

Summer 1971

## A Comparison of Seven Teaching Traits between Experienced Special Education Teachers and Experienced Regular Education Teachers

James Edward Thomas  
*Central Washington University*

Follow this and additional works at: <https://digitalcommons.cwu.edu/etd>



Part of the [Educational Methods Commons](#), [Special Education and Teaching Commons](#), and the [Teacher Education and Professional Development Commons](#)

---

### Recommended Citation

Thomas, James Edward, "A Comparison of Seven Teaching Traits between Experienced Special Education Teachers and Experienced Regular Education Teachers" (1971). *All Master's Theses*. 1698.  
<https://digitalcommons.cwu.edu/etd/1698>

This Thesis is brought to you for free and open access by the Master's Theses at ScholarWorks@CWU. It has been accepted for inclusion in All Master's Theses by an authorized administrator of ScholarWorks@CWU. For more information, please contact [scholarworks@cwu.edu](mailto:scholarworks@cwu.edu).

A COMPARISON OF SEVEN TEACHING TRAITS BETWEEN  
EXPERIENCED SPECIAL EDUCATION TEACHERS AND  
EXPERIENCED REGULAR EDUCATION TEACHERS

---

A Thesis  
Presented to  
the Graduate Faculty  
Central Washington State College

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Education

---

by  
James Edward Thomas

June 1971

APPROVED FOR THE GRADUATE FACULTY

---

Hyrum S. Henderson, COMMITTEE CHAIRMAN

---

Jerry DiMinico

---

Sam Rust Jr.

## TABLE OF CONTENTS

	PAGE
LIST OF TABLES.....	v
CHAPTER	
I. INTRODUCTION.....	1
Purpose of the Study.....	1
Hypotheses of the Study.....	2
Terms Used in the Study.....	3
Special education.....	4
Regular education.....	4
Experienced teachers.....	4
Praise or encouragement (individual)..	4
Praise or encouragement (group).....	4
Criticism or reprimand (individual)...	5
Criticism or reprimand (group).....	5
Ask questions.....	5
Lecture.....	5
Directions.....	5
Related Research.....	5
II. METHOD.....	12
Subjects.....	12
Instruments.....	12

	iv
Procedures Used in the Study.....	15
III. RESULTS.....	19
IV. DISCUSSION.....	22
Research Implications.....	27
V. SUMMARY.....	28
REFERENCES.....	30

## LIST OF TABLES

TABLE	PAGE
1. Matrix for Recording Teacher Verbal Categories.....	14
2. Interobserver Agreement Coefficients.....	16
3. Statistical Analysis of Seven Teacher Traits.....	20

## CHAPTER I

### INTRODUCTION

The advent of modern learning theory has slowly and decisively increased its impact in the field of special education (Madsen, Becker, and Thomas, 1968). In effect, the teacher is able to demonstrate certain behaviors which are accountable for establishing and maintaining effective behaviors in children (Rhomas, Becker, and Armstrong, 1968). This summons the question as to whether there are unique behaviors which are helpful or necessary to successfully teach special education classes. It would be of great value for educators if a list of behavioral traits could be established which would identify a successful special education teacher (Hewett, 1966). It is of utmost importance that the behavioral traits be isolated and identified. Once isolated and identified, they may be exposed to experimental study to determine their importance.

#### Purpose of the Study

There seems a need for educational research to find if special education teachers have unique behavioral traits in dealing with children in the classroom. Many studies have been conducted with this general goal in mind.

Unfortunately, most of the studies have dealt with such things as personality traits, attitudes, and characteristics.

The purpose of this study was to determine if there are any significant differences among experienced special education teachers and experienced regular classroom teachers on seven teaching traits. It was hoped that this investigation would point out some behaviors unique to special education teachers since it is believed by many educators that it takes someone with unique traits to be a special education teacher.

#### Hypotheses of the Study

1. The null hypothesis of no significant difference in rate of giving praise or encouragement (individual) of experienced teachers of special education and rate of giving praise or encouragement (individual) of experienced teachers of regular education is postulated.

2. The null hypothesis of no significant difference in rate of giving praise or encouragement (group) of experienced teachers of special education and rate of giving praise or encouragement (group) of experienced teachers of regular education is postulated.

3. The null hypothesis of no significant difference in rate of giving criticism or reprimand (individual) of

experienced teachers of special education and in rate of giving criticism or reprimand (individual) of experienced teachers of regular education is postulated.

4. The null hypothesis of no significant difference in rate of giving criticism or reprimand (group) of experienced teachers of special education and in rate of giving criticism or reprimand (group) of experienced teachers of regular education is postulated.

5. The null hypothesis of no significant difference in rate of question asking of experienced teachers of special education and in rate of question asking of experienced teachers of regular education is postulated.

6. The null hypothesis of no significant difference in amount of lecture of experienced teachers of special education and in amount of lecture of experienced teachers of regular classroom is postulated.

7. The null hypothesis of no significant difference in rate of giving directions of experienced teachers of special education and in rate of giving direction of experienced teachers of regular education is postulated.

#### Terms Used in the Study

The following terms need defining within the scope of this study:

### Special Education

Special education refers to that area of education designated for those pupils unable to benefit from the regular education programs.

### Regular Education

Regular education refers to that area of education designated for those pupils who are able to benefit from typical academic, and/or social, and/or physical instruction.

### Experienced Teachers

Experienced teachers refer to those teachers with two or more years of experience.

### Praise or Encouragement (Individual)

Praise or encouragement (individual) refers to positive verbal comments given by the teacher to an individual child.

### Praise or Encouragement (Group)

Praise or encouragement (group) refers to positive verbal comments given by the teacher to two or more children at the same time.

### Criticism or Reprimand (Individual)

Criticism or reprimand (individual) refers to statements of disapproval; critical comments directed toward an individual by a teacher.

### Criticism or Reprimand (Group)

Criticism or reprimand (group) refers to statements of disapproval; critical comments directed toward a group by a teacher.

### Ask Questions

Ask questions refers to asking questions by teachers, about content or procedure.

### Lecture

Lecture refers to statements by the teachers giving facts, opinions or explanation about content or procedure.

### Directions

Directions refer to a direct statement by the teacher telling a person or group to do something.

### Related Research

A review of literature revealed that a number of studies have been done in relation to verbal behavior of teachers. However, very little research has been conducted

comparing the verbal behavior of special education teachers with the verbal behavior of regular classroom teachers.

An early attempt to analyze verbal behavior was conducted by Horn (1914). The study proposed that an observer record a small circle for teacher verbal behavior and a small square for each time a pupil responded. Within fourteen years, Puckett (1928) had developed a system which categorized both pupil and teacher verbal behavior. His more advanced system used fourteen different symbols to record verbal behavior.

H. H. Anderson (1939) also categorized both teacher and student behavior in a classroom. Anderson's study implied that verbal behavior of teachers caused like behaviors in children.

Withall (1949) produced an "integrative-dominative" ratio almost identical to Anderson's by classifying teacher statements into seven categories using transcripts of teaching behavior. Withall indicated different patterns of verbal behavior used by several teachers can be identified.

Cogen (1956) directed a study of classroom behavior of teachers. He found a high positive relationship between the behavior of the teacher and the amount of self-initiated work performed by the students. Cogen (1956) found:

. . . that pupils will tend to satisfy, as economically as possible, the minimum demands of certain teachers by doing the required work. They will not, on the other hand, tend to perform very much self-initiated work, since this is the symbolic equivalent of remaining longer than is absolutely necessary in proximity to an unpleasant situation (p. 322).

Flanders (1960) developed a system to code certain verbal behaviors within the classroom. This system provided a precise way to observe and code verbal behavior of teachers and pupils. Flanders seemed to feel verbal behavior could be observed with a higher reliability than could non-verbal behavior.

Much previous research concerned itself with value judgements. Flanders, in an attempt to avoid similar terms, called his two general classifications direct and indirect. By placing more emphasis on overt behavior and less on the inference of the observer, Flanders was able to introduce an objectivity into observations.

As part of a study in Minnesota, Flanders (1961) used interaction analysis to classify verbal statements of teachers. "Rule of two-thirds" was suggested as an estimate of the verbal behavior patterns that would fit average data from all classrooms. According to the rule: (1) about two-thirds of the time spent in a classroom someone is talking; (2) the chances are two out of three that the person talking is the teacher; and (3) when the teacher is talking,

two-thirds of the time he will be expressing his own opinions or facts, giving directions, or criticizing students. It is of interest to note that when referring to a superior class: (1) first rule holds; (2) teacher talks fifty to sixty percent; and (3) when the teacher is talking he is lecturing, direction-giving and criticizing forty percent; asking questions, clarifying and developing students' ideas and opinions, giving praise and encouragement sixty percent of the time.

A study was conducted by C. V. Robbins (1967) to assess the knowledge that a group of elementary school principals had of the classroom verbal behavior of certain fourth, fifth, and sixth grade teachers in their schools. The principals' descriptions of the behavior of their teachers was compared with information gathered by an observer in teachers' classrooms and with information supplied by the pupils themselves. Robbins presents evidence which indicates that principals can, with some accuracy, characterize the teaching style of members of their faculty.

The purpose of a study by Furst and Amidon (1962) was to determine the kinds of teacher-pupil interaction patterns which are present in elementary school classrooms. Specifically, answers to two questions were sought: (1) What differences in interaction patterns, if any, exist

among the six grade levels? (2) What differences in interaction patterns, if any, exist among subject areas of reading, social studies, and arithmetic in the elementary grades? Conclusions of the study indicate: (1) Primary teachers feel that question-answer technique is far more appropriate than lecture. On the other hand, intermediate grade teachers apparently felt lecture as most conducive to learning. (2) Primary teachers felt praise and encouragement are important techniques. Intermediate teachers felt less praise and encouragement was needed because of age of their pupils.

Amidon and Giammatteo (1967) in an attempt to determine whether or not there are verbal behavior patterns which are characteristic of superior teachers, conducted a study involving one hundred fifty-three elementary school teachers from eleven suburban districts in Pennsylvania. The comparison of the normative group of teachers with the superior group of teachers gave the following results: (1) Statements of praise and encouragement were used about equally by both groups, but the superior teachers used more praise after student-initiated ideas. They also gave reasons for praise more often than the normative group. (2) Lecture in a continuous fashion was used more by the average group of teachers, but total

lecture time accounted for about forty percent of teacher talk for both groups. (3) Direction-giving was used twice as much by average teachers, and their directions were more apt to elicit silent responses from students. (4)

Criticism was used about twice as much by average group of teachers as a technique for controlling student noise, but both groups used criticism sparingly. Direction-giving followed by criticism, which usually indicated discipline problems, appeared about twice as frequently in the verbal patterns of the average group of teachers.

Prankratz (1967) conducted a study of the verbal behavior of two groups of physics teachers. One group of physics teachers was rated as highly effective and the other was rated as significantly less effective. He found that the more effective teachers used more praise for their students, asked more questions, and used more demonstration.

Madsen, Becker, and Thomas (1968) conducted a study which dealt with elementary classroom control. An attempt was made to vary systematically the verbal behavior of two elementary school teachers to determine the effects of classroom behavior. A significant conclusion of the study showed approval for appropriate behavior is probably the key to effective classroom management.

Rhomas, Becker, and Armstrong (1968) in a study of systematically varying teacher's verbal behavior implied that those teachers who use their approving behavior as immediate consequences for good behavior should find the frequency and duration of appropriate behaviors increase in their classrooms.

## CHAPTER II

### METHOD

#### Subjects

The subjects of this study were twenty-nine experienced elementary teachers from the Kent School District, Kent, Washington. Of the twenty-nine teachers, fifteen were experienced special education teachers and fourteen were experienced teachers of regular education. There were twenty-two females and seven males who participated in the study. The subjects were selected by use of the table of random numbers. The subjects were put in two groups. One group consisted of teachers of special education and the other group were teachers of regular education. The two groups were selected in order that they be statistically compared with each other. The subjects volunteered for the study.

#### Instruments

The measure used to evaluate the subjects' verbal behavior was of the experimenter's own design. It was felt there were no instruments that completely and accurately measured verbal behavior of teachers. However, the Flanders' interaction analysis model of measuring

verbal behavior of teachers was partially adopted for use in the study.

Amidon and Flanders (1963) stated that all verbal behavior that occurs in the classroom can be categorized in one of three major sections: (a) teacher talk, (b) student talk, and a separate category, (c) silence or confusion, used to handle anything else that is not teacher or student talk. Since only teacher verbal behavior was considered in the study, student talk and silence or confusion were not measured.

Within the Flanders' model, every three seconds the observer writes down the category number of the interaction he just observed. He records the numbers in sequence in a column. The observer writes approximately twenty numbers per minute; thus, at the end of a period of time, he may have several long columns of numbers. The instrument used in the study deviated in that the observers did not record data every three seconds. Instead, observers recorded each verbal behavior as it occurred. Greater accuracy is possible if all occurrences of a behavior are counted than if only those occurring in a time sample are counted. The present study did adopt Flanders' idea of recording number in sequence in a column (Table 1).



Flanders (1963) divided teacher verbal behavior into seven categories. Those categories are: (1) accept feelings, (2) praising or encouraging, (3) accepting ideas, (4) asking questions, (5) lecturing, (6) giving directions, and (7) criticizing. It was felt that category (1) accept feelings, and category (3) accepting ideas, could not be measured accurately or precisely. Thus, they were not included in the study. The measure used also deviated from the Flanders' model in that praising or encouraging and criticizing was subdivided into behaviors directed toward a group or an individual. Thus, the experimenter chose those traits which would most likely be representative of teachers verbal behavior. Those traits are: (1) praise or encouragement (individual), (2) praise or encouragement (group), (3) criticism or reprimand (individual), (4) criticism or reprimand (group), (5) questions, (6) lecture, and (7) directions.

#### Procedures Used in the Study

The following procedure was used to ascertain inter-observer agreement. After memorizing the categories, training began with a video-tape recording of a third grade classroom interaction. After approximately six hours of training two observers and the experimenter reached a reliability coefficient of .88 (Table 2). This coefficient

TABLE 2

## Interobserver Agreement Coefficients

Observer	Beginning Tape	Ending Tape
A to B	.83	.91
A to C	.78	.87
B to C	.77	.86

Scott coefficient was used to calculate the interobserver reliability because Scott's method is unaffected by low frequencies, can be adapted to percentage figures, and is more sensitive at higher levels of reliability. The method for computing the Scott Coefficient is found in Flanders (1965) and Scott (1955).

was quite satisfactory since Flanders (1965) recommends that a coefficient of .85 or higher be utilized to establish interobserver agreement.

The three observers used in the study were all college students. One observer was a graduate student with two years teaching experience in elementary special education. The other two observers were juniors at Central Washington State College and were special education majors with practical experience in elementary classrooms.

The experimenter, or a trained observer entered a classroom of one of the selected subjects, experienced teachers of special education and experienced teachers of regular education, in the Kent School District number 415, Kent, Washington. Each subject's verbal behavior was observed and recorded on a matrix (Table 1). The approximate time spent in each classroom was two hours and thirty minutes. The observer entered a classroom at the beginning of school and stayed until lunchtime. The observer then went into another classroom after lunch and stayed until school was dismissed. Each subject was asked to conduct their class using the usual procedure and not to deviate for the observer's benefit. Upon completion of the observation, the subjects were asked if they would like to see the results of the completed study. Only five of the

twenty-nine subjects expressed desire to see the results of the study. When the observations were completed, the writer collected data for final statistical analysis. This data was presented to the Data Processing Center at Central Washington State College. The following statistical analysis was obtained: a mean, standard deviation, variance, standard error, degree of freedom and a "t" test of each of the seven categories. This information made it possible to determine if there was a significant difference between the groups on any of the seven categories of teacher verbal behavior selected for use in the study.

## CHAPTER III

### RESULTS

Table 3 presents a concise statistical analysis of the data for the seven teacher traits used in the study. Of the seven teacher traits measured, there were only two cases in which the "t" value was greater than the critical value ( $.05 = 2.052$ ). Verbal praise directed to individuals by special education teachers (Mean = 2.178, Standard Deviation = 1.012) as compared with regular classroom teachers (Mean = .860, Standard Deviation = .528) was significant at the .001 level (df = 27). Verbal criticism directed to individuals by special education teachers (Mean = .524, Standard Deviation = .345) as compared to teachers of regular education (Mean = .245, Standard Deviation = .187) indicated a significant difference at the .02 level (df = 27). Thus, only the hypotheses dealing with praise (individual) and criticism (individual) were rejected. The first hypothesis (p. 2) dealing with praise (individual) was rejected at the .001 level of significance (df = 27). The third hypothesis (p. 2) dealing with criticism (individual) was rejected at the .02 level of significance. The other five teacher traits of praise (group), criticism (group), questions, direction, and lecture did not reach the critical "t" value of 2.052

TABLE 3

## Statistical Analysis of Seven Teacher Traits

Teacher Traits	Special Education		Regular Education		"t" (df = 27)
	Mean	Standard Deviation	Mean	Standard Deviation	
Praise (Individual)	2.178	1.01	.860	.528	4.437**
Praise (Group)	.163	.236	.058	.061	1.671
Criticism (Individual)	.524	.345	.245	.187	2.726*
Criticism (Group)	.054	.060	.070	.067	-.677
Questions	2.033	.774	1.560	.755	1.664
Directions	2.285	1.320	1.904	1.385	-.755
Lecture	.434	.456	.535	.500	-.569
N	15		14		

\* Significant at the .02 level.  
 \*\* Significant at the .001 level.

for significance at the .05 level, and therefore the null hypothesis of no significant difference was accepted.

Of the seven teacher traits only two were significant at or above the .05 level. Thus it could be said that special education teachers not only use praise comments but also used critical comments significantly more than teachers of regular education when speaking to individual children. The remaining five teacher traits did not reach the .05 level of significance and therefore any differences were considered merely chance.

## CHAPTER IV

### DISCUSSION

A comparative study was conducted on the verbal behavior of two groups of elementary school teachers, experienced teachers of regular education and experienced teachers of special education. Both groups of experienced teachers were teaching elementary grades (1-6) in the Kent School District number 415, Kent, Washington. Within the study, seven categories were used to determine the type of verbal behavior for the designated groups of teachers. The seven categories in the study were adapted for use from Amidon and Flanders' ten categories (1963) of interaction analysis.

A statistical analysis comparing the two groups was made on the data obtained from the study. The statistical analysis revealed a significant difference for two of the seven categories, praise (individual), and criticism (individual). The special group scored higher on both categories.

Praise was described in the following manner:

Praise: Included in this category are jokes that release tension, but not those that threaten students or are made at the expense of individual students. Often praise is a single word: "good," "fine," or "right." Sometimes the teacher simply says, "I like what you are doing." Encouragement is slightly

different and includes statements such as, "Continue." "Go ahead with what you are saying." "Uh, huh; go on; tell us more about your idea." are included (Flanders, 1963, p. 122).

Certainly, the high level of significance (.001) on the use of praise by special education teachers leaves much room for discussion.

Flanders (1965) conducted a study dealing with classroom verbal behavior of teachers. He found that classrooms in which there is a large percentage of teacher praise have greater achievement than classrooms in which these conditions are present to a lesser extent. Thus, it would seem likely that small classrooms where there was much teacher praise directed toward an individual as in the present study, would provide a significantly greater achievement level than larger classrooms without as much individual praise. The findings of the present study confirm that more praise was used by the special education teachers. Thus it would seem logical that the achievement level would also be significantly greater as concluded in Flanders' study (1965).

It has been shown by the experimenter that special education teachers praise and encourage individual children significantly more than teachers of regular education. A major relating factor influencing the results may be the class size of the comparative groups. The class size of

the special education groups never exceeded fifteen but the class size of the regular groups often exceeded thirty students. Certainly a teacher with fifteen pupils would have opportunity to praise each child more than a teacher with thirty pupils. It would also seem logical that children in smaller classes would academically and socially achieve more than children in larger classes. This conclusion was supported by many studies (McKenna, 1955; Pugh, 1965; Varner, 1968; and Vincent, 1968) dealing with class size. A study was conducted by Furno and Collins (1967) dealing with class size and pupil learning. They found that pupils in smaller classes, regardless of whether they were special education or regular classes, were found to make significantly greater achievement gains than students in larger classes.

Criticism was described in the following manner for use in this study:

Criticism: A statement of criticism is one that is designed to change student behavior from non-acceptable to acceptable. The teacher is saying, in effect, "I don't like what you are doing. Do something else" (Flanders, 1963, p. 124).

The significant level (.02) of criticism by special education teachers leaves open avenues for discussion.

It would seem likely that the amount of criticism by special education teachers may be attributed to class size.

Special education teachers would have more opportunity to criticize individual pupils since there were fewer pupils in the special education classes. It would also seem logical the achievement level of students may be related to the amount of criticism given by the teacher. A study was conducted by Flanders (1965) dealing with types of verbal behavior used by teachers. He found that classrooms in which there is a large percentage of criticism by the teacher have less achievement than classrooms in which these conditions are present to a lesser extent.

Since there is no significant difference between the special education teachers and the regular classroom teachers in regard to praise (group), criticism (group), questions, directions, and lecture the null hypothesis of no significant difference is upheld.

The efforts of the present study have been directed toward showing if there is any significant difference in the verbal behavior of special education teachers as compared to regular classroom teachers. The study did indicate a significant difference in two areas of verbal behavior (praise and criticism). The experimenter feels that the significance may be due to class size. It is felt that teachers with fewer children in class have more opportunity to verbally interact with the children on a one to one basis.

Theory and research (Amidon and Hough, 1967) would lead to the conclusion that the teaching patterns of verbal behavior that teachers use create a social-emotional climate in their classrooms that has a direct effect on the behavior of their students. It might be questioned, however, whether a relationship between teacher verbal behavior and teaching effectiveness really does exist. The answer to this question, of course, depends upon the definition of and the criteria used for defining effective teaching. Certainly, defining what effective teaching consists of has been a problem which has plagued educators for many years. The present study has tried to isolate certain verbal behaviors of teachers to determine if there was a difference between verbal behavior of special education teachers and regular classroom teachers.

The concern of the present study, as applied to special education, was to determine if there was a significant difference in verbal behavior of the special education teacher as compared to the regular education teacher in the elementary school. The present techniques of measuring verbal behaviors are still in the infancy stages (Flanders, 1967). Certainly as measuring instruments improve so will the need for further studies in the area of verbal behavior.

### Research Implications

There are many possibilities for further application of this study in the area of verbal behavior of teachers. This study could be done using a larger sample of teachers. Also, a study could compare inexperienced special education teachers with experienced special education teachers. It would also be of interest to identify those teachers who are considered superior and compare them with a control group to determine if there is any significant differences in verbal behavior.

Once a significant verbal interaction pattern were identified, the information could be of value not only to the teachers themselves for self-evaluation, but also to school administrators for employment of teachers. Successful identification of verbal interaction patterns may help alleviate the present turn over rate of teachers in special and regular education.

## CHAPTER V

### SUMMARY

The present study was concerned with the verbal behavior of special education teachers as compared with the verbal behavior of teachers of regular education. Twenty-nine elementary school teachers were divided into two groups. One group consisted of teachers of special education and the other group consisted of teachers of regular education.

It was concluded in the present study that there were areas of significant difference between teachers of special education and teachers of regular education with regard to their verbal behavior. The instrument used was an adaptation from the Flanders interaction analysis model.

Raw data was gathered for each of the following categories: (1) praise or encouragement (individual), (2) praise or encouragement (group), (3) criticism (individual), (4) criticism (group), (5) questions, (6) directions, and (7) lecture. This data were then analyzed by means of the "t" test to find if there was any significant difference. Two of the seven categories were found to show a significant difference. Praise or

encouragement (individual) showed a significant difference at the .001 level. Criticism (individual) showed a significant difference at the .02 level. The other five categories did not reach the critical "t" value of 2.052 and, thus, did not show a significant difference at the .05 level.

Recommendations were made for future study.

## REFERENCES

## REFERENCES

- Anderson, H. H. The measurement of domination and of socially integrative behavior in teachers' contacts with children. Child Development, 1939, 10, 73-89.
- Amidon, E. J., and Flanders, N. A. The role of the teacher in the classroom. Minneapolis: Paul S. Amidon and Associates, Inc., 1963.
- Amidon, E. J., and Giammatteo, M. The verbal behavior of superior elementary teachers. Amidon, E. J., and Hough, J. B. (Eds.), Interaction analysis: Theory, research and application. Massachusetts: Addison-Wesley Press, 1967.
- Amidon, E. J., and Hough, J. B. (Eds.). Interaction analysis: Theory, research and application. Massachusetts: Addison-Wesley Press, 1967.
- Cogen, M. L. Theory and design of a study of teacher-pupil interaction. The Harvard Educational Review, 1956, 26, 315-342.
- Flanders, N. A. Interaction analysis in the classroom: A manual for observers. Minneapolis: University of Minnesota Press, 1960.
- Flanders, N. A. Analyzing teacher behavior as part of the teaching-learning process. Educational Leadership, December, 1961.
- Flanders, N. A. Teacher influence, pupil attitudes, and achievement. Co-operative research monograph, No. 12. Washington, D. C.: U. S. Government Printing Office, 1965.
- Flanders, N. A. Introduction. Amidon, E. J., and Hough, J. B. (Eds.). Interaction analysis: Theory, research and application. Massachusetts: Addison-Wesley Press, 1967.
- Furno, O. F., and Collins, G. J. Class size and pupil learning. Baltimore City Public Schools, October 1967.

- Furst, N., and Amidon E. J. Teacher-pupil interaction patterns in the elementary school. A paper read at Schoolmen's Week, University of Pennsylvania, October 1962.
- Hewett, F. M. A hierarchy of competencies for teachers of emotionally handicapped children. Journal of Exceptional Children, 1966, 33, 7-11.
- Horn, E. Distribution of opportunity for participation among various pupils in classroom recitations. Teachers College Contemporary Educational Bulletin, 1914, No. 67.
- Madsen, C. H., Becker, W. C., and Thomas, D. R. Rules, praise, and ignoring: Elements of elementary classroom control. Journal of Applied Behavioral Analysis, Summer, 1968, 1, No. 2, 1-14.
- McKenna, Bernard. Measures of class size and numerical staff adequacy related to a measure of school quality. Doctor's thesis. New York: Teachers College, Columbia University, 1955.
- Pankratz, R. Verbal interaction patterns in the classrooms of selected physics teachers. Amidon, E. J., and Hough, J. B. (Eds.). Interaction analysis: Theory, research and application. Massachusetts: Addison-Wesley Press, 1967.
- Puckett, R. C. Making supervision objectives. School Review, 1928, 36, 209-212.
- Pugh, James B. The performance of teachers and pupils in small classes. Metropolitan School Study Council, Commission on the School of 1980, Commission Study No. 1. New York: Institute of Administrative Research, Teachers College, Columbia University, 1965.
- Rhomas, D. R., Becker, W. C., and Armstrong, M. Production and elimination of disruptive classroom behavior by systematically varying teacher's behavior. Journal of Applied Behavior Analysis, Spring, 1968, 1, No. 1, 1-12.
- Robbins, C. V. The principal and his knowledge of teacher behavior. Amidon, E. J., and Hough, J. B. (Eds.). Interaction analysis: Theory, research and application. Massachusetts: Addison-Wesley Press, 1967.

- Scott, W. A. Reliability of content analysis: The case of nominal coding. Public Opinion Quarterly, 1955, 19, 321-325.
- Varner, S. E. Class size. U. S. Department of Education Research Summary, National Education Association, Washington, D. C., Report No. RS-1968-SI, 1968.
- Vincent, W. S. Further clarification of the class size question. New York: Institute of Administrative Research, Columbia University, November 1968.
- Withall, J. The development of a technique for measurement of social-emotional climate in classrooms. Journal of Experimental Education, 1949, 17, 347-361.