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The Effects of Conferencing on Teacher and Pupil Verbal Behavior in the Classroom

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THE EFFECTS OF CONFERENCING ON TEACHER AND PUPIL VERBAL BEHAVIOR IN THE CLASSROOM

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CHAPTER I

THE PROBLEM AND ITS RELEVANCE

Recent knowledge in the behavioral sciences, particularly school psychology, suggests that pupil-teacher interaction is a primary factor in the teaching learning process.

Statement of the Problem

Teacher education programs provide prospective teachers with, at best, only a general knowledge of the processes and effects of serious kinds of instructional behavior (Lippitt & White, 1943). It is true, as Deese (1958) said, that, "The current attention of many experimentalists in classroom learning is now directed toward the study of the interaction between social and personality variables and the variables that control learning (p. 329)." However, without some device that can be used to objectively describe a teacher's specific instructional behavior, he can have no way of knowing how he specifically interacts with students. Interactional analysis is an observational system which qualitatively and quantitatively measures teacher verbal behavior in the classroom.

Flanders (1970) felt that because teaching behavior can be measured directly, theories of interaction may be analyzed scientifically. If a teacher is to develop behavior that leads to more effective classroom instruction, he needs to know what is happening, and how it is happening. Feedback, or conferencing, is a technique which will allow the teacher to explore the verbal communication as it happens in the classroom. Before this becomes possible, training in one of the several observational systems is necessary for the teacher. Most systems are unmanageable without intense training. Hough & Duncan (1970) postulated a method for teachers testing their own hypothesis (intent-action-feedback-evaluation) that seemed sound and relatively simple. Of all systems analyzed, Flanders' ten category system appeared to be the one most readily learned. While there were some limitations to categorizing all verbal behavior taking place in the classroom, the writer felt that the simplicity of this system provided the teacher with a useable practical tool to aid in the understanding and the altering of instructional behavior.

Most studies done on the teaching-learning processes until recently have been done on factors such as personality traits of teachers, core curriculum, individualized versus team teaching, modular scheduling or programed learning. While these factors are necessary and important to the learning processes, most of these studies also <u>assumed</u> the

role of the classroom teacher to be static (Withall, 1960).

During the last decade personal interaction among people has become more important to investigators as well as laymen. Colleges require T-Group training of students, industry has sent teams of employees for weekend encounters, while the younger generation experimented with communes. As an awareness of humanism has unfolded in today's society, educators are looking toward what is happening in the classroom between teacher and pupils.

The possibility of a quantitative approach to the analysis of teaching has accelerated the research from universities to the public schools. This is not to say that factors like behavioral objectives and curriculum strategies are not worth while, or that they should not be studied. However, in the final analysis it is the interaction between teacher and class which will be the base line for a measurement of excellence (Evans, 1963).

Purpose of the Study

The purpose of this investigation was to examine the effects (behavioral) of conferencing with a group of high school teachers following observation of their verbal behavior in the classroom. Flanders' System of Interaction Analysis Observation was used for observations. All observations were recorded, but feedback was given to only the experimental group. Feedback concerned verbal interaction

that took place in the classroom between the students and teacher.

Background of Theory and Research

A part of the broad organizational process of education is the evaluation of classroom climate. From personal observation it seems that this aspect of education is usually reduced to making a checklist of sorts, or some other negative means of evaluation with little reference to classroom climate. Thus it was the purpose of the investigator to facilitate the process by translating new and demonstrated policies into action within the school.

Because of technological and social changes occurring in society, the behavior of the teacher in the classroom must change, adapt, or modify; it is the behavioral scientist's responsibility to help with this change. As Robert S. Soar (1966) suggested, the secondary schools must be humanized. This is the theory upon which this study is based. The author felt that one way of implementing this was to use Interaction Analysis as suggested by Flanders (1960).

Interaction Analysis is essentially a means of educating teachers in the choices of alternatives; hopefully the dominative, controlling, direct, highly inconsistent and uncertain teachers will change their own behavior by choosing one which is more conducive to pupil growth, i.e. integrative. The hypothesis is that if a change in teacher

behavior from more direct to less direct teaching is facilitated, then a positive change in learning will take place.

Early research of systematic investigations of spontaneous pupil and teacher behavior were those of Anderson (1939) and Anderson, Brewer, and Reed (1946). The observations of "dominative" and "integrative" behavior of teachers were the behavior traits on which the studies were based. Since that time most research has been based on the qualitative differences that were determined between a dominative and an integrative social contact and the distinctions established:

> A preliminary study showed that it was possible to devise reliable measures of behavior of young children. Behavior was recorded as 'contact' and 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 free 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, Brewer & Reed, 1946, p. 12).

Follow-up studies (Anderson, et al., 1946), conducted in preschool, primary and elementary school classrooms and extending over several years produced three significant findings: first, the two types of contacts, dominative and integrative, of the teacher, set the climate of the class-

room. The assumption was that if the teacher was more dominative, this behavior would spread throughout the classroom. Even when the teacher was no longer in the room his pattern of behavior would spread among the pupils. Also, as a teacher developed a pattern of behavior in one year, it generally would carry over to the following year with other classes. Second, when a teacher showed a greater amount of dominative contacts, pupil behavior would be more distracted from work, and the pupil could either go along with or oppose teacher domination. Third, when a teacher showed a greater amount of integrative contacts, pupil behavior would be more spontaneous, he would make voluntary contributions and become more involved in problem solving.

In an earlier study, Anderson (1939) demonstrated that in individual teacher-contacts each teacher had twice as many dominative as integrative contacts, and in group contacts the ratio rose to over five to one. Flanders' concepts of indirect and direct influence were partially based on Anderson's ideas and categories (Amidon & Hough, 1967).

Lippitt and White (1943) reported the effects of leader behavior on children's groups. Certain advantages were gained in their approach to studying the effects of the adult leaders' behavior. First, different patterns of behavior were defined and made more consistent through role playing and training. Second, the differences in each

adult's personality were controlled through role rotation. Third, only five boys were used in a group, modifying the effect of the pattern of leader behavior as compared with a classroom situation.

The inherent patterns, basically the same as Anderson's, were "authoritarian leadership" vs. "integrative contacts" (Lippitt et al., 1943). Also included in their study was the pattern "laissez-faire leadership" that was not generally found in the classroom and which was not used in Anderson's studies. Results of the investigation (Anderson et al., 1946) were either confirmed and/or extended by the Lippitt and White (1943) study. One noteworthy conclusion was the conceptualization of "dependence on the leader" by Lippitt and White: Minus directions from their leader the group members could not carry on their tasks. Anderson et al. (1958) found similar results using the category "conforming to teacher domination," confirming that compliance results when a condition of dependence is established.

Withall's study (1949) revealed some variations of the previous findings. Major concepts of theories of learning taken from the associationists and field-theorists guided his study. If it is postulated that self-actualization is the primary motivational force then human behavior is influenced by: a need for self-consistency, interaction in terms of an internal frame of reference, self-directive behavior and achievement of personal significance, and

private meanings in a social milieu. Withall (1949) further postulated that changes in behavior are more likely to occur when experiences are "meaningful to the learner," and "occur in a nonthreatening situation." To research these postulates a technique was designed to measure social-emotional climate in the classroom through a systematic categorizing of teacher statements. The system has been shown to have objectivity, reliability and validity (Withall, 1951).

Cogan (1956) analyzed the perceptions that students had of their own instructors. It was found that there was a relationship between the way the instructor was perceived by his students and the amount of self-initiated work that the students reported doing. Extra school work was done when the teacher's behavior was seen as falling into the integrative pattern instead of the dominative one.

Snygg and Combs (1961) proposed that the basis of good teaching lies in the ability of teachers to challenge pupils without threatening them and that the difference between challenge and threat lay primarily in what students perceived the teacher to be doing rather than what the teacher believed he was doing.

The findings of these studies tend to support the need for changing teacher behavior. Results indicated that the most conclusive functions performed by the teachers were in the category of "controlling." The teacher directed the students in what they should do and how they should do it,

what and how they should answer. Various writers felt that controls of this nature often do not let students explore, create or learn for themselves. The controlling functions, coupled with the use of negative functions, i.e. threats, accusations and reprimands, made up two-thirds of the teaching acts. This left little for the functions that developed content or the kinds of responses from teachers that sought the expansion of ideas, opinions, and cognitive thinking. Approximately 20 per cent of the functions fell into categories that developed content. "A definition of good teaching within our framework of functions performed in the classroom, requires a reduction in the number of Controlling Functions performed" (Hughes, 1959, pp. 289-95).

Flanders (1963) found that about two-thirds of the time, somebody was talking in the classroom, that about two-thirds of this talk was direct. Gallagher and Aschner (1963) felt that seldom was the talk above the transmission of rote facts. Under these conditions, where a student was under close control and highly directed, it would be very difficult to deal with ideas, concepts or inquiry.

Since the writer felt that it was the responsibility of the teacher educator to help teachers change their behavior, it was suggested that the Flanders method of Interaction Analysis be implemented as a tool to be used in this direction.

Plan of Approach and Hypotheses

Flanders' system of observing and classifying teacher-pupil behavior is concerned only with the verbal interaction of the teacher and pupils. Every interaction is identified as belonging to one of ten categories (see Appendix D). Seven categories reflect teacher activities, two, pupil activities, and one, a miscellaneous category of silence and/or confusion. Four of the seven teacher categories are labeled indirect influence which support and expand freedom for pupils: 1) Accepts Feeling, 2) Praises or Encourages, 3) Accepts or Uses Ideas of Student, and 4) Asks Questions. Three teacher categories, labeled direct influence, tend to direct pupils, to restrict freedom, and to convey a negative tone: 1) Lecturing, 2) Giving Directions, and 3) Criticizing or Justifying Authority. The two pupil categories differentiate student talk in response to the teacher from talk which represents an imitation of an idea or question by the student.

The observer sits in the classroom observing classroom climate for 10 minutes and begins to write once every three seconds the number of the category which describes what is going on at that moment. If something changes, he records this as well. By the end of a 10 minute systematic observation, the observer has recorded some 200 tallies in sequence, in columns (see Appendix A). Because of the way in which the categories are tallied, it is possible to tell

at any given time the nature of what has been verbalized in the classroom. It is possible to find out exactly what the teacher did immediately after a pupil started talking. Did he praise, did he use the ideas of the pupil, or did he ignore and proceed on his own? Also, did he criticize, give directions or justify his authority? This also tells who did the originating of the talking, pupil or teacher. Did the talking follow direct or indirect teacher functions (see Appendices B and C)?

Flanders, in studying teachers and their students, found that the more favorable pupil attitudes were associated with more indirect teaching, i.e., greater use of praise, clarifying and using pupils' ideas, and asking questions. It seemed that the indirect teacher was more attentive to the students and what they said, and made better use of the students' ideas; direct teachers gave more directions and their students resisted them more.

To facilitate the use of the preceding plan on an experimental basis, a stratified random selection of two groups of 12, each composed of four non-directive and eight directive academic teachers were selected.

Three hypotheses, tested as null hypotheses, were proposed for analysis:

1. There will be no significant difference between the classroom verbal behavior of conferenced and non-conferenced teachers.

2. There will be no significant difference between the classroom verbal behavior of pupils of conferenced and non-conferenced teachers.

3. There will be no significant change in direct and indirect teacher influences of directive and non-directive conferenced teachers as measured before and after the experiment.

If educational excellence is to be achieved, use must be made of a systematic measurable approach, one acceptable to teachers and meeting the tests of reliability and validity. Flanders' Interaction Analysis System is a current tool capable of meeting these criteria.

Some of the early research (Medley & Mitzel, 1959; Brookover, 1945) tended to show that "nothing makes a difference;" however, more recent studies indicated that in general, a more indirect, open, supportive pattern of teacher behavior does facilitate student growth. Hughes (1959) supported current studies stating: "What teachers do in the classroom makes a difference (p. 222)."

CHAPTER II

EXPERIMENTAL DESIGN AND PROCEDURE

Population and Sample

The high school selected for the study had a total teacher population of 31. Of the 31, 24 teachers were selected to participate in the study. Teachers of activity classes were eliminated because of the difficulties anticipated in making systematic observations in their classes. Specifically, physical education teachers, music teachers, and vocational arts teachers were eliminated. This study was primarily concerned with instructional behavior, and this was the basic reason that activity teachers were not included. The system per se, did not include observation in activity classrooms.

Burlington-Edison High School is located in what is regarded as a politically conservative community. The community is made up of families employed primarily in agriculture. The socio-economic levels of the community members are predominately middle to upper middle class with a small minority of white and Mexican American farm laborers. In light of this, the teachers hired in the school district tend also to be conservative.

The total population of 24 academic teachers was used in the study. Prior to the start of the experiment, each member of the group was observed in the classroom by an independent observer and was, in accordance with his instructional behavior, designated as either directive or non-directive. Twenty-one of the 24 subjects were experienced teachers. Three were first year. Nine subjects were female, 15 were male.

Method and Procedure

Prior to the beginning of the study, Scott's (1955) method of reliability was implemented in order to assure that an acceptable level of observer reliability had been obtained. Reliability checks of the two observers used were made on three different occasions. During the third check the observers maintained a reliability coefficient of .87 which is above the acceptable level. Reliability checks were run during the study; these indicated continued reliability above .85.

Pre- and post-observations were made by the independent observer. Observations made during the study for purposes of the study were made by the experimenter.

As a result of the study made by the independent observer, 16 teachers were designated as directive and eight as non-directive. From these two groups, the experimental (X) and control (Y) groups were randomly selected, each

being composed of eight directive and four non-directive subjects (Ss).

Once a month each S in the X and Y group was observed by the experimenter for a period of ten minutes. The observer used the Flanders System of Interaction Analysis. The day immediately following observation, Ss in the X group were given the results of the Flanders Observation System (FOS) and were conferenced by the experimenter on the basis of them. Conferences took from 30 to 50 minutes. Ss in the Y group were given no feedback regarding the results of the FOS, nor were they conferenced. Including pre and post observations, every S was observed a total of six times. Ss in the X group were conferenced four times. At the end of the study all Ss (X and Y) were again observed using the FOS by the independent observer.

At the completion of the study, the pre and post tests of the FOS were compared for differences made on the basis of measures of the following: 1) comparison of the effect of conferencing and no conferencing, 2) comparison of the effect of feedback on directive and non-directive teachers (X group only), 3) comparison of the effect of observations on the Y group only, 4) comparison of percentages of categories of classroom influence before and after. Because the X and Y group was one classification, and the pre- and post-test was another classification, a two way and a three way factorial design of analysis of variance as found

in Weiner (1962), and Bruning & Kintz (1968) was applied for analysis of the data. Differences at the .05 level were considered significant.

CHAPTER III

ANALYSIS OF DATA AND RESULTS

The General Plan

Testing of the experimental hypotheses was accomplished through analysis of variance, through determination of the significance of the differences among the several means involved. Two classifications of teachers, Directive (D) and Non-Directive (ND) were randomly assigned to an experimental (X) and a control (Y) group. The experimental condition was conferencing, and it was the intent of the study to examine the effect of the experimental condition on the experimental group.

First, the pre-test scores of both total groups were examined on two variables: 1) The proportion of time teachers talked, and 2) The proportion of time students talked. Analysis of variance indicated that there was no significant difference between the two total groups at the beginning of the experiment.

Both the experimental group and the control group were considered as total groups, but composed of two subgroups each. Each total group contained four Non-Directive teachers (NDT) and eight Directive teachers (DT). Subjects fell, therefore, into one of four possible combinations of

conferenced or non-conferenced in interactional analysis. The figure below illustrates the groups that evolved for the present study.

Group X Conferenced- Non-Directive (N=4)	Group Y Non-Conferenced- Non-Directive (N=4)
Group X Conferenced- Directive (N=8)	Group Y Non-Conferenced- Directive (N=8)

Three measures of proportion, gathered by means of the Flanders Observational System, were used in comparing teacher influence of the subjects of the study: 1) Teacher talk, 2) Student talk, and 3) Silence and/or confusion. Analysis of variance was used to test within-group and between-group variance for significance.

Hypothesis 1

Hypothesis 1 was that there would be, at the end of the experiment, no difference between the verbal behavior (amount of teacher talk in the classroom) of conferenced and non-conferenced teachers. The total proportion of teacher talk (direct and indirect) for the conferenced group declined 9.12%; for the non-conferenced group, .89%, as shown in Table 1. The significance level ($F=2.861$, $P<.10$) did not allow for rejecting of the null hypothesis, as shown

TABLE 1

MEAN PERCENTAGE SCORES FOR CONFERENCED AND NON-CONFERENCED TEACHERS BEFORE AND AFTER TREATMENT

	Conferenced			Non-Conferenced		
Groups	Before	After	% D	Before	After	% D
Teacher Talk	61.60	52.48	-9.12	62.30	61.41	-.89
Student Talk	33.24	43.75	+10.55	32.18	35.67	+3.46
Silence and/or Confusion	5.12	3.77	-1.35	5.52	2.92	-2.60

TABLE 2

MEAN PERCENTAGE SCORES FOR CONFERENCED DIRECTIVE AND NON-DIRECTIVE TEACHERS AND NON-CONFERENCED DIRECTIVE AND NON-DIRECTIVE TEACHERS FROM FINAL OBSERVATION MATRIX

	Conferenced			Non-Conferenced		
Groups	Directive	Non-Directive	Mean Total	Directive	Non-Directive	Mean Total
Teacher Talk	57.79	47.18	52.48	65.73	57.10	61.41
Student Talk	37.55	49.95	43.75	30.94	40.40	35.67
Silence and/or Confusion	4.66	2.87	3.77	3.33	2.50	2.92

in Table 3.

Hypothesis 2

Hypothesis 2 was that there would be, at the end of the experiment, no difference between classroom verbal behavior of the students of conferenced and non-conferenced teachers. The proportional increase of student talk was 7.09% greater with conferenced than non-conferenced teachers (10.55% vs. 3.46%), as shown in Table 1. The null hypothesis was not supported as shown in Table 3 ($F=5.707$, $P<0.05$). The difference, therefore, between student talk before and after the experiment, within the classrooms of conferenced and non-conferenced teachers was significant beyond the .05 level (see Tables 1, 2, and 3).

Hypothesis 3

Both the experimental and the control group were made up of equal numbers of teachers who demonstrated direct instructional behavior, and teachers who demonstrated indirect instructional behavior. Hypothesis 3 stated that the effect of conferencing would not differ for directive and non-directive teachers. Matrix categories 1-4 designated indirective teacher behavior, and 5-7 directive teacher behavior. The hypothesis stated that the increase or reduction in these two kinds of behavior will be the same for teachers originally judged as primarily directive or primarily non-directive. Table 3 shows the proportional data

TABLE 3

ANALYSIS OF VARIANCE FOR TEACHER TALK, STUDENT TALK, AND SILENCE AND/OR CONFUSION

Source	df	MS	F
TT C-NC	1	288.120	1.457
TT Pre-Post Conferenced	1	565.813	2.861
ST C-NC	1	242.550	1.458
ST Pre-Post Conferenced	1	949.630	5.707*
SC C-NC	1	1.920	0.070
SC Pre-Post	1	50.430	1.841

Note.--C-NC = Conferenced-Non-Conferenced Subjects, TT = Teacher Talk, ST = Student Talk, SC = Silence and/or Confusion.

*$p < .05$.

related to teacher behavior.

Regarding conferenced teachers: The directive teachers increased their indirect talk (+3.25%) while the indirect talk of the non-directive teachers decreased (-1.6%). This difference between the two (4.85%) was significant at the .05 level. It should be pointed out, however, that the indirect talk of the non-directive teachers was high at both the beginning and end of the experiment. The direct talk of the non-directive teachers did not change significantly as a result of conferencing. However, the conferenced directive teachers reduced their direct talk during the experiment beyond the .01 level of significance (see Tables 4 and 6).

Regarding non-conferenced teachers: Non-directive teachers increased their directive behavior (+17.22%), while the directive teachers reduced theirs (-12.69%). The difference between the two proportions of change (29.91%) was significant beyond the .05 level. Neither the direct behavior nor the indirect behavior of the non-conferenced teachers changed significantly between the beginning and the end of the experiment (see Tables 5 and 6).

TABLE 4

PERCENTAGE MEANS OF TEACHER DIRECT BEHAVIOR AND TEACHER INDIRECT BEHAVIOR FOR DIRECTIVE AND NON-DIRECTIVE CONFERENCED TEACHERS

Behavior	Directive Conferenced Teachers			Non-Directive Conferenced Teachers		
	Pre	Post	% D	Pre	Post	% D
1-4 Indirect	35.23	33.63	-1.60	22.28	25.53	+3.25
5-7 Direct	16.83	13.48	-3.35	48.88	32.26	-16.62

TABLE 5

PERCENTAGE MEANS OF TEACHERS' INDIRECT BEHAVIOR AND TEACHER DIRECT BEHAVIOR FOR DIRECTIVE AND NON-DIRECTIVE NON-CONFERENCED TEACHERS

Behavior	Directive Non-Conferenced Teachers			Non-Directive Non-Conferenced Teachers		
	Pre	Post	% D	Pre	Post	% D
1-4 Indirect	38.55	27.25	-11.30	25.24	30.23	+4.99
5-7 Direct	12.63	29.85	+17.22	48.19	35.50	-12.69

TABLE 6

ANALYSIS OF VARIANCE FOR DIRECT AND INDIRECT TALK OF CONFERENCED AND NON-CONFERENCED TEACHERS

Source	df	MS	F
Conferenced Teachers			
Indirect Talk (DT vs. NDT)	1	590.8033	4.540*
Indirect Talk (pre-post)	1	16.0067	0.123
Direct Talk (DT vs. NDT)	1	3445.9352	25.465**
Direct Talk (pre-post)	1	891.8204	6.590*
Non-Conferenced Teachers			
Indirect Talk (DT vs. NDT)	1	142.4852	0.753
Indirect Talk (pre-post)	1	1.1704	0.006
Direct Talk (DT vs. NDT)	1	2264.6269	4.494*
Direct Talk (pre-post)	1	44.2817	0.088

Note.--DT vs. NDT = Direct Teachers vs. Non-Direct Teachers.

*p .05.

**p .01.

CHAPTER IV

DISCUSSION

Statement of Results

This study dealt with the effects of conferencing with a group of high school teachers to determine if change in their verbal behavior or the verbal behavior of their students would result. One of the three null hypotheses was accepted. The conclusion regarding the other two was that there was significant statistical support to allow for their rejection. The ultimate conclusion of the study was that conferencing appeared to promote change for non-directive teachers.

Hypothesis 1

Analysis of the data related to hypothesis 1, concerning the increase or decrease in the amount and kind of verbal behavior of the teachers, yielded an $F=2.861$ ($P=.0948$) which allowed for the acceptance of the null hypothesis. Conferencing did have an effect on the total amount of talk, teacher and student, but the direction was not in all cases as desired. For example, non-directive teachers tended to increase their directive classroom influence. There is evidence from previous research of significant change in

teachers' verbal behavior as a result of conferencing. However, while this study indicated that there was a trend toward less teacher talk and a trend toward more student talk, the changes in the former were not significant.

Hypothesis 2

Hypothesis 2, concerning amount of student talk, was rejected on the basis of an $F=5.707$ which is significant at the .05 level. The student talk increased as a result of conferencing although the data indicates that the total talk of the conferenced teachers did not decrease significantly; the decrease, coupled with the decrease in the amount of silence and/or confusion (-1.35%) was sufficient to affect a significant increase in student talk. The occurrence of both of these changes, though neither was in itself significant, was necessary to bring about an increase in student participation that was significant.

Hypothesis 3

Hypothesis 3 stated that there would be no significant change in the direct and indirect influence of conferenced and non-conferenced teachers. Both the directive and non-directive conferenced teachers reduced the amount of their direct talk; the total or combined talk, with an $F=6.59$, which was significant at the .05 level, allowing for the rejection of the null hypothesis.

Analysis of the data indicated further that non-directive teachers were much more influenced by conferencing than were directive teachers. Non-directive conferenced teachers reduced their direct behavior by 16.62%, while the directive teachers reduced theirs by 3.35%. Analysis of variance yielded a with-in group $F=25.465$ which is significant beyond the .05 level. What this said, in effect, was that conferencing had little effect on directive teachers in regard to their directive influence. Further conjecture is that the significant gains made by the conferenced teachers as a total group were the result primarily of the changes made by the non-directive teachers.

Although not related specifically to hypothesis 3, data related to the non-directive, non-conferenced teachers supported the above conjecture. These teachers increased their indirect behavior and decreased their direct behavior. Although neither of these changes was significant, the differences between the direct behavior of the directive and non-directive non-conferenced teachers was significant. The directive teachers increased their direct behavior while the non-directive teachers decreased theirs. Analysis of variance yielded a between-group F of 4.494 which was significant at the .05 level. This reversal may have been due to the abuse of controls. It did not appear to the writer that discussions regarding the experiment were occurring between the experimental and control groups when, in fact, this may

have been so.

In the event of replication, this study suggests that in addition to the experimental and control groups from the same school, there should be a control group from a different geographical location. There seems to be no other way of determining if, in fact, interaction and discussion between control and experimental groups occurred, or of preventing contamination of the data because of interaction or discussion.

It is also recommended that more pre-experimental observations be conducted before the groups are labeled directive or non-directive. If a teacher is labeled directive on the basis of one 20 minute observation, he may, in fact, be non-directive the next ten observations. It would seem better to use a pre-determined ratio vs. indirect rather than dividing from the mean percentage based on categories (1-4) indirect influence, vs. (5-7) direct influence. Then an average of three or more observations would be used to divide the subjects for the groups. Sampling error, because samples are almost always small, and bias are evident in most research; in interaction analysis, it is of particular importance to minimize error, otherwise any attempt at generalization is futile.

Analysis of data could have been more expediently handled if proportions had been changed from percentages to ratios of direct and indirect influence. By dividing all

tallies in categories 1+2+3+4 by the total in categories 5+6+7, an I/D and i/d ratio is obtained. The i/d ratio merely excludes categories 4 and 5 and becomes 1+2+3 divided by 6+7. The reason for two ratios is that in some subject matter fields, such as mathematics, questions (category 4) are used differently than they are in other fields, such as social studies. Thus, the i/d ratio is affected less by the subject matter being taught.

Students' abilities may tend to have an effect on the teaching strategies of the teacher. A bright class would seem to allow more time for student ideas and less teacher control or influence, while a dull class would tend to be much more dependent upon the teacher for directiveness. Further studies should take this factor into account.

Time and circumstances permitting, a replication of this study following a period of time is strongly recommended. N. A. Flanders, in conversation with the investigator (June 21, 1970) said he felt that 90% of what we know about teacher behavior in the classroom has been discovered in the last decade, and 80% of that in the last two years; teachers are increasingly aware of their intentions and behavior and the congruence or incongruence between them.

"A teacher needs to know what effect each behavior manifests, so that he can exhibit those behaviors which will achieve his purposes most efficiently (Medley & Mitzel, 1962, p. 320)". However, the study showed that a teacher will

change his behavior only if he sees a need to change, and if he has the desire to change.

CHAPTER V

SUMMARY

The purpose of this study was to determine the behavioral effects of conferencing with high school teachers following observations of their behavior in the classroom. The basis of observation, feedback, and conferencing was Flanders' System of Interaction Analysis. All observations were recorded, but feedback was given only to the experimental group.

Once a month each subject in both the experimental and control groups was observed. Subjects in the experimental group were given the results of the observation and discussed them with their supervisor. At the completion of the study, comparisons were made on the following: 1) effect of conferencing vs. non-conferencing on teacher verbal behavior, 2) effect of conferencing with teachers on student behavior, and 3) effect of conferencing on directive vs. non-directive teachers.

Of the three null hypotheses tested, 1) was accepted, and 2) and 3) were rejected. Analysis of data indicated that conferencing increased indirect classroom influence and amount of student talk. Analysis of data indicated

further that non-directive teachers were much more influenced by conferencing; although significant differences were obtained, indicating desired change, these differences in the total groups of conferenced teachers were the result of changes made by the non-directive rather than the directive teachers in the experimental group.

This study concludes that teachers can change their classroom behavior. It suggests, however, that this will occur only when teachers see a need to change, have the desire to change, and are flexible enough to do so.

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APPENDIX A

SAMPLE TALLY SHEET

APPENDIX A

SAMPLE TALLY SHEET

Observer: _____ Date: _____

10	9	8	8	3	5	5	8	3	5					
9	3	3	3	4	5	4	3	3	5					
9	9	3	3	8	5	5	3	4	4					
3	3	3	9	3	5	5	4	8	8					
3	3	3	3	3	5	9	8	4	8					
4	3	3	4	4	5	9	3	8	3					
8	9	4	9	9	5	4	3	5	9					
8	3	4	4	9	5	3	9	5	9					
7	4	8	8	3	5	9	3	6	3					
8	8	3	9	3	5	3	6	6	3					
8	3	3	3	4	5	9	6	7	9					
3	9	4	3	9	5	4	6	5	9					
3	3	8	3	3	5	8	4	5	3					
3	3	4	9	9	5	3	8	5	3					
9	3	8	3	2	5	3	6	9	4					
4	9	3	9	6	5	4	6	5	3					
8	9	3	3	6	5	8	4	5	3					
3	3	3	3	5	5	4	4	5	3					
3	4	4	4	5	5	5	8	9	4					
3	4	8	9	5	5	8	8	9	10					

Summary

Categories

	1	2	3	4	5	6	7	8	9	10
Totals	0	1	61	31	37	9	2	26	31	1

APPENDIX B

SAMPLE WORKING MATRIX

APPENDIX B

SAMPLE WORKING MATRIX

	1	2	3	4	5	6	7	8	9	10	
1											0
2						1					1
3			29	17		1			14		61
4			2	3	2			18	5	1	31
5				2	30	1		1	3		37
6				2	1	5	1				9
7					1			1			2
8			13	3	1	1	1	6	1		26
9		1	17	4	2				7		31
10									1		1
	0	1	61	31	37	9	2	26	31	1	

APPENDIX C

SAMPLE OBSERVATION MATRIX

APPENDIX C

SAMPLE OBSERVATION MATRIX

CLASS CODE NO. _____ OBSERVER _____ DATE _____

CATEGORY	1	2	3	4	5	6	7	8	9	10	TOTAL TALLIES
1											0
2						1					1
3			29	17		1			14		61
4			2	3	2			18	5	1	31
5				2	30	1		1	3		37
6				2	1	5	1				9
7					1			1			2
8			13	3	1	1	1	6	1		26
9		1	17	4	2				7		31
10									1		1
TOTAL TALLIES	0	1	61	31	37	9	2	26	31	1	199
INCI-DENTS	0	1	32	28	7	4	2	20	24	1	
%	0	.5	30.7	15.6	18.6	4.5	1.0	13.1	15.6	.5	
of Total	46.8				24.1			28.7		.5	
	Teacher Total: 70.9							Student Total		Si-lence	

APPENDIX D

CATEGORIES OF INTERACTION ANALYSIS

APPENDIX D

CATEGORIES OF INTERACTION ANALYSIS

TEACHER TALK	Indirect	1.* ACCEPTS FEELING: accepts and clarifies the feeling tone of the students in a non-threatening manner. Feelings may be positive or negative. Predicting or recalling feelings are included.
		2.* PRAISES OR ENCOURAGES: praises or encourages student action or behavior. Jokes that release tension, but at the expense of another individual; nodding head, or saying "um hum?" or "go on" are included.
		3.* ACCEPTS OR USES IDEAS OF STUDENTS: clarifying, building, or developing ideas suggested by a student. As teacher brings more of his own ideas into play, shift to category five.
		4.* ASKS QUESTIONS: asking a question about content or procedure with the intent that a student answer.
	Direct	5.* LECTURING: giving facts or opinions about content or procedures; expressing his own ideas, asking rhetorical questions.
		6.* GIVING DIRECTIONS: directions, commands, or orders to which a student is expected to comply.
		7.* CRITICIZING OR JUSTIFYING AUTHORITY: statements intended to change student behavior from non-acceptable to acceptable pattern; bawling someone out; stating why the teacher is doing what he is doing; extreme self-reference.
STUDENT TALK	Response	8.* STUDENT TALK-RESPONSE: talk by students in response to teacher. Teacher initiates the contact or solicites student statement.
	Initiation	9.* STUDENT TALK-INITIATION: talk by students which they initiate. If "calling on" student is only to indicate who may talk next, observer must decide whether student wanted to talk. If he did, use this category.
		10.* SILENCE OR CONFUSION: pauses, short periods of silence and periods of confusion in which communication cannot be understood by the observer.

*There is NO scale implied by these numbers. Each number is classificatory; it designates a particular kind of communication event. To write these numbers down during observation is to enumerate, not to judge a position on a scale.