusion--Total of cells (1,10), (2,10),  
(3,10), (4,10), (5,10), (6,10), (7,10), (8,10), (9,10). (10,10).

Example

|    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----|---|---|---|---|---|---|---|---|---|----|
| 1  |   |   |   |   |   |   |   |   |   | /  |
| 2  |   |   |   |   |   |   |   |   |   | /  |
| 3  |   |   |   |   |   |   |   |   |   | /  |
| 4  |   |   |   |   |   |   |   |   |   | /  |
| 5  |   |   |   |   |   |   |   |   |   | /  |
| 6  |   |   |   |   |   |   |   |   |   | /  |
| 7  |   |   |   |   |   |   |   |   |   | /  |
| 8  |   |   |   |   |   |   |   |   |   | /  |
| 9  |   |   |   |   |   |   |   |   |   | /  |
| 10 |   |   |   |   |   |   |   |   |   | /  |

Indirect teacher response to student comments--Total of cells

(8,1), (8,2), (8,3), (8,4), (9,1), (9,2), (9,3), (9,4).

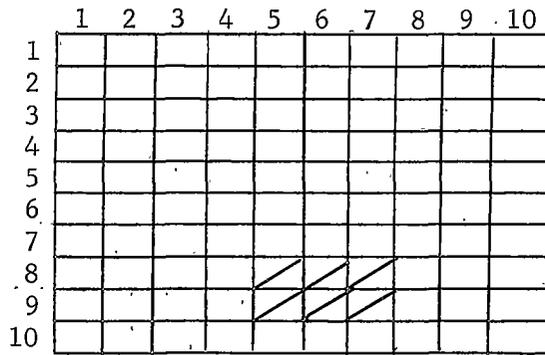
Example

|    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|----|---|---|---|---|---|---|---|---|---|----|
| 1  |   |   |   |   |   |   |   |   |   |    |
| 2  |   |   |   |   |   |   |   |   |   |    |
| 3  |   |   |   |   |   |   |   |   |   |    |
| 4  |   |   |   |   |   |   |   |   |   |    |
| 5  |   |   |   |   |   |   |   |   |   |    |
| 6  |   |   |   |   |   |   |   |   |   |    |
| 7  |   |   |   |   |   |   |   |   |   |    |
| 8  | / | / | / | / |   |   |   |   |   |    |
| 9  | / | / | / | / |   |   |   |   |   |    |
| 10 |   |   |   |   |   |   |   |   |   |    |

Direct teacher response as a result of student comments--

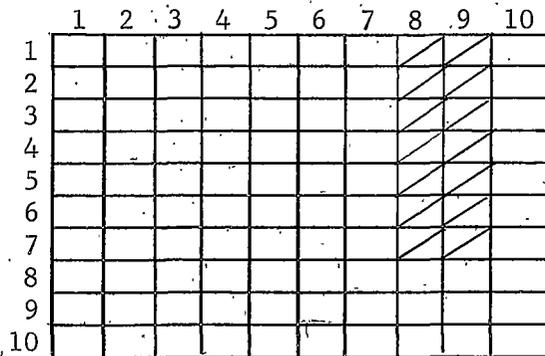
Total of cells (8,5), (8,6), (8,7), (9,5), (9,6), (9,7).

Example



Student-talk following teacher-talk--Total of cells (1,8), (1,9), (2,8), (2,9), (3,8), (3,9), (4,8), (4,9), (5,8), (5,9), (6,8), (6,9), (7,8), (7,9).

Example



Summary

The availability of research information about the verbal teaching patterns of the secondary student teachers at Montana State University was explored and its lack was noted. It was the problem of this study, then, to investigate the verbal teaching patterns of

selected secondary student teachers and to determine essentially what these teaching patterns were. As a corollary to the problem, the Rokeach Dogmatism Scale and the Teaching Situation Reaction Test were administered to student teachers to determine if these tests could predict successful student teachers prior to their student teaching experience in the secondary schools of Montana. The Flanders' system of recording and analysis was used to investigate the verbal teaching patterns of the student teachers.

## Chapter 2

### REVIEW OF LITERATURE

In reviewing the literature, two basic categories were covered: (1) literature pertaining to interaction analysis, and (2) literature pertaining to the information gathering instruments. The information gathering instruments included: (1) Flanders' system of coding classroom behavior; (2) Teaching Situation Reaction Test; and (3) Rokeach Dogmatism Scale.

#### Early Studies of Teacher-Student Interaction

Some of the earliest studies regarding a type of interaction of students and teachers stems from the work of H. H. Anderson and his associates, Joseph and Helen Brewer and Mary Frances Reed. (Anderson, 1939). These studies and later ones tended to polarize human contacts as either "dominative" or "integrative" contacts. Since most research on classroom climate tends to dwell in these areas it is essential that they be understood.

Early researchers thought of these two kinds of behavior in this way.

A preliminary study showed that it was possible to devise reliable measures of behavior of young children. Behavior was recorded as "contacts" divided into two groups of categories. If a child snatched a toy, struck a playmate, or commanded him, or if he attempted to force him in some way, such contacts were included under the term "domination". By such behavior he ignored the rights of the companion; he tended to reduce the

interplay of differences and to lead toward resistance or conformity in responding or adapting to another.

Other contacts were recorded which tended to increase the interplay of differences. Offering a companion a choice or soliciting an expression of his desires were gestures of flexibility and adaptation. These tended in the direction of discovering common purposes among differences. Such contacts were grouped under the term "socially integrative behavior". (Anderson and Reed, 1946, p. 5)

Anderson's work was based primarily on youngsters in the pre-school and elementary stage of development. It involved five different teachers over a period of several years. Over a period of time, certain consistent findings appeared. One of the most significant findings related to the behavior of the teacher as it set the climate for the class. Dominative contacts by the teacher spread further dominative contacts throughout the room, while integrative contacts cited further integrative contacts. This tendency persisted when the teacher no longer was present in the room. A second significant finding concerned those teachers with a high proportion of integrative contacts. Pupils in this setting were more spontaneous, showed more initiative and exhibited more acts of problem solving. (Anderson, 1939)

A third finding by Anderson and Reed (1946) showed that students with a high proportion of dominative contacts were easily distracted and showed greater rejection of teacher domination.

A second early study done by Lippitt and White (1943) made an independent analysis of the effect of adult leaders on boys' groups. This study was done under more closely controlled laboratory conditions. The role of the adult leaders was made more consistent as a result of careful training and role playing. The basic differences evolving from different personalities were minimized by rotation of leaders among the groups. To intensify the effect of the adult leaders, the groups were kept at five boys. The experiments of Lippitt and White contained some slight variations when compared to the work of Anderson. Essentially though, Lippitt and White used "authoritarian leadership" as the integrative contact; and "laissez-faire" as a pattern of infrequent integrative contacts mixed with an element of indifference to the rest of the group. This latter pattern is seldom found in the classroom and Anderson and others did not consider it in their studies.

A most interesting aspect of this second independent study concerns its relationship to the work by Anderson. With some changes in semantics, but with virtually no changes in behavioral actions the two studies are mutually supportive. One interesting facet of Lippitt and White involved a conceptual extension of Anderson's "conforming to teacher domination." Under the more intensive social climate of the laboratory it was readily seen that extensive compli-

ance by youngsters occurred if a generalized condition of dependence was maintained. (Lippitt, 1940)

These two supportive studies resulted in several other studies concerning the social climate of the classroom. In a study by Withall (1949) a seven category system of integrative-dominative behavior gave results similar to Anderson's. In an early study by Flanders (1951) youngsters were exposed to contrasting patterns of teacher behavior one pupil at a time. Flanders noted that the dominative pattern was consistently disliked by the youngsters. The dislike was measured in terms of inability to recall information; anxiety as measured by the galvanic skin response and changes in the heart beat. All three indicators showed positive gains when integrative contacts were used.

A study by Perkins (1951) supported the general theme of greater learning brought about by an integrative type of leader. Cogan (1956), in a large cross-sectional study involving 987 eighth grade students in 33 classrooms had a similar finding. Cogan did not use a system of spontaneous observations as did Perkins and Withall, but a pencil and paper type instrument that assessed (a) student perceptions of the teacher; (b) how often they did required homework; and (c) how often they did non-required homework. Cogan found that they did more required and non-required homework

when they, the students, perceived the teacher as an integrative type rather than a dominant type.

These research projects cited all support the notion of the importance of classroom climate. A summarization of the two types of teaching patterns follows:

The Integrative or Indirect Pattern

- (a) Accepts, clarifies, and supports the ideas and feelings of pupils.
- (b) Praises and encourages.
- (c) Asks questions to stimulate pupil participation in decision-making.
- (d) Asks questions to orient pupils to school work.

The Dominative or Direct Pattern

- (a) Expresses or lectures about own ideas or knowledge.
- (b) Gives directions or orders.
- (c) Criticizes or deprecates pupil behavior with intent to change it.
- (d) Justifies own position or authority. (Flanders, 1965, p. 6)

### Recent Studies of Teacher-Student Interaction

The year 1956-57 is taken as an arbitrary point to distinguish studies of two periods. It was at this point that Flanders first used the notion of a matrix in his analysis of data.

In a study done in New Zealand in 1956-57, Flanders (1965) found a significant relationship between attitudes of elementary youngsters and teaching style exhibited by the teacher. It was shown that:

....classes that scored high on liking the teacher, motivation, fair rewards and punishments, lack of anxiety, and independence used more indirect influence, while teachers of classes that scored low used less indirect influence. (Flanders, 1965, p. 64)

A concurrent study done in Minnesota also confirms this. (Flanders, 1965)

Table 1 gives the interaction analysis data for the five high and low scoring attitude classes in New Zealand. The subjects were standard 4 youngsters, 10 to 12 years old. (Flanders, 1965, p. 57)

TABLE 1

INTERACTION ANALYSIS DATA FOR NEW ZEALAND STUDENTS

|  |    | Category in Percent Type of Class |        |
|--|----|-----------------------------------|--------|
|  |    | Highest                           | Lowest |
| Accepts and clarifies feelings                             | 1  | 0.41                              | 0.05   |
| Praises and encourages                                     | 2  | 2.28                              | 0.09   |
| Accepts and clarifies student ideas                        | 3  | 6.28                              | 2.89   |
| Asks questions   | 4  | 8.71                              | 5.85   |
| Routine administration or statements unrelated to learning | 5  | 0.40                              | 0.67   |
| Gives information or lectures                              | 6  | 24.15                             | 25.40  |
| Gives direction  | 7  | 9.58                              | 16.50  |
| Gives criticism  | 8  | 2.58                              | 6.31   |
| Justifies own authority                                    | 9  | 31.52                             | 20.35  |
| Pupil talks  | 10 |                                   |        |
| Silence, pauses or confusion                               | 11 | 13.71                             | 19.99  |
| Total Tallies  |    | 10,769                            | 29,054 |

A third study in Minnesota involved seventh grade social studies and eighth grade mathematics classes. The general results are consistent with those studies cited previously, i.e., those teachers using indirect teaching patterns stimulated greater achievement than those who were more direct. In fact, it was found that "direct teacher influence restricts learning when a student's perception of the goal is ambiguous." (Flanders, 1965, p. 108)

In an intensive study conducted by Norma Furst and Edmund Amidon at the elementary level, variation in verbal communication was noted in grade level and subject taught. The schools involved were divided by economic level; low, medium or high. At least twenty-five classrooms were involved at each level. Table 2 is a description of talk by grade level.

TABLE 2

TALK BY GRADE LEVEL

| Grade | Teacher Talk Percentage | Student Talk Percentage | Silence Percentage |
|-------|-------------------------|-------------------------|--------------------|
| 1     | 47                      | 32                      | 21                 |
| 2     | 41                      | 42                      | 17                 |
| 3     | 42                      | 40                      | 18                 |
| 4     | 49                      | 39                      | 12                 |
| 5     | 47                      | 29                      | 14                 |
| 6     | 47                      | 35                      | 16                 |

(Furst and Amidon, 1965)

The results of the study show that primary teachers used a large amount of time in question and answer sessions while the intermediate teachers appeared to feel that more extensive lecture was conducive to learning. In the upper grades more time was given to independent work by the student.

In Table 2 the column under silence is fairly constant, but an analysis of the matrix reflects different kinds of silence. In the lower grades silence was recorded as a result of changing seats, opening books or a general change of activity. In the upper grades large blocks of silence reflected more extensive seat work.

Praise is used rather extensively at the elementary level and it is interesting to note in this study that it was used most persistently by the first and fifth grade teachers. Variation in techniques of subjects was also apparent. Either by design or accident teaching of social studies was more indirect than teaching of reading or arithmetic. The amount of talk initiated by the students was at its lowest level in grade one, but in grade six it had increased by a factor of ten.

It is apparent from this examination of the material cited that different teaching styles can be identified by grade level, but underlying the grade level differences one still finds the consistent results first noted by H. H. Anderson thirty years ago.

No one in education today believes that all students are alike. Some would argue that it is folly to expect that any single method would be effective with all students, and rightly so. Certainly, thought and research need to be done in the area of pupil personality as it meshes with teacher methods and goals.

A study by Amidon and Flanders explores this area. The study revolved about four treatments done to four different groups of students by a single teacher. The treatments included:

- (1) Direct teacher influence: clear goals, 35 dependent-prone students.
- (2) Direct teacher influence: unclear goals, 35 dependent-prone students.
- (3) Indirect teacher influence: clear goals, 35 dependent-prone students.
- (4) Indirect teacher influence: unclear goals, 35 dependent-prone students. (Amidon and Flanders, 1961)

The 140 students were selected on the basis of scores of a dependence proneness test developed by Flanders, Anderson and Amidon. They consisted of the top 25 percent of a larger group of 540 students selected at random.

An examination of Table 3 shows that the single teacher was able to alter his behavior effectively. This was noted in the amount of the category represented under the various treatments.

The results of the study are especially interesting. First, no significant difference was found in achievement whether the groups understood the goals or not. Second, it was found that those students in the indirect group scored significantly higher than those in a direct group upon a post examination. This second conclusion has many meaningful connotations. This is especially true when further study shows that as youngsters show more independence these differences of indirect versus direct become less significant.

TABLE 3

PERCENTAGE OF TALLIES OF INTERACTION  
CATEGORIES

| Category Definition  | Treatment |       |       |       |
|--|-----------|-------|-------|-------|
|  | 1         | 2     | 3     | 4     |
| Teacher Talk:<br>Praise and encouragement:                         | 1.35      | 1.61  | 27.04 | 24.90 |
| Clarification and development<br>of ideas suggested by<br>students | 2.48      | 0.92  | 15.78 | 16.10 |
| Asks questions   | 2.58      | 1.73  | 28.07 | 30.04 |
| Gives own opinion and facts<br>(lectures)                          | 63.10     | 61.40 | 13.52 | 15.97 |
| Gives directions   | 8.67      | 10.36 | 0.28  | 0.27  |
| Criticizes students  | 13.03     | 15.54 | 1.27  | 0.94  |
| Student talk   | 5.07      | 5.29  | 16.47 | 17.17 |
| No one talking   | 3.49      | 3.45  | 7.75  | 4.69  |
| Total tallies on which the<br>percentage figures are based         | 889       | 869   | 711   | 746   |

When youngsters scoring in the top 25 percent of independence are used, no significant difference results. When compared to the total sample of students the more dependent prone student is more influenced by the teaching pattern.

Studies have been done at various levels and content areas comparing the verbal behavior patterns of superior teachers with those judged not as proficient. One study done by Amidon and Giammateo (Amidon and Hough, ed., 1967) involved 153 elementary teachers from eleven districts. This group included thirty-three teachers identified as superior by their administrators or supervisors and 120 for the normative group selected at random.

The results of analyzing the Flanders Matrix indicate that

....the superior teachers talked approximately 40% of their total class time while the normative group talked approximately 52% of the time. The superior teachers were more accepting of student-initiated ideas, tended to encourage these ideas more and also made more of an effort to build on these ideas than did the average group of teachers. The superior teachers dominated their classrooms less, used indirect verbal behavior more, and used direction-giving and criticism less than the normative group of teachers. The superior teachers asked questions which were broader in nature than the normative group, and their lectures were interrupted more by questions from the students. There was about 12% more participation in the classes of the superior teachers. (Amidon and Hough, ed., 1967, p. 187-188)

One might tend to dismiss this study on the basis that it simply shows that administrators and supervisors tend to pick

certain kinds of teachers as superior. The concept of a superior teacher and teaching must be identified in more objective terms. If superior teaching is linked with greater achievement by students on standardized achievement tests and more positive attitudes towards others in their peer groups, then studies are available to supply relatively objective information about superior teaching. Several examples will be cited.

Nelson (1966) did a study on the elementary level. She found a positive or favorable relationship between indirect teacher influence and inhibition of students development of written language skills.

Furst (1965) also identified certain relationships between teacher influence patterns and student achievement at the elementary level. She also concluded that there was a positive relationship between amount of talk and student achievement.

La Shier (1966) found that students working with indirect student teachers achieved more than students working with direct student teachers. This study covered a six week unit in biological science.

Soar (1966) found similar conclusions at the elementary level in a reading comparison. A particularly interesting facet of Soar's study concerned reading growth in the summer period. Those students who had direct teachers during the regular year advanced

three months in reading comprehension while those who experienced the indirect influence made a five and one-half month advance in reading comprehension. This seems to indicate that the indirect teacher has an influence after the formal learning situation ceases.

The whole problem of achievement can be related to the student's sensitivity to the teacher as an authority figure. If the teacher is directive the student finds increasing satisfaction in compliance to authority and his understanding of the subject can decrease as the course progresses. Only if a climate of reassurance, freedom and respect for human dignity is maintained does such a youngster do as well as he is able.

One implication of this study is that closer supervision through the use of direct influence, an all too common antidote to lower achievement, may be more harmful than helpful for dependent-prone students. (Amdion and Flanders, 1969, p. 291)

This last statement is especially important because it implies that a youngster's development is being retarded while it is supposedly being stimulated. Those who already may have a weak desire for education may find it further extinguished by remedial programs. (Amidon and Flanders, 1961)

The above quotation also has implications for grouping and teacher selection. The time appears to be past when grouping of youngsters can take place on the basis of age, sex, or I.Q. and the teacher selected solely on the basis of subject content. Now it

becomes increasingly apparent that personality factors in students and verbal teaching patterns of teachers must also be matched to bring about the desired behavioral change in youngsters. (Amidon and Flanders, 1964)

At the present time no national averages are available which represent hard and fast rules as to what is "desirable" or "undesirable" in the classroom. Probably the person most able to make the final decision is the individual teacher. It is possible, in a general way, to discuss the implications of the reconstructed matrix.

Some data are cited below to give the reader some insight into average percentages available on experienced junior high teachers. These figures represent current practices and not necessarily the best practices. The actual number of teachers involved in this part of the study was not available, but these figures were a result of early research at the University of Minnesota and later research at Temple University.

Statements that belong to category one, accepts feeling, are seldom used, but due to the nature of what they portray, are considered valuable indicators of the nature of the climate in the classroom. The average amount of time spent in this category is less than .5 percent. There appears to be little difference in the use of this category by indirect teachers as compared to direct

















































































































































































































































































































